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MEMORANDUM

SUBJECT: **Carbaryl**: Revisions to Occupational Exposure and Risk Assessment. DP Barcode: 334881, PC Code: 056801

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This document serves as a revision to the February 2003 occupational risk assessment conducted to support the Interim Reregistration Eligibility Decision (IRED) for Carbaryl (J. Dawson., D287251). It will address only the occupational exposure assessment portion of the previous risk assessment. A separate document addresses revisions to the residential assessment portion and will be available under DP number 334862. This document reflects:

- Updates to the toxicological points of departure (PoD) and the Food Quality Protection Act (FQPA) safety factor;
- the inclusion of mitigation measures required in the carbaryl IRED (06/30/2003); and
- responses to submitted public comments and a Generic Data Call-In which are applicable to the occupational risk assessment.

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Executive Summary

Carbaryl [1-napthyl methylcarbamate] is one of the most widely used broad spectrum insecticides in agriculture, professional turf management, professional ornamental production, and in the residential pet, lawn and garden markets. Carbaryl is used in agriculture to control pests on terrestrial food crops including fruit and nut trees (e.g., apples, pears, almonds, walnuts, and citrus), many types of fruit and vegetables (e.g., cucumbers, tomatoes, lettuce, blackberries, and grapes), and grain crops (e.g., corn, rice, and sorghum). There are other uses for ornamentals and turf, including production facilities such as greenhouses, golf courses, and residential sites that can be treated by professional applicators (e.g., annuals, perennials, shrubs). In agriculture, groundboom, airblast, and aerial applications are typical. Other applications can also be made using handheld equipment such as low pressure handwand sprayers, backpack sprayers, and turfguns.

Mitigation measures, as outlined in the carbaryl IRED, were required as certain uses posed unreasonable risks to human health. Carbaryl poses risks of concern to occupational handlers who mix, load, and apply carbaryl in agricultural sites, and workers who are exposed upon re-entering treated agricultural areas. The Agency previously evaluated 28 major occupational exposure scenarios which resulted in about 140 crop/rate/acreage risk calculations to assess dermal and inhalation exposures to carbaryl handlers. Although several scenarios exceeded the Agency's level of concern, these handler risk concerns were mitigated by implementing various levels of personal protective equipment (PPE) and engineering controls, in most cases. To address occupational handler exposure/risks of concern, the following actions were taken:

- Certain uses and application methods were canceled:
    - Wheat use;
    - Pet uses (except pet collars);
    - Applications by hand, spoon, and bellygrinder; and
    - All direct uses on poultry and in poultry houses.
- Maximum application rates were reduced for mosquito control, citrus, asparagus, and sunflowers.
- Aerial applications were prohibited for:
    - Wettable powder formulations; and
    - Granular and bait formulations applied to corn (field, pop, and sweet), grain sorghum, alfalfa, rice, and sunflowers.
- Additional PPE and engineering controls are to be used for aerial/chemigation and ground airblast applications, and for use of granular and bait, liquid, and wettable powder formulations.

The Agency also evaluated post application (re-entry) risks to workers who enter areas previously treated with carbaryl. For workers involved in postapplication activities, the Agency assessed risks at various time intervals after application, and then set restricted entry intervals (REIs) to ensure that workers wearing baseline protective clothing could

safely reenter treated areas. To address occupational postapplication exposure/risks of concern, the following actions were taken:

- 12-hour REIs for carbaryl were extended for most crop uses;
- Maximum application rates were reduced for citrus (including California citrus and Florida 24(c) registration), asparagus (including both pre-harvest and post-harvest applications), field corn, and stone fruit; and
- Some transfer coefficients (TCs) applicable to specific crop grouping/activity combinations were modified.

Since the carbaryl IRED was posted for public comment in October 2004, EPA received numerous comments regarding the occupational and residential exposure assessment portions. Those which are specific to the occupational portion, and have not been addressed in the past, are comments from USDA APHIS regarding the application of carbaryl bait formulations for suppression of Mormon cricket and rangeland grasshoppers and a comment from Bayer addressing an Agricultural Handlers Exposure Task Force (AHETF) open-cab tractor airblast applicator exposure study in orchards (MRID 464482-01). Several other comments received (i.e., clarifications or corrections for REI changes, application methods, or application rates for specific crops) have been addressed by the revisions captured herein.

The Agency received three occupational handler studies from Bayer Crop Science in response to a March 2005 Generic Data Call-In (GDCI-056801-21325) requirement for applicator exposure data. All of the following studies submitted were conducted by AHETF:

- MRID 464482-01 – "Determination of Dermal and Inhalation Exposure to Workers during Application of a Liquid Pesticide Product by Open Cab Airblast Application to Orchard Crops";
- MRID 466341-05 - "Determination of Dermal and Inhalation Exposure to Workers during Closed-System Loading and ULV Application of a Liquid Pesticide Product to Cotton"; and
- MRID 470516-01 - "Determination of Dermal and Inhalation Exposure to Workers During Loading or Application of Carbaryl Bait."

In addition, a residue dissipation study, "Carbaryl: Dissipation of Dislodgeable Foliar Residues from Chrysanthemums" (MRID 468928-01), was submitted by the Interregional Research Project Number 4 (IR-4) of Rutgers University in support of carbaryl use on chrysanthemums. All studies were reviewed by HED and were considered for their usefulness for quantitative risk assessment purposes.

All studies have been reviewed by HED and were considered for quantitative risk assessment purposes

Hazard Concerns

Carbaryl is an *N*-methyl carbamate (NMC) insecticide in which the mode of action is carbamylation of acetylcholinesterase. Additional studies in adult and juvenile rats which describe the time-course and dose-response for brain and red blood cell (RBC) cholinesterase inhibition have been received since the carbaryl IRED. The occupational assessment for carbaryl is therefore being updated to reflect the recent cholinesterase data and resulting toxicological PoDs and FQPA safety factor.

Dose-Response Assessment

PoDs required to assess occupational exposure/risk include short- (1 to 30 days) and intermediate-term (1 to 6 months), short- and intermediate-term dermal (adult), and short- and intermediate-term inhalation (adult). Due to the rapid recovery of ChE activity, the acute exposure from carbaryl is the main duration of concern and therefore a long-term (greater than 6 months) assessment is not appropriate for carbaryl.

Dermal: The 4-week dermal toxicity rat study with NOAEL of 20 mg/kg/day established the PoD for both the short- and intermediate-term dermal scenarios in the 2003 IRED. The LOAEL of 50 mg/kg/day was based on significant decreases in RBC cholinesterase in males and females and brain cholinesterase in males. The long-term dermal (months to a lifetime) scenario relied on the chronic dog study that did not establish a NOAEL. The LOAEL of 3.1 mg/kg/day was based on plasma and brain cholinesterase inhibition in females. An additional factor of 3 was applied to account for the data deficiency

Since the 2003 IRED, a BMD analysis from the same 4-week dermal adult rat study has provided the central estimate (BMD_{10}) and lower limit ($BMDL_{10}$) of the cholinesterase data. This BMD analysis is the same methodology that is being used in the NMC cumulative risk assessment for the dermal exposure scenario. The power of the BMD analysis allows for the refinement of the true NOAEL based on dose-response. The BMD_{10} is 49 mg/kg, which corresponds with the brain and RBC cholinesterase inhibition observed at that LOAEL of 50 mg/kg. As in the NMC cumulative risk assessment, the $BMDL_{10}$ is used as the PoD. Therefore, the $BMDL_{10}$ of 30.56 mg/kg is the PoD for adults in the dermal short- and intermediate-term scenarios. The 10x intraspecies and 10x interspecies factors are both applicable and an MOE of 100 defines HEDs level of concern. The FQPA factor is not applicable to the occupational scenarios.

The long-term dermal exposure duration is not appropriate for carbaryl since peak inhibition occurs rapidly with recovery occurring within hours. The daily exposure to carbaryl is therefore the main duration of concern.

An *in vitro* dermal absorption study was also evaluated. The study showed that carbaryl was slowly absorbed through rat and human skin *in vitro* and that rat skin was about 2.8 times more permeable than the human skin at the low and mid dose. Therefore, the dermal PoD was adjusted by 2.8X to account for the differences between human and rat skin

Inhalation: For the inhalation scenarios in the 2003 RED, the developmental neurotoxicity rat study was used as the PoD for the short-term while the subchronic neurotoxicity rat study was used as the PoD for the intermediate-term. The chronic dog study was relied on for the PoD of the long-term inhalation scenario.

Inhalation studies are not available for carbaryl. Therefore, the $BMDL_{10}$ from the PND11 brain data defines the PoD for both the short- and intermediate-term inhalation scenarios. Therefore, the brain $BMDL_{10}$ of 1.1 mg/kg/day is appropriate as the PoD. As stated previously, due to the rapid recovery of cholinesterase inhibition a long-term inhalation assessment is not appropriate for carbaryl. The 10x intraspecies and 10x interspecies factors are applicable and an MOE of 100 defines HED's level of concern. A 100% absorption factor is appropriate.

Occupational Handler Exposure/Risks

Short- and intermediate-term noncancer exposure/risk was calculated for occupational handlers for different exposure scenarios at differing levels of personal protection. Since peak inhibition of cholinesterase occurs rapidly with recovery occurring within hours, the daily exposure to carbaryl is the main duration of concern. Therefore, toxicological dose and endpoints selected for short- and intermediate-terms routes of exposure are considered to be the same. All but one scenario either meets or exceeds the level of concern (MOE $\geq$ 100) at some level of personal protection. The exposure scenario, 5c Aerial: Agricultural Uses, Granular Applications, for USDA APHIS supported Mormon grasshopper and rangeland crickets (0.5 lb ai/acre application rate) results in an MOE< 100 at all levels of personal protection and, therefore, is of concern to HED.

Cancer risks for private growers (i.e., 10 applications per year) and commercial growers (i.e., 30 applications per year) were calculated for different exposure scenarios at different levels of personal protection. All exposure scenarios assessed resulted in a risk of $\leq 1 \times 10^{-6}$ at some level of personal protection.

HED considered the AHETF open-cab tractor airblast applicator exposure study (MRID 464482-01) for the non-cancer and cancer assessments of carbaryl airblast applications. The study considered two additional clothing/personal protective equipment scenarios (wide brimmed "Sou'Wester" hat and hooded Tyvek® jacket) that are not currently available in the PHED database. Personal protective equipment worn during the study included double layer, gloves, and no respirator. In comparison to non-cancer and cancer estimates using the PHED data, some of the crops assessed resulted in improved risk (i.e., less levels of personal protection required).

Non-cancer: The citrus and nut tree crops (5 lb ai/acre application rate) resulted in a reduction of the level of personal protection required for acceptable risk (versus the PHED) data for both protective equipment scenarios. The citrus tree, FL 24C (8 lb ai/acre application rate) and stone fruit, olive (7.5 lbs ai/acre) crops resulted in a reduction of the level of personal protection required with the addition of the hooded jacket only.

Cancer: The citrus tree, CA 24C (12 lbs ai/acre), citrus tree, FL 24C (8 lbs ai/acre), and stone fruit, olive (7.5 lbs ai/acre) crops resulted in a reduction of the level of personal protection required for private growers for both protective equipment scenarios. The citrus tree, FL 24C (8 lbs ai/acre) and stone fruit, olive (7.5 lbs ai/acre) crops resulted in a reduction of the level of personal protection required for commercial growers for the hooded jacket protective equipment scenario only.

Occupational Postapplication Exposure/ Risks

All but one of the short-/intermediate-term postapplication worker risk estimates resulted in MOEs that either meet or reduce REIs established by the cabaryl IRED. The cut flower crop groupings were assessed using an exposure study conducted in Georgia and Washington. Exposure data from the Washington trial resulted in MOEs which increase previously established REIs.

Postapplication cancer risks were calculated for private growers and commercial farmworkers with the only difference being the annual frequency of exposure days. Cancer risks estimated for private growers (10 days/year) are generally in the 10^{-8} - 10^{-6} range. The highest exposures for private growers are in the 10^{-6} range. The cut flower crop group exhibited the highest exposure risk estimates taking up to 10 days (WA data) to fall below $1x10^{-6}$. Of the other crop groups, those risk that are greater than $1x10^{-6}$ take up to 6 days to fall below this mark.

Cancer risks estimated for commercial farmworkers (30 days/year) generally fall in the 10^{-7} - 10^{-6} range. The highest exposures for commercial growers are in the 10^{-5} range. Again, the cut flower group exhibited the highest exposure risk estimates taking up to 24 days (WA data) to fall below $1x10^{-6}$. Of the other crop groups, those risk that are greater than $1x10^{-6}$ take up to 12 days to fall below this mark.

1.0 Occupational Exposure/ Risk Assessment

1.1 Criteria for Conducting Exposure Assessments

An occupational and/ or residential exposure assessment is required for an active ingredient if (1) certain toxicological criteria are triggered and (2) there is a potential for exposure to handlers during use or to persons entering treated sites after application is complete. Carbaryl (1-napthyl methylcarbamate) meets both criteria. There is potential for exposure to handlers from occupational applications.

1.2 Toxicological Endpoints

A hazard summary detailing the updates required to reflect the recent cholinesterase data are summarized above in the Executive Summary and are outlined in Table 1, below.

Table 1. Summary of Toxicological Dose and Endpoints for Carbaryl for Use in Occupational Human Risk Assessment[1]

Exposure Scenario	Point of Departure (mg/kg/day)	Uncertainty/FQPA Safety Factors	RfD, PAD, LOC for Risk Assessment	Study and Toxicological Effects
Dermal Short-Term (1-30 days) Dermal Intermediate-(1-6 mos)	85.56[2]	UF_A= 10x UF_H= 10x	MOE = 100 (adult)	Rat Adult Dermal Study (45630601), Brain ChE inhibition most sensitive, BMD_{10}= 49.35 mg/kg and $BMDL_{10}$= 30.56 mg/kg
Dermal Long-Term (>6 mos)	Due to the rapid recovery of ChE activity, the acute exposure from carbaryl is the main duration of concern and therefore a long-term assessment is not appropriate for carbaryl.			
Inhalation Short-Term (1-30 days) Inhalation Intermediate-(1-6 mos)	1.1	UF_A= 10x UF_H= 10x	MOE = 100	Comparative Cholinesterase Study- (47007001/ MRID pending) BMD_{10}= 1.5mg/kg and $BMDL_{10}$= 1.1 mg/kg, based on brain ChE inhibition in post-natal day 11 (PND11) pups
Inhalation Long-Term (>6 mos)	Due to the rapid recovery of ChE activity, the acute exposure from carbaryl is the main duration of concern and therefore a long-term assessment is not appropriate for carbaryl.			
Cancer (oral, dermal, inhalation)	Classification: C Q^*_1 = 8.75 x 4^{-4} (mg/kg/day)$^{-1}$			

[1] **Explanation of Abbreviations:** UF = uncertainty factor. UF_A = extrapolation from animal to human (intraspecies). UF_H = potential variation in sensitivity among members of the human population (interspecies). FQPA SF = FQPA Safety Factor. aPAD = *population adjusted dose*. RfD = reference dose. MOE = margin of exposure. LOC = level of concern. N/A = not applicable.
[2] **Dermal Point of Departure:** 85.56 mg/kg/day = 30.56 mg/kg/day x 2.8 (differences between rat and human skin))

1.3 Incident Reports

HED evaluated reports of human carbaryl poisonings and adverse reactions associated with its use, these findings can be referenced in the carbaryl IRED.

1.4 Response to Public Comments

Since the carbaryl IRED was posted for public comment in 2004, EPA received numerous comments regarding the occupational and residential exposure assessment portions of the IRED. Those which are specific to the occupational portion, and have not been addressed in the past, are comments from USDA APHIS regarding the application of carbaryl bait formulations for suppression of Mormon cricket and rangeland grasshoppers and a comment from Bayer which addresses a new Agricultural Handlers Exposure Task Force (AHETF) open-cab tractor airblast applicator exposure study in orchards (MRID 464482-01). Several other comments received (i.e., clarifications or corrections for REI changes, application methods, or application rates for specific crops) have been addressed by the revisions captured herein.

The comments submitted by USDA APHIS (EDOCKET OPP-2003-0376-0019) include language addressing the following:

- the need for a maximum labeled treatment rate of 0.5 lb ai/A for the bait and liquid formulations to be effective for Mormon cricket and grasshopper suppression; and
- that carbaryl bait formulations are not necessarily the same as risks to granular formulations of pesticides.

In order to address USDA APHIS' concern, HED assessed all bait and liquid carbaryl aerial applications (mixer/loader and applicator) at the maximum labeled application rate (0.5 lb ai/A). HED cannot, however, account for any difference in anticipated exposure/risk from the use of a bait formulation versus a granular formulation due to the lack of available exposure data for bait formulations. To assess the potential exposure/risk from the use of the aerial bait applications, HED must use the best available data which is specific to granular formulations applied aerially.

The comment submitted by Bayer Crop Science (EDOCKET OPP-2003-0376) to the Agency which applies to the occupational assessment includes language requesting the following:

- the use of a new Agricultural Handlers Exposure Task Force (AHETF) open-cab tractor airblast applicator exposure study in orchards (MRID 464482-01).

In order to address Bayer Crop Science's concerns, HED made use of studies MRID 464482-01 to assess handler exposure/risk from aerial airblast applications. A citation and summary of this study can be found below in Section 2.1.1: Occupational Handler Exposure/Risk Estimates.

1.5 Summary of Use Pattern and Formulations

Uses, Use Categories/Sites, and Products

The insecticide carbaryl is used in agriculture to control pests on terrestrial food crops including fruit and nut trees, many types of fruit and vegetables, and grain crops. There are other uses for ornamentals and turf, including production facilities such as greenhouses, golf courses, and residential sites that can be treated by professional applicators. In agriculture, groundboom, airblast, and aerial applications are typical. Other applications can also be made using handheld equipment such as low pressure handwand sprayers, backpack sprayers, and turfguns.

A detailed summary of end-use technical and manufacturing products, with respective EPA registration number and formulation, as well as, a complete list of carbaryl occupational use sites are detailed in Section 1.5, Summary of Use Patterns and Formulations of the February 2003 risk assessment (J. Dawson, D287251). Due to the required revisions, the following data and assumptions referenced no longer apply or necessitate change for estimation of exposure/ risk:

- Wheat and pet uses (except collars) and applications performed by hand or spoon are have been cancelled;
- All direct uses on poultry and in poultry houses have also been been cancelled;
- Maximum application rates were reduced for mosquito control - from 1.0 lb ai/acre to 0.15 lb ai/acre; citrus (entire US except CA) - from 7.5 lb ai/acre to 5 lb ai/acre; California citrus - from 16 lb ai/acre to 12 lb ai/acre; Florida Special Local Need (FIFRA Sec.24c) for Diaprepes root weevil control on citrus use rate of 10 lbs ai/acre to 8 lb ai/acre; asparagus - preharvest rate from 2 lb ai/acre to 1 lb ai/acre; postharvest rate from 4 lb ai/acre to 2 lb ai/acre; and stone fruit - maximum aerial liquid application rate reduced from 5 lbs ai/acre to 3 lbs ai/acre, except for California, which has a 4 lb ai/acre rate due to unique pest pressures; and
- Aerial applications are prohibited for the following: wettable powder formulations; and granular and bait formulations applied to corn (field, pop, and sweet), grain sorghum, alfalfa, rice, and sunflowers.

2.0 Occupational Exposure/ Risks

It has been determined there is a potential for exposure in occupational scenarios from handling carbaryl products during the application process (i.e., mixer/loaders, applicators, flaggers and mixer/loader/applicators) and from entering areas previously treated with carbaryl (e.g., postapplication worker exposure). As a result, risk assessments have been completed for the occupational handler and postapplication exposure scenarios.

2.1 Occupational Handler Exposure/Risks

The Agency uses the term "handlers" to describe those individuals who are involved in the pesticide application process. The Agency believes that there are distinct tasks related to applications and that exposures can vary depending on the specifics of each task. Job requirements (e.g., the amount of chemical to be used in an application), the kinds of equipment used, and the target being treated can cause exposure levels to differ in a manner specific to each application event.

2.1.1 Occupational Handler Exposure/Risk Estimates

The occupational handler exposure and noncancer risk calculations are presented in this section. Noncancer risks were calculated using the Margin of Exposure (MOE) as described in Section 2.1.3: Handler Exposure and Noncancer Risk Estimates of the February 2003 risk assessment (J. Dawson, D287251).

Scenarios

The anticipated use patterns and current labeling indicate 22 major occupational exposure scenarios based on the types of equipment and techniques that can potentially be used to make carbaryl applications. A detailed description of the series of assumptions used to complete the occupational handler risk assessment is described in Section 2.1.2: Data and

Assumptions for Handler Exposure Scenarios of the February 2003 risk assessment (J. Dawson, D287251). As previously described, mitigation measures as required by the carbaryl IRED, have resulted in several product cancellations. The quantitative exposure/risk assessment developed for occupational handlers is based on the following scenarios:

Mixer/Loader:
(1a) Dry Flowable (DF) for Aerial/Chemigation in Agriculture;
(1b) DF for Airblast;
(1c) DF for Groundboom;
(1d) DF for LCO Applications;
(1e) DF for Aerial Wide Area Uses;
(2a) Granular for Aerial;
(2b) Granular for Broadcast Spreader;
(3a) Liquids for Aerial/Chemigation
(3b) Liquids for Airblast;
(3c) Liquids for Groundboom;
(3d) Liquids for LCO Applications;
(3e) Liquids for Aerial Wide Area Uses;
(3f) Liquids for Ground Wide Area Uses;
(4a) Wettable Powder (WP) for Airblast;
(4b) WP for Groundboom;
(4c) WP for LCO Applications;

Applicator:
(5a) Aerial/Liquid Application;
(5b) Aerial/Liquid Wide Area Application;
(5c) Aerial/Granular Application;
(6a) Airblast Application;
(6b) Wide Area Ground Fogger (Airblast as surrogate);
(7) Groundboom Application;
(8) Solid Broadcast Spreader Application;
(9) Aerosol Can Application;
(10) Trigger Sprayer (RTU) Application;
(11) High Pressure Handwand Application (Right of Way Sprayer as surrogate) (ORETF Data);

Mixer/Loader/Applicator:
(12) Turfgun Application;
(13a) WP, Low pressure handwand;
(13b) Liquid: Low Pressure Handwand;
(14) Backpack;
(15) Push-type Granular Spreader;
(16) Handheld Fogger;
(17) Powered Backpack;
(18) Granular Backpack;
(19) Tree Injection;

(20) Drenching/Dipping Seedlings for Propagation,
(21) Sprinkler Can;

Flagger:
(22a) Flagging for Liquid Sprays; and
(22b) Flagging for Granular Applications.

Data and Assumptions for Handler Exposure Scenarios

The series of assumptions and exposure factors which served as the basis for completing the occupational handler assessments are described in Section 2.1.2: Data and Assumptions for Handler Exposure Scenarios of the February 2003 risk assessment (J. Dawson, D287251). Many of the exposure values used to calculate risk assessments were taken from the Pesticide Handlers Exposure Database (PHED) as well as some included studies. Several revisions, which result in changes to previous assumptions and exposure factors, have been described below as they pertain to personal communication with the Agency or GDCI since the time of the IRED.

A change from the February 2003 risk assessment (J. Dawson, D287251) is the acreage estimate previously assumed for USDA APHIS Mormon cricket and grasshopper control program. Previous information obtained by HED indicated that aerial ultra-low volume (ULV) liquid or granular bait applications ranged from 5000 to 6000 acres per day. Per personal communication via 4/6/2007 email from Charles L. Brown of USDA APHIS to the Agency, the estimation of the total acreage for granular bait applications has been refined to 3300 acres per day. This is based upon the maximum amount of bait that could be applied in a day by a single aircraft (33,000 lbs) applied at the maximum application rate of 0.5 lb ai/A (10 lbs of product per acre). In addition, HED has refined the previous assumption for ULV liquid applications from 6000 to 3000 acres. USDA APHIS uses a reduced agent-area treatment (RAAT) method for the management of rangeland Mormon crickets and grasshoppers. Under this method, ULV liquid treatments are applied in "swaths" in order to reduce the amount of rate of pesticide applied from traditional levels. Each swath is applied alternating with an untreated swath to result in only 50% coverage of the treated rangeland area and, therefore, halving the previously assumed acreage treated.

The acreage estimate used in the February 2003 risk assessment (J. Dawson, D287251) for aerial applications of carbaryl to foresty/rangeland was assumed to be 7500 acres. Based upon personal communication with the U.S. Forestry Service (referenced in the carbaryl IRED), the acreage estimate has been reduced to 1000 acres treated per day. HED recognizes this may still be a high end estimate of acreage treated; however, this conservative assumption is necessary to be protective of human health.

Three studies were submitted to the Agency by Bayer Crop Science in response to a Generic Data Call-In (GDCI-056801-21325) requirement for occupational applicator exposure. These are as follow:

- MRID 464482-01 – "Determination of Dermal and Inhalation Exposure to Workers during Application of a Liquid Pesticide Product by Open Cab Airblast Application to Orchard Crops";
- MRID 466341-05 - "Determination of Dermal and Inhalation Exposure to Workers during Closed-System Loading and ULV Application of a Liquid Pesticide Product to Cotton"; and
- MRID 470516-01 - "Determination of Dermal and Inhalation Exposure to Workers During Loading or Application of Carbaryl Bait."

The Agricutural Handlers Exposure Task Force (AHETF) study, "Determination of Dermal and Inhalation Exposure to Workers during Application of a Liquid Pesticide Product by Open Cab Airblast Application to Orchard Crops (MRID 464482-01)" was conducted to develop data that could be used to predict exposures based on clothing/personal protective equipment scenarios that are not currently available in the Pesticide Handlers Exposure Database (PHED) and not routinely considered in Agency risk assessments for this job function. MRID 464482-01 was reviewed (D316628) and determined to be acceptable for quantitative risk assessment purposes. An updated risk analysis was completed by Jeff Dawson, "Carbaryl: Risk Analysis for Open Cab Airblast Applicators Based on MRID 464482-01 Using Two Different Types of Head Protection (D328176)," using the results of this study; however, PoDs and application rates have changed since this update and, therefore, require revision. Risk estimates for exposure/risk of carbaryl open cab airblast applications using study data (i.e., wearing wide brimmed hat and hooded jacket) were assessed and are presented in addition to risk estimates resulting from the use of PHED data (Tables 5, 8 and 9). A citation and summary of this exposure study are detailed below.

The AHETF study, "Determination of Dermal and Inhalation Exposure to Workers during Closed-System Loading and ULV Application of a Liquid Pesticide Product to Cotton (MRID 466341-05)" was conducted to determine the dermal and inhalation exposure of handlers from the closed-system loading of a liquid pesticide (malathion) in support of large volume aerial spraying, as well as the dermal and inhalation exposure of pilots spraying large acreage crops (cotton). The study was reviewed by Jack Arthur (D324585) and was determined to be acceptable for quantitative risk assessment purposes. While this study is not chemical-specific, HED determined that it is more specific to the application method (ULV liquid applications) than the exposure data used to estimate exposure/risk in the February 2003 risk assessment (J. Dawson, D287251). Therefore, exposure/risk from carbaryl aerial ULV application was estimated using study data. A citation and summary of this exposure study are detailed below.

The AHETF study, "Determination of Dermal and Inhalation Exposure to Workers During Loading or Application of Carbaryl Bait (MRID 470516-01)," was conducted to estimate dermal and inhalation exposure to carbaryl when loading and applying Sevin® 5 Bait and Eco Bran Ultra 5% bait to rangeland vegetation using open pour loading and aerial application. The study was reviewed for ethical concerns by John Carley (EPA/OPP). Through personal communication from John Carley to Christina Scheltema (EPA/OPP) on 5/15/2007, he determined that the study "has clear and convincing evidence that the conduct of the research was significantly deficient relative to standards

prevailing when it was conducted." In light of this finding, HED will not be making use of the submitted study for quantitative risk assessment purposes.

MRID 464482-01: Determination of Dermal and Inhalation Exposure to Workers during Application of a Liquid Pesticide Product by Open Cab Airblast Application to Orchard Crops. Review: J. Dawson, D316628

The objective of this study was to determine the dermal and inhalation exposure of experienced agricultural workers performing open cab airblast applications of carbaryl, formulated as Sevin® XLR Plus, to orchard crops. Sevin® XLR Plus is formulated as a suspension concentrate containing 44.15% (wt/wt) active ingredient. The field phase of the study was conducted in the fall of 2003 at commercial orchards located in typical growing regions of Georgia (peaches), Idaho (apples), and Florida (citrus). A total of 26 experienced workers participated in the study resulting in 25 completed monitoring events (one worker was monitored twice and two monitoring events were dropped). Workers wore long-sleeved shirt, long pants, shoes and socks. Workers also wore PPE specified on the product label, which included chemical resistant (CR) gloves and, for overhead applications, CR headgear. Fifteen of the monitoring events wore a CR wide brimmed hat (e.g., Sou'wester) and 10 of the monitoring events wore a CR hooded jacket. All applications were made at 2.0 or 3.0 pounds of carbaryl per acre in 100 to 400 gallons of water applied per acre. The work periods lasted approximately 5 to 8 hours, and actual spray times ranged from 197 to 339 minutes (3.3 to 5.7 hours).

Dermal exposure was estimated by measuring residues on or in inner whole-body dosimeters, inner socks, inner head patches (under the CR headgear), outer head patches (on top of the CR headgear), face/neck wipes, and hand washes. Outer dosimeter samples, except for the outer head patch, were not collected. The overall average total dermal exposure for workers without headgear, which was estimated using all dermal matrices collected, were 644 μg/lb ai handled, 613 μg/lb ai handled, and 538 μg/lb ai handled for Georgia, Idaho, and Florida, respectively. The overall average total dermal exposure for workers with headgear, which was estimated using all dermal matrices collected except for the outer head patch, were 59.0 μg/lb ai handled, 49.8 μg/lb ai handled, and 79.9 μg/lb ai handled for Georgia, Idaho, and Florida, respectively.

Inhalation exposure was monitored using an OSHA Versatile Sampler (OVS) tube containing a glass fiber filter and XAD-2 sorbent. The tube was attached to an air sampling pump calibrated to deliver an air flow rate of approximately 2 liters per minute (LPM). Inhalation exposures were calculated from the breathing-zone air concentrations determined from the amount of carbaryl found in the OVS tubes. The NAFTA recommended inhalation rate of 0.0167 m^3/min for light activities was used. The overall average inhalation exposures were 2.76 μg/lb ai handled, 1.92 μg/lb ai handled, and 2.33 μg/lb ai handled for Georgia, Idaho, and Florida, respectively.

Table 2. Open Cab Airblast Study While Wearing Wide Brimmed Hat and Hooded Jacket MRID (464482-01)		
Scenario	Unit Exposures (µg/lb ai handled) (Geometric Mean)	
	Dermal	Inhalation
Wide Brimmed "SouWester" Hat	70.31	3.08
Hooded Tyvek® Jacket	53.41	1.22

MRID 46634105: Determination of Dermal and Inhalation Exposure to Workers during Closed-System Loading and ULV Application of a Liquid Pesticide Product to Cotton. Review: J. Arthur, D324585

The purpose of the study was to determine the dermal and inhalation exposure of handlers from the closed-system loading of a liquid pesticide in support of large volume aerial spraying, as well as the dermal and inhalation exposure of pilots spraying large acreage crops (cotton) with an ULV formulation by fixed-wing aircraft.

Seven workers were monitored for dermal and inhalation exposure (total of 15 loader monitoring events) while loading a malathion ULV formulation, Fyfanon® ULV (96.5%), via a closed (lock and load) system to fill aircraft tanks. Eight experienced pesticide application pilots (total of 16 monitoring events) also were monitored for dermal and inhalation exposure during routine aerial application of Fyfanon® ULV at a rate of 0.92 lb active ingredient (ai) per acre to cotton fields in Texas, as part of the Boll Weevil Eradication Program. Samples were collected over six "typical" workdays, from October 18 - 26, 2004. Loader work periods ranged from 0.5 to 11 hours, while applicator work periods ranged from 5 to 11.5 hours. Utilizing 260-gallon totes, loaders handled between 1713 to 9603 pounds of ai. The ULV formulation was dry-coupled to affect a direct transfer of liquid from the tote to the aircraft (i.e., no mixing of water). Pilots applied between 1544 to 4851 pounds ai to cotton fields of areas ranging from 1648 to 5425 acres per day. Dermal exposures were monitored using inner whole body dosimeters, inner socks, face/neck wipes and hand washes. Inhalation exposures were monitored in their breathing zone using OSHA Versatile Sampler (OVS) tubes. Workers wore long-sleeved shirts, long pants, shoes and socks. Loaders also wore chemical resistant gloves (required by label) and hats. Pilots wore helmets.

EPA estimated dermal and inhalation unit exposure values as ug/lb ai handled. Inhalation unit exposure values were calculated assuming a breathing rate of 0.0167 m^3/minute for loaders (NAFTA light inhalation rate) and 0.0083 m^3/minute for applicators (NAFTA sedentary inhalation rate).

While there are certain issues with regard to the conduct and results of the study, none are sufficient to preclude the use of the exposure data for exposure/risk assessment purposes. It is important to note that the hand exposure data were obtained using gloved hands, and therefore, the use of these data in exposure/risk assessments must assume that workers will be wearing gloves during the mixing/loading activity.

Table 3. Malathion Closed-System Loading and ULV Application Study (MRID 46634105)		
Scenario	Unit Exposures (µg/lb ai handled) (Geometric Mean)	
	Dermal	Inhalation
Closed-System Loading	1.14	0.0075
ULV Application	1.01	0.0114

Calculation Methodology and Equations

Daily combined (dermal and inhalation) noncancer exposures/risks were calculated using standard HED methodology as described in 2.1.3: Occupational Handler Exposure and Non-Cancer Risk Estimates of the February 2003 risk assessment (J. Dawson, D287251). The level of concern (LOC) is an MOE of 100. Scenarios with an MOE less than the level of concern (i.e., an MOE < 100) indicate a risk of concern for the occupational population.

Most occupational handler exposures for carbaryl are anticipated to be short- and intermediate-term in duration because repeated exposures are likely. A few scenarios (13a, 13b, and 14) have the potential for long-term (chronic) exposure; however, toxicological dose and endpoints selected for short-, intermediate-, and long-terms routes of exposure are considered to be the same. Therefore, exposure/risk estimated for occupational handlers of carbaryl were assessed considering all durations.

Results of the occupational handler risk assessment are presented in a manner which detail the MOE and what level of personal protection at which the MOE ≥ 100. In addition, the level of personal protection at which MOEs ≥ 100 from the carbaryl IRED are presented as a tool to gauge how risk has altered due to revision of dermal and inhalation PoDs. In some instances, the exposure inputs have changed as well (i.e., application rate, acreage, and unit exposures) and, therefore, could not be identified. These are indicated as not applicable (NA) in Table 4 below.

Noncancer Risk Summary

Table 4 summarizes the results for occupational handlers of carbaryl for short- and intermediate-term exposure durations. All of the occupational handler noncancer risk calculations are included in Appendix A.

All but one scenario either meet or exceed the level of concern (MOE ≥ 100) at some level of personal protection. The exposure scenario, 5c Aerial: Agricultural Uses, Granular Applications, for USDA APHIS supported Mormon grasshopper and rangeland crickets (0.5 lb ai/acre application rate) results in an MOE <100 at all levels of personal protection and, therefore, is of concern to HED.

Table 4. Summary of Occupational Handler Noncancer Risks For All Durations

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			MOE	PPE at which MOE > 100	PPE required by IRED
Mixer/Loaders					
1a DF: Aerial/Chemigation	1-2 (corn)	1,200	1,000 – 2,000	EC	EC
	3 (stone fruit)	350	110	DL/GL/PF10	NA
	2 (veg., 24C on oysters)	350	110	SL/GL/PF5	EC
1b DF: Airblast	12 (citrus trees, CA 24C)	40	160	SL/GL/PF5	EC
	8 (citrus trees, FL 24C)		150	Baseline	EC
	7.5 (stone fruit (olives))		160	Baseline	EC
	5 (citrus and nut trees)		240	Baseline	SL/GL/PF5
	3 (pome and stone fruit)		400	Baseline	Baseline
	2 (grapes)		600	Baseline	Baseline
1c DF: Groundboom	2 (corn)	200	120	Baseline	EC
	8 (turf/golf courses)	40	150	Baseline	EC
	4 (turf/golf courses)	40	300	Baseline	Baseline
	2 (strawberries)	80	300	Baseline	Baseline
1d DF: Turfgun (LCO)	4-8 (turf)	5	1,200 – 2,400	Baseline	Baseline
1e DF: Wide Area Aerial	1 (rangeland/forestry)	1000	100	DL/GL/PF5	NA
2a Granular: Aerial Application	0.5 (APHIS grasshopper)	3,300	120	SL/GL/PF5	NA
	0.03 (APHIS grasshopper)	3,300	480	Baseline	NA
2b Granular: Broadcast Spreader	2 (corn)	200	110	Baseline	SL/GL/PF5
	2 (vegetables)	80	270	Baseline	Baseline
	9 (turf/golf courses)	40	120	Baseline	SL/GL/PF5
	6 (turf/golf courses)	40	180	Baseline	Baseline
3a Liquid: Aerial/Chemigation	1.5 (corn, max.)	1,200	100	SL/GL/PF10	MOE < 100
	4 (stone fruit, CA)	350	100	SL/GL/PF5	NA
	3 (stone fruit)	350	140	SL/GL/PF5	NA
	2 (vegetables)	350	210	SL/GL/PF5	DL/GL/PF10
3b Liquid: Airblast Application	12 (citrus trees, CA 24C)	40	110	SL/GL/NR	NA
	8 (citrus trees, FL 24C)		160	SL/GL/NR	NA
	7.5 (stone fruit (olives))		170	SL/GL/NR	SL/GL/PF5
	5 (citrus and nut trees)		260	SL/GL/NR	SL/GL/NR
	3 (pome and stone fruit)		430	SL/GL/NR	SL/GL/NR
	2 (grapes)		650	SL/GL/NR	SL/GL/NR
3c Liquid Groundboom	2 (corn)	200	130	SL/GL/NR	SL/GL/PF5
	2 (strawberries)	80	320	SL/GL/NR	SL/GL/NR
	8 (turf/golf courses)	40	160	SL/GL/NR	SL/GL/PF5
	4 (turf/golf courses)	40	320	SL/GL/NR	SL/GL/NR
3d Liquid: LCO Applications	4 (turf)	5	100	Baseline	SL/GL/NR
	8 (turf)		1,300	SL/GL/NR	
3e Liquid: Wide Area Aerial	1 (rangeland/forestry)	1,000	140	SL/GL/PF5	NA
	0.15 (mosquito adulticide)	7,500	130	SL/GL/PF5	EC
	0.016 (mosquito adulticide)	7,500	430	SL/GL/NR	SL/GL/NR
3e Liquid: Wide Area Aerial (MRID 46634105)	0.5 (APHIS ULV)	3,000	120	SL/GL/PF10	NA
	0.375 (APHIS ULV)	3,000	130	SL/GL/PF5	NA
	0.125 (APHIS ULV)	3,000	140	SL/GL/NR	NA

Table 4. Summary of Occupational Handler Noncancer Risks For All Durations

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			MOE	PPE at which MOE > 100	PPE required by IRED
3f Liquid: Wide Area Ground	0.15 (mosquito adulticide) 0.016 (mosquito adulticide)	3,000	120 1,100	SL/GL/NR SL/GL/NR	SL/GL/PF5 SL/GL/NR
4a WP: Airblast	12 (citrus trees, CA 24C) 8 (citrus trees, FL 24C) 7.5 (stone fruit (olives)) 5 (citrus and nut trees) 3 (pome and stone fruit) 2 (grapes)	40	440 660 710 1,100 110 160	EC EC EC EC DL/GL/PF10 DL/GL/PF10	NA NA EC EC EC EC
4b WP: Groundboom	2 (corn) 2 (strawberries) 4-8 (turf/golf courses)	200 80 40	530 1,300 660 - 1,300	EC	EC
4c WP: Turfgun (LCO)	4-8 (turf)	5	180 - 360	SL/GL/PF5	SL/GL/PF5
Applicators					
5a Aerial: Agricultural Uses, Liquid Sprays	1.5 (corn, max.) 4 (stone fruit, CA) 3 (stone fruit) 2 (vegetables)	1,200 350 350 350	310 400 530 800	EC	EC NA NA EC
5b Aerial: Wide Area Uses, Liquid Sprays	1 (rangeland/forestry) 0.016-0.15 (mosquito adulticide)	1,000 7,500	560 500 – 4,600	EC	NA EC
5b Aerial: Wide Area Uses, Liquid Sprays (MRID 46634105)	0.13-0.5 (APHIS grasshopper)	3,000	2,100 – 8,500	EC	NA
5c Aerial: Agricultural Uses, Granular Applications	0.5 (APHIS grasshopper) 0.03 (APHIS grasshopper)	3,300	**36** 590	MOE < 100 EC	MOE < 100 EC
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C) 8 (citrus trees, FL 24C) 7.5 (stone fruit (olives)) 5 (citrus and nut trees) 3 (pome and stone fruit) 2 (grapes)	40	480 110 100 150 160 110	EC DL/GL/PF10 DL/GL/PF5 DL/GL/PF5 SL/GL/PF5 Baseline	NA NA EC EC EC DL/HEAD/GL/PF5
6b Airblast: Wide Area Uses, Ground Fogger	0.15 (mosquito adulticide) 0.016 (mosquito adulticide)	3,000	510 180	EC Baseline	EC SL/GL/PF5
7 Groundboom	2 (corn) 2 (strawberries) 4-8 (turf/golf courses)	200 80 40	210 530 260 - 530	Baseline Baseline Baseline	Baseline Baseline Baseline
8 Solid Broadcast Spreader (Granular)	2 (corn) 2 (strawberries) 4-8 (turf/golf courses)	200 80 40	150 370 160 - 240	Baseline Baseline Baseline	Baseline Baseline Baseline
9 Aerosol Can	0.01 lb ai/can (lawn/garden)	2 cans	1,000	Baseline	Baseline

Table 4. Summary of Occupational Handler Noncancer Risks For All Durations

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			MOE	PPE at which MOE > 100	PPE required by IRED
10 Trigger Pump Spray	0.01 lb ai/can (lawn/garden)	1 can	26,000	SL/GL/NR	SL/GL/NR
11 High Pressure Handwand (ROW) (ORETF Data)	1.5 lb ai/100 gallons (fire ants)	1,000 gallons	250	Baseline	SL/GL/NR
Mixer/Loader/Applicators					
12 Turfgun (LCO)	8 (turf) 4 (turf)	5	130 260	SL/GL/NR	MOE < 100 SL/GL/PF5
13a WP: Low Pressure Handwand	2% solution (ornamentals)	40 gallons	290	SL/GL/PF5	SL/GL/PF5
13b Liquids: Low Pressure Handwand	2% solution (ornamentals)	40 gallons	2,700	SL/GL/NR	SL/GL/NR
14 Backpack Sprayer	2% solution (ornamentals)	40 gallons	1,600	SL/GL/NR	Baseline
15 Granular, Push-Type Spreader	9 (turf)	5	170	SL/GL/NR	SL/GL/PF5
16 Handheld Fogger	1 (ornamentals) 0.15 (mosquito adulticide)	No Data	No Data	No Data	No Data
17 Power Backpack	2% solution (ornamentals)	No Data	No Data	No Data	No Data
18 Granular, Backpack	9 (ornamentals)	1	6,700	DL/GL/NR	DL/GL/NR
19 Tree Injection	No Data	No Data	No Data	No Data	No Data
20 Drench/Dripping/ Forestry/Ornamentals	1.5 lb ai/100 gallons (ornamentals/seedling dip)	100	350	SL/GL/NR	SL/GL/NR
21 Sprinkler Can	2% solution (ornamentals)	10 gallons	4,400	SL/GL/NR	Baseline
Flaggers					
22a Flagger: Liquid Sprays	2 (corn) 2 (vegetables)	1,200 350	140 230	SL/GL/PF5 Baseline	EC Baseline
22b Flagger: Granulars	2 (corn) 2 (vegetables)	1,200 350	170 600	Baseline Baseline	Baseline Baseline

Baseline = Long pants, long-sleeved shirt, no gloves
SL = Single Layer clothing with or without gloves (GL or NG)
DL = Double Layer clothing (i.e., coveralls over SL) with or without gloves (GL or NG)
EC = Engineering Controls
NR = No Respirator
PF5 = Protection Factor 5 respirator
PF10 = Protection Factor 10 respirator
Current Label = SL/GL/NR
Min. Req. PPE = level of PPE where MOEs > 100, where current label is exceeded or no adequate PPE is found, results are bolded. MOEs which never exceed 100 are for highest feasible type of mitigation (e.g., engineering control in most cases).
DF = Dry Flowable
WP = Wettable Powder

Noncancer Risk Summary of Aerial Airblast Applications (MRID 464482-01)

As described previously, Bayer Crop Science requested that HED consider a new AHETF open-cab tractor airblast applicator exposure study (MRID 464482-01) for the assessment of carbaryl airblast applications. The study considered two additional clothing/personal protective equipment scenarios (wide brimmed "Sou'Wester" hat and hooded Tyvek® jacket) that are not currently available in the PHED database. Table 5 summarizes the noncancer risk estimate results of the aerial airblast applicator exposure scenario using PHED data, as well as, risk estimates resulting from the additional equipment. Personal protective equipment worn during the study included double layer, gloves, and no respirator. In comparison to estimates using the PHED data, some of the crops assessed resulted in improved risk (i.e., less levels of personal protection required). MOEs corresponding to these crops are bolded.

The citrus and nut tree crops (5 lb ai/acre application rate) resulted in a reduction of the level of personal protection required for acceptable risk for both protective equipment scenarios. The citrus trees, FL 24C (8 lb ai/acre application rate) and stone fruit, olive (7.5 lbs ai/acre) crops resulted in a reduction of the level of personal protection required with the addition of the hooded jacket only. The noncancer risk calculations for airblast application using PHED data and MRID 464482-01 results are included in Appendix B.

Table 5. Summary Of Noncancer Risks For Carbaryl Airblast Applicators Based On PHED and MRID 464482-01

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day)	Risk Summary		
			MOEs (MRID 464482-01)	PPE at which MOE > 100 using PHED	PPE required by IRED
Open Cab Airblast (Double Layer, Gloves, No Respirator, Wide Brimmed "SouWester" Hat)					
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C)	40	40	EC	EC
	8 (citrus trees, FL 24C)		60	DL/GL/PF10	EC
	7.5 (stone fruit (olives))		64	DL/GL/PF5	EC
	5 (citrus and nut trees)		**97**	DL/GL/PF5	EC
	3 (pome and stone fruit)		160	SL/GL/PF5	EC
	2 (grapes)		240	Baseline	DL/HEAD/GL/PF5
Open Cab Airblast (Double Layer, Gloves, No Respirator, Hooded Tyvek® Jacket)					
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C)	40	84	EC	EC
	8 (citrus trees, FL 24C)		**130**	DL/GL/PF10	EC
	7.5 (stone fruit (olives))		**130**	DL/GL/PF5	EC
	5 (citrus and nut trees)		**200**	DL/GL/PF5	EC
	3 (pome and stone fruit)		340	SL/GL/PF5	EC
	2 (grapes)		500	Baseline	DL/HEAD/GL/PF5

2.2.3 Occupational Handler Cancer Risk Estimates

Occupational handler cancer exposure and risk calculations and results are presented in this section. Cancer risks were calculated using a linear low-dose extrapolation approach in which a LifetimeAverage Daily Dose (LADD) is first calculated and then compared with a Q_1* that has been calculated for carbaryl based on dose response data in the appropriate toxicology study (Q_1* = 8.75 x 10^{-4} (mg/kg/day)$^{-1}$). Absorbed average daily dose (ADD) levels were used as the basis for calculating the LADD values. Section 2.1.3 2.1.3: Occupational Handler Exposure and Non-Cancer Risk Estimates of the February 2003 risk assessment (J. Dawson, D287251) describes in greater detail how the ADD values were first calculated for the noncancer MOE calculations. These values also serve as the basis for the cancer risk estimates. Dermal and inhalation ADD values were first added together to obtain combined ADD values. LADD values were then calculated and compared to the Q_1* to obtain cancer risk estimates. The complete formula for the calculation of cancer risk is described in Section 2.1.4: Occupational Handler Exposure and Risk Estimates for Cancer of the February 2003 risk assessment (J. Dawson, D287251).

In order to calculate cancer risk, ADD values are amortized over the lifetime of occupational handlers resulting in LADD values. Product labels limit use to every 7 to 10 days or a seasonal "lb ai per acre" limit. Also, according to available use/usage data, on average, carbaryl is applied more than once per year for most crops. Based on this information and due to the number and variety of target insects and crops registered for carbaryl applications, the Agency considered two distinct populations in the cancer risk assessment including private growers at 10 use events per year and commercial farm workers that would have a more frequent use pattern of 30 days per year. Finally, a 35 year career and a 70 year lifespan were used to complete the calculations.

Cancer risk estimates are presented in a manner which detail the estimate and what level of personal protection at which it is ≤ 1x10-6. In addition, the level of personal protection at which cancer risk estimates are ≤ 1x10^{-6} from the carbaryl IRED are presented as well. Since the Q_1* was not altered since the IRED, many of the reassessed exposure scenarios are the same; however, those scenarios which have changes in application rate, acreage, or unit exposure required revision. These scenarios are indicated in Table 6 (below) as not applicable (NA) for Min. Req. PPE by IRED, and have been revised for Risk and Min. Req. PPE.

Cancer Risk Summary

Tables 6 and 7 summarize the cancer results for private growers and commercial farmworkers handling carbaryl for all durations of exposure, respectively. All of the carbaryl private grower and commercial applicator cancer risk calculations are included in Appendix A.

Cancer risks for private growers (i.e., 10 applications per year) and commercial growers (i.e., 30 applications per year) were calculated for different exposure scenarios at

different levels of personal protection. All exposure scenarios assessed resulted in a risk of $\leq 1x10^{-6}$ at some level of personal protection.

Table 6. Summary of Occupational Handler Cancer Risks for Private Growers

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			Private Growers		
			Risk	Min. Req. PPE	Min. Req. PPE by IRED
Mixer/Loaders					
1a DF: Aerial/Chemigation	1-2 (corn) 3 (stone fruit) 2 (veg., 24C on oysters)	1,200 350 350	4 to $7x10^{-8}$ $3x10^{-8}$ $1x10^{-6}$	EC EC SL/GL/PF10	EC NA SL/GL/PF10
1b DF: Airblast	12 (citrus trees, CA 24C) 8 (citrus trees, FL 24C) 7.5 (stone fruit (olives)) 5 (citrus and nut trees) 3 (pome and stone fruit) 2 (grapes)	40	$8x10^{-7}$ $5x10^{-7}$ $5x10^{-7}$ $3x10^{-7}$ $2x10^{-7}$ $1x10^{-7}$	Baseline	NA NA Baseline Baseline Baseline Baseline
1c DF: Groundboom	2 (corn) 4-8 (turf/golf courses) 2 (strawberries)	200 40 80	$6x10^{-7}$ 3 to $5x10^{-7}$ $3x10^{-7}$	Baseline	Baseline
1d DF: LCO Applications	4-8 (turf)	5	3 to $6x10^{-8}$	Baseline	Baseline
1e DF: Wide Area Aerial	1 (rangeland/forestry)	1,000	$1x10^{-6}$	DL/GL/PF5	NA
2a Granular: Aerial Application	0.5 (APHIS grasshopper) 0.03 (APHIS grasshopper)	3,300 3,300	$7x10^{-7}$ $4x10^{-8}$	Baseline	NA NA
2b Granular: Solid Broadcast Spreader	2 (corn) 2 (vegetables) 6-9 (turf/golf courses)	200 80 40	$2x10^{-7}$ $8x10^{-8}$ 1 to $2x10^{-7}$	Baseline	Baseline
3a Liquid: Aerial/Chemigation	1.5 (corn, max.) 4 (stone fruit, CA) 3 (stone fruit) 2 (vegetables)	1,200 350 350 350	$1x10^{-6}$ $1x10^{-6}$ $7x10^{-7}$ $5x10^{-7}$	SL/GL/PF5 SL/GL/NR SL/GL/NR SL/GL/NR	NA NA NA SL/GL/NR
3b Liquid: Airblast Application	12 (citrus trees, CA 24C) 8 (citrus trees, FL 24C) 7.5 (stone fruit (olives)) 5 (citrus and nut trees) 3 (pome and stone fruit) 2 (grapes)	40	$3x10^{-7}$ $2x10^{-7}$ $2x10^{-7}$ $1x10^{-7}$ $9x10^{-8}$ $6x10^{-8}$	SL/GL/NR SL/GL/NR SL/GL/NR SL/GL/NR SL/GL/NR SL/GL/NR	NA NA SL/GL/NR SL/GL/NR SL/GL/NR SL/GL/NR
3c Liquid: Groundboom	2 (corn) 2 (strawberries) 4-8 (turf/golf courses)	200 80 40	$3x10^{-7}$ $1x10^{-7}$ 1 to $2x10^{-7}$	SL/GL/NR	SL/GL/NR
3d Liquid: LCO Applications	4-8 (turf)	5	1 to $3x10^{-8}$	SL/GL/NR	SL/GL/NR
3e Liquid: Wide Area Aerial	2 (rangeland/forestry) 0.15 (mosquito adulticide) 0.016 (mosquito adulticide)	1,000 7,500 7,500	$8x10^{-7}$ $8x10^{-7}$ $9x10^{-7}$	SL/GL/NR SL/GL/NR SL/GL/NR	NA SL/GL/NR SL/GL/NR

Table 6. Summary of Occupational Handler Cancer Risks for Private Growers

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			Private Growers		
			Risk	Min. Req. PPE	Min. Req. PPE by IRED
3e Liquid: Wide Area Aerial (MRID 46634105)	0.5 (APHIS ULV) 0.125-0.375 (APHIS ULV)	3,000	$8x10^{-7}$ 3 to $8x10^{-7}$	SL/GL/PF5 SL/GL/NR SL/GL/NR	NA
3f Liquid: Wide Area Ground	0.15 (mosquito adulticide) 0.016 (mosquito adulticide)	3,000	$4x10^{-7}$ $3x10^{-8}$	SL/GL/NR	SL/GL/NR
4a WP: Airblast	12 (citrus trees, CA 24C) 8 (citrus trees, FL 24C) 7.5 (stone fruit (olives)) 5 (citrus and nut trees) 3 (pome and stone fruit) 2 (grapes) 1.1 (stone fruit average)	40	$1x10^{-7}$ $8x10^{-8}$ $8x10^{-8}$ $1x10^{-6}$ $6x10^{-7}$ $9x10^{-7}$ $5x10^{-7}$	EC EC EC SL/GL/PF5 SL/GL/PF5 SL/GL/NR SL/GL/NR	NA NA EC SL/GL/PF5 SL/GL/PF5 SL/GL/NR SL/GL/NR
4b WP: Groundboom	2 (corn) 2 (strawberries) 8 (turf/golf courses) 4 (turf/golf courses)	200 80 40 40	$1x10^{-7}$ $8x10^{-7}$ $8x10^{-8}$ $8x10^{-7}$	EC SL/GL/PF5 EC SL/GL/PF5	EC SL/GL/PF5 EC SL/GL/PF5
4c WP: Turfgun (LCO)	4-8 (turf)	5	2 to $4x10^{-7}$	SL/GL/NR	SL/GL/NR
Applicators					
5a Aerial: Agricultural Uses, Liquid Sprays	1.5 (corn, max.) 4 (stone fruit, CA) 3 (stone fruit) 2 (vegetables)	1,200 350 350 350	$2x10^{-7}$ $2x10^{-7}$ $1x10^{-7}$ $9x10^{-8}$	EC	NA NA NA EC
5b Aerial: Wide Area Uses, Liquid Sprays	2 (rangeland/forestry) 0.15 (mosquito adulticide) 0.016 (mosquito adulticide)	1,000 7,500 7,500	$3x10^{-7}$ $2x10^{-7}$ $2x10^{-8}$	EC	NA NA EC
5b Aerial: Wide Area Uses, Liquid Sprays (MRID 46634105)	0.13-0.5 (APHIS grasshopper)	3,000	1 to $5x10^{-8}$	EC	NA
5c Aerial: Agricultural Uses, Granular Applications	0.5 (APHIS grasshopper) 0.03 (APHIS grasshopper)	3,300	$4x10^{-7}$ $3x10^{-8}$	EC	NA
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C) 8 (citrus trees, FL 24C) 7.5 (stone fruit (olives)) 5 (citrus and nut trees) 3 (pome and stone fruit) 2 (grapes)	40	$2x10^{-7}$ $1x10^{-6}$ $9x10^{-7}$ $7x10^{-7}$ $1x10^{-6}$ $7x10^{-7}$	EC DL/GL/PF5 DL/GL/PF5 DL/GL/NR Baseline Baseline	NA NA DLHD/GL/PF5 DLHD/GL/NR Baseline Baseline
6b Airblast: Wide Area Uses, Ground Fogger	0.15 (mosquito adulticide) 0.016 (mosquito adulticide)	3,000	$3x10^{-7}$ $4x10^{-7}$	EC Baseline	EC Baseline
7 Groundboom	2 (corn) 2 (strawberries) 4-8 (turf/golf courses)	200 80 40	$2x10^{-7}$ $7x10^{-8}$ 2 to $7x10^{-8}$	Baseline	Baseline Baseline Baseline

Table 6. Summary of Occupational Handler Cancer Risks for Private Growers

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			Private Growers		
			Risk	Min. Req. PPE	Min. Req. PPE by IRED
8 Solid Broadcast Spreader (Granular)	2 (corn) 2 (strawberries) 4-8 (turf/golf courses)	200 80 40	$2x10^{-7}$ $7x10^{-8}$ 1 to $2x10^{-7}$	Baseline	Baseline Baseline Baseline
9 Aerosol Can	0.01 lb ai/can (lawn/garden)	2 cans	$9x10^{-8}$	Baseline	Baseline
10 Trigger Pump Spray	0.01 lb ai/can (lawn/garden)	1 can	$3x10^{-9}$	SL/GL/NR	SL/GL/NR
11 High Pressure Handwand (ROW) (ORETF Data)	1.5 lb ai/100 gallons (fire ants)	1,000 gallons	$4x10^{-7}$	Baseline	Baseline
Mixer/Loader/Applicators					
12 Turfgun (LCO)	4-8 (turf)	5	3 to $6x10^{-7}$	SL/GL/NR	SL/GL/NR
13a WP: Low Pressure Handwand	2% solution (ornamentals)	40 gallons	$3x10^{-7}$	SL/GL/NR	SL/GL/NR
13b Liquids, Low Pressure Handwand	2% solution (ornamentals)	40 gallons	$1x10^{-8}$	SL/GL/NR	SL/GL/NR
14 Backpack Sprayer	2% solution (ornamentals)	40 gallons	$5x10^{-8}$	Baseline	Baseline
15 Granular, Push-Type Spreader	9 (turf)	5	$4x10^{-7}$	Baseline	Baseline
16 Handheld Fogger	1 (ornamentals) 0.15 (mosquito adulticide)	No Data	No Data	No Data	No Data
17 Power Backpack	2% solution (ornamentals)	No Data	No Data	No Data	No Data
18 Granular, Backpack	9 (ornamentals)	1	$2x10^{-5}$	DL/GL/NR	DL/GL/NR
19 Tree Injection	No Data	No Data	No Data	No Data	No Data
20 Drench/Dripping/ Forestry/Ornamentals	1.5 lb ai/100 gallons (ornamentals/seedling dip)	100	$1x10^{-7}$	SL/GL/NR	SL/GL/NR
21 Sprinkler Can	2% solution (ornamentals)	10 gallons	$1x10^{-7}$	Baseline	Baseline
Flaggers					
22a Flagger: Liquid Sprays	2 (corn) 2 (vegetables)	1,200 350	$7x10^{-7}$ $2x10^{-7}$	Baseline	Baseline
22b Flagger: Granulars	2 (corn) 2 (vegetables)	1,200 350	$2x10^{-7}$ $6x10^{-8}$	Baseline	Baseline

Baseline = Long pants, long-sleeved shirt, no gloves
SL = Single Layer clothing with or without gloves (GL or NG)
DL = Double Layer clothing (i.e., coveralls over SL) with or without gloves (GL or NG)
EC = Engineering Controls
NR = No Respirator
PF5 = Protection Factor 5 respirator
PF10 = Protection Factor 10 respirator
Current Label = SL/GL/NR
Min. Req. PPE = level of PPE where MOEs > 100, where current label is exceeded or no adequate PPE is found, results are

Table 6. Summary of Occupational Handler Cancer Risks for Private Growers

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			Private Growers		
			Risk	Min. Req. PPE	Min. Req. PPE by IRED

bolded. MOEs which never exceed 100 are for highest feasible type of mitigation (e.g., *engineering control* in most cases).
DF = Dry Flowable
WP = Wettable Powder

Table 7. Summary of Occupational Handler Cancer Risks for Commercial Farmworkers

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			Commercial Farmworkers		
			Risk	Min. Req. PPE	Min. Req. PPE by IRED
Mixer/Loaders					
1a DF: Aerial/Chemigation	1-2 (corn)	1,200	1 to $2x10^{-7}$	EC	EC
	3 (stone fruit)	350	$1x10^{-7}$		NA
	2 (veg., 24C on oysters)	350	$7x10^{-8}$		EC
1b DF: Airblast	12 (citrus trees, CA 24C)	40	$5x10^{-8}$	EC	NA
	8 (citrus trees, FL 24C)		$1x10^{-6}$	DL/GL/PF5	NA
	7.5 (stone fruit (olives))		$1x10^{-6}$	DL/GL/NR	DL/GL/PF10
	5 (citrus and nut trees)		$9x10^{-7}$	Baseline	DL/GL/PF10
	3 (pome and stone fruit)		$6x10^{-7}$	Baseline	DL/GL/PF10
	2 (grapes)		$4x10^{-7}$	Baseline	DL/GL/PF10
1c DF: Groundboom	2 (corn)	200	$1x10^{-6}$	DL/GL/NR	DL/GL/NR
	8 (turf/golf courses)	40	$1x10^{-6}$	DL/GL/PF5	DL/GL/PF5
	4 (turf/golf courses)	40	$8x10^{-7}$	Baseline	Baseline
	2 (strawberries)	80	$8x10^{-7}$	Baseline	Baseline
1d DF: LCO Applications	8 (LCO on turf)	5	$2x10^{-7}$	Baseline	Baseline
	4 (LCO on turf)		$9x10^{-8}$		
1e DF: Wide Area Aerial	1 (rangeland/forestry)	1,000	$9x10^{-8}$	EC	NA
2a Granular: Aerial Application	0.5 (APHIS grasshopper)	3,300	$9x10^{-7}$	SL/GL/PF5	NA
	0.03 (APHIS grasshopper)	3,300	$1x10^{-7}$	Baseline	NA
2b Granular: Solid Broadcast Spreader	2 (corn)	200	$6x10^{-7}$	Baseline	Baseline
	2 (vegetables)	80	$2x10^{-7}$		
	6 (turf/golf courses)	40	$5x10^{-7}$		
	9 (turf/golf courses)	40	$3x10^{-7}$		
3a Liquid: Aerial/Chemigation	1.5 (corn, max.)	1,200	$1x10^{-6}$	EC	NA
	4 (stone fruit, CA)	350	$9x10^{-7}$	EC	NA
	3 (stone fruit)	350	$6x10^{-7}$	EC	NA
	2 (vegetables)	350	$9x10^{-7}$	DL/GL/PF5	DL/GL/PF5
3b Liquid: Airblast Application	12 (citrus trees, CA 24C)	40	$1x10^{-6}$	SL/GL/NR	NA
	8 (citrus trees, FL 24C)		$7x10^{-7}$	SL/GL/NR	NA

Table 7. Summary of Occupational Handler Cancer Risks for Commercial Farmworkers

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary: Commercial Farmworkers		
			Risk	Min. Req. PPE	Min. Req. PPE by IRED
	7.5 (stone fruit (olives))		$6x10^{-7}$	SL/GL/NR	SL/GL/NR
	5 (citrus and nut trees)		$4x10^{-7}$	SL/GL/NR	SL/GL/NR
	3 (pome and stone fruit)		$3x10^{-7}$	SL/GL/NR	SL/GL/NR
	2 (grapes)		$2x10^{-7}$	SL/GL/NR	SL/GL/NR
3c Liquid: Groundboom	2 (corn)	200	$9x10^{-7}$	SL/GL/NR	SL/GL/NR
	2 (strawberries)	80	$3x10^{-7}$	SL/GL/NR	SL/GL/NR
	4-8 (turf/golf courses)	40	3 to $7x10^{-7}$	SL/GL/NR	SL/GL/NR
3d Liquid: LCO Applications	4-8 (turf)	5	4 to $9x10^{-8}$	SL/GL/NR	SL/GL/NR
3e Liquid: Wide Area Aerial	1 (rangeland/forestry)	1,000	$6x10^{-7}$	EC	NA
	0.15 (mosquito adulticide)	7,500	$7x10^{-7}$	EC	EC
	0.016 (mosquito adulticide)	7,500	$3x10^{-7}$	SL/GL/NR	SL/GL/NR
3e Liquid: Wide Area Aerial (MRID 46634105)	0.5 (APHIS ULV)	3,000	$2x10^{-7}$	EC	NA
	0.375 (APHIS ULV)		$2x10^{-7}$	EC	NA
	0.125 (APHIS ULV)		$8x10^{-7}$	SL/GL/NR	NA
3f Liquid: Wide Area Ground	0.15 (mosquito adulticide)	3,000	$1x10^{-6}$	SL/GL/NR	SL/GL/NR
	0.016 (mosquito adulticide)		$1x10^{-7}$		
4a WP: Airblast	12 (citrus trees, CA 24C)	40	$4x10^{-7}$	EC	NA
	8 (citrus trees, FL 24C)		$2x10^{-7}$	EC	NA
	7.5 (stone fruit (olives))		$2x10^{-7}$	EC	EC
	5 (citrus and nut trees)		$2x10^{-7}$	EC	EC
	3 (pome and stone fruit)		$9x10^{-8}$	EC	EC
	2 (grapes)		$1x10^{-6}$	DL/GL/PF5	DL/GL/PF5
4b WP: Groundboom	2 (corn)	200	$3x10^{-7}$	EC	EC
	2 (strawberries)	80	$1x10^{-7}$	EC	EC
	8 (turf/golf courses)	40	$2x10^{-7}$	EC	EC
	4 (turf/golf courses)	40	$1x10^{-7}$	EC	EC
4c WP: Turfgun (LCO)	8 (turf)	5	$6x10^{-7}$	SL/GL/PF5	SL/GL/PF5
	4 (turf)		$7x10^{-7}$	SL/GL/NR	SL/GL/NR
Applicators					
5a Aerial: Agricultural Uses, Liquid Sprays	1.5 (corn, max.)	1,200	$7x10^{-7}$	EC	EC
	4 (stone fruit, CA)	350	$6x10^{-7}$	EC	NA
	3 (stone fruit)	350	$4x10^{-7}$	EC	NA
	2 (vegetables)	350	$3x10^{-7}$	EC	EC
5b Aerial: Wide Area Uses, Liquid Sprays	1 (rangeland/forestry)	1,000	$4x10^{-7}$	EC	NA
	0.15 (mosquito adulticide)	7,500	$4x10^{-7}$	EC	EC
	0.016 (mosquito adulticide)	7,500	$5x10^{-8}$	EC	NA
5b Aerial: Wide Area Uses, Liquid Sprays (MRID 46634105)	0.375-0.5 (APHIS grasshopper)	3,000	1 to $1x10^{-7}$	EC	NA
	0.125 (APHIS grasshopper)		$3x10^{-8}$	EC	
5c Aerial: Agricultural Uses, Granular Applications	0.5 (APHIS grasshopper)	3,300	$1x10^{-7}$	EC	NA
	0.03 (APHIS grasshopper)		$8x10^{-8}$	EC	

Table 7. Summary of Occupational Handler Cancer Risks for Commercial Farmworkers

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			Commercial Farmworkers		
			Risk	Min. Req. PPE	Min. Req. PPE by IRED
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C) 8 (citrus trees, FL 24C) 7.5 (stone fruit (olives)) 5 (citrus and nut trees) 3 (pome and stone fruit) 2 (grapes)	40	$6x10^{-7}$ $4x10^{-7}$ $4x10^{-7}$ $3x10^{-7}$ $1x10^{-6}$ $9x10^{-7}$	EC EC EC EC DLHD/GL/PF10 DL/HD/NR	NA NA EC EC DLHD/GL/PF10 DL/HD/NR
6b Airblast: Wide Area Uses, Ground Fogger	0.15 (mosquito adulticide) 0.016 (mosquito adulticide)	3,000	$6x10^{-7}$ $9x10^{-7}$	EC SL/GL/NR	NA SL/GL/NR
7 Groundboom	2 (corn) 2 (strawberries) 4-8 (turf/golf courses)	200 80 40	$5x10^{-7}$ $2x10^{-7}$ 2 to $4x10^{-7}$	Baseline Baseline Baseline	Baseline Baseline Baseline
8 Solid Broadcast Spreader (Granular)	2 (corn) 2 (strawberries) 4-8 (turf/golf courses)	200 80 40	$5x10^{-7}$ $2x10^{-7}$ 3 to $5x10^{-7}$	Baseline Baseline Baseline	Baseline Baseline Baseline
9 Aerosol Can	0.01 lb ai/can (lawn/garden)	2 cans	$2x10^{-7}$	Baseline	Baseline
10 Trigger Pump Spray	0.01 lb ai/can (lawn/garden)	1 can	$9x10^{-9}$	SL/GL/NR	SL/GL/NR
11 High Pressure Handwand (ROW) (ORETF Data)	1.5 lb ai/100 gallons (fire ants)	1,000 gallons	$4x10^{-7}$	SL/GL/NR	SL/GL/NR
Mixer/Loader/Applicators					
12 Turfgun (LCO)	8 (turf) 4 (turf)	5	$1x10^{-6}$ $9x10^{-7}$	DL/GL/PF5 SL/GL/NR	DL/GL/PF5 SL/GL/NR
13a WP: Low Pressure Handwand	2% solution (ornamentals)	40 gallons	$9x10^{-7}$	SL/GL/NR	SL/GL/NR
13b Liquids: Low Pressure Handwand	2% solution (ornamentals)	40 gallons	$4x10^{-8}$	SL/GL/NR	SL/GL/NR
14 Backpack Sprayer	2% solution (ornamentals)	40 gallons	$1x10^{-7}$	Baseline	Baseline
15 Granular, Push-Type Spreader	9 (turf)	5	$8x10^{-7}$	SL/GL/NR	SL/GL/NR
16 Handheld Fogger	1 (ornamentals) 0.15 (mosquito adulticide)	No Data	No Data	No Data	No Data
17 Power Backpack	2% solution (ornamentals)	No Data	No Data	No Data	No Data
18 Granular, Backpack	9 (ornamentals)	1	$6x10^{-8}$	DL/GL/NR	DL/GL/NR
19 Tree Injection	No Data	No Data	No Data	No Data	No Data
20 Drench/Dripping/ Forestry/Ornamentals	1.5 lb ai/100 gallons (ornamentals/seedling dip)	100	$3x10^{-7}$	SL/GL/NR	SL/GL/NR
21 Sprinkler Can	2% solution (ornamentals)	10 gallons	$4x10^{-7}$	Baseline	Baseline
Flaggers					

Table 7. Summary of Occupational Handler Cancer Risks for Commercial Farmworkers

Scenario	Rate (lb ai/acre) [unless noted]	Area Treated (acres/ day) [unless noted]	Risk Summary		
			Commercial Farmworkers		
			Risk	Min. Req. PPE	Min. Req. PPE by IRED
22a Flagger: Liquid Sprays	2 (corn) 2 (vegetables)	1,200 350	$4x10^{-7}$ $6x10^{-7}$	EC Baseline	EC Baseline
22b Flagger: Granulars	2 (corn) 2 (vegetables)	1,200 350	$6x10^{-7}$ $2x10^{-7}$	Baseline Baseline	Baseline Baseline

Baseline = Long pants, long-sleeved shirt, no gloves
SL = Single Layer clothing with or without gloves (GL or NG)
DL = Double Layer clothing (i.e., coveralls over SL) with or without gloves (GL or NG)
EC = Engineering Controls
NR = No Respirator
PF5 = Protection Factor 5 respirator
PF10 = Protection Factor 10 respirator
Current Label = SL/GL/NR
Min. Req. PPE = level of PPE where MOEs > 100, where current label is exceeded or no adequate PPE is found, results are bolded. MOEs which never exceed 100 are for highest feasible type of mitigation (e.g., engineering control in most cases).
DF = Dry Flowable
WP = Wettable Powder

Cancer Risk Summary of Aerial Airblast Applications (MRID 464482-01)

As described previously, Bayer Crop Science requested that HED consider a new AHETF open-cab tractor airblast applicator exposure study (MRID 464482-01) for the assessment of carbaryl airblast applications. The study considered two additional clothing/personal protective equipment scenarios (wide brimmed "Sou'Wester" hat and hooded Tyvek® jacket) that are not currently available in the PHED database. The cancer risk calculations for airblast application using PHED data and MRID 464482-01 results are included in Appendix B.

Tables 8 and 9 summarize cancer risk estimate results of the aerial airblast applicator exposure scenario using PHED data, as well as, cancer risk estimates resulting from the additional equipment for private and commercial growers, respectively. Personal protective equipment worn during the study included double layer, gloves, and no respirator. In comparison to estimates using PHED data, some of the crops assessed resulted in improved risk (i.e., less levels of personal protection required). MOEs corresponding to these crops are bolded. The citrus tree, CA 24C (12 lbs ai/acre), citrus tree, FL 24C (8 lbs ai/acre), and stone fruit, olive (7.5 lbs ai/acre) crops resulted in a reduction of the level of personal protection required for private growers for both protective equipment scenarios. The citrus tree, FL 24C (8 lbs ai/acre) and stone fruit, olive (7.5 lbs ai/acre) crops resulted in a reduction of the level of personal protection required for commercial growers for the hooded jacket protective equipment scenario only.

Table 8. Summary Of Cancer Risks For Private Grower Carbaryl Airblast Applicators Based On PHED and MRID 464482-01

Scenario	Rate (lb ai/acre) [unless noted]	Risk Summary		
		Private Growers		
		Risk (MRID 464482-01)	Min. Req. PPE using PHED	Min. Req. PPE by IRED
Open Cab Airblast (Double Layer, Gloves, No Respirator, Wide Brimmed "SouWester" Hat)				
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C)	**$1x10^{-6}$**	EC	NA
	8 (citrus trees, FL 24C)	**$7x10^{-7}$**	DL/GL/PF5	NA
	7.5 (stone fruit (olives))	**$6x10^{-7}$**	DLHD/GL/PF5	DLHD/GL/PF5
	5 (citrus and nut trees)	$4x10^{-7}$	DLHD/GL/NR	DLHD/GL/NR
	3 (pome and stone fruit)	$2x10^{-7}$	Baseline	Baseline
	2 (grapes)	$2x10^{-7}$	Baseline	Baseline
Open Cab Airblast (Double Layer, Gloves, No Respirator, Hooded Tyvek® Jacket)				
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C)	**$7x10^{-7}$**	EC	NA
	8 (citrus trees, FL 24C)	**$4x10^{-7}$**	DL/GL/PF5	NA
	7.5 (stone fruit (olives))	**$4x10^{-7}$**	DLHD/GL/PF5	DLHD/GL/PF5
	5 (citrus and nut trees)	$3x10^{-7}$	DLHD/GL/NR	DLHD/GL/NR
	3 (pome and stone fruit)	$2x10^{-7}$	Baseline	Baseline
	2 (grapes)	$1x10^{-7}$	Baseline	Baseline

Table 9. Summary Of Cancer Risks For Commercial Applicator Carbaryl Airblast Applicators Based On PHED and MRID 464482-01

Scenario	Rate (lb ai/acre) [unless noted]	Risk Summary		
		Commercial Growers		
		Risk (MRID 464482-01)	Min. Req. PPE using PHED	Min. Req. PPE by IRED
Open Cab Airblast (Double Layer, Gloves, No Respirator, Wide Brimmed "SouWester" Hat)				
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C)	$3x10^{-6}$	EC	NA
	8 (citrus trees, FL 24C)	$2x10^{-6}$	DL/GL/PF5	NA
	7.5 (stone fruit (olives))	$2x10^{-6}$	DLHD/GL/PF5	DLHD/GL/PF5
	5 (citrus and nut trees)	$1x10^{-6}$	DLHD/GL/NR	DLHD/GL/NR
	3 (pome and stone fruit)	$7x10^{-7}$	Baseline	Baseline
	2 (grapes)	$5x10^{-7}$	Baseline	Baseline
Open Cab Airblast (Double Layer, Gloves, No Respirator, Hooded Tyvek® Jacket)				
6a Airblast: Agricultural Uses	12 (citrus trees, CA 24C)	$2x10^{-6}$	EC	NA
	8 (citrus trees, FL 24C)	**$1x10^{-6}$**	DL/GL/PF5	NA
	7.5 (stone fruit (olives))	**$1x10^{-6}$**	DLHD/GL/PF5	DLHD/GL/PF5
	5 (citrus and nut trees)	$8x10^{-7}$	DLHD/GL/NR	DLHD/GL/NR
	3 (pome and stone fruit)	$5x10^{-7}$	Baseline	Baseline
	2 (grapes)	$3x10^{-7}$	Baseline	Baseline

2.2 Occupational Postapplication Exposures and Risks

The Agency uses the term "postapplication" to describe exposures to individuals that occur as a result of working in an environment that has been previously treated with a pesticide (also referred to as reentry exposure). The Agency believes that there are distinct job functions or tasks related to the kinds of activities that occur in previously

treated areas such as harvesting vegetables in a treated field. Job requirements (e.g., the kinds of jobs to cultivate a crop), the nature of the crop or target that was treated, and the how chemical residues degrade in the environment can cause exposure levels to differ over time. Each factor has been considered in this assessment.

2.2.1 Occupational Postapplication Exposure Scenarios

Carbaryl uses are extremely varied as it can be used in agriculture, on ornamentals, and on turf. As a result, a wide array of individuals can potentially be exposed by working in areas that have been previously treated. The Agency is concerned about these kinds of exposures one could receive in the workplace.

For re-entry workers, exposure estimates are based on the types of tasks and activities that individuals are likely to be doing in areas recently treated with a pesticide. Estimates of exposure are calculated using transfer coefficients (TCs), a standard measure of contact with treated foliage or other surfaces an individual would have while doing a specific task, and chemical-specific calculations of dislodgeable foliar residue (DFR), or the amount of pesticide available on the leaf surface that can potentially be transferred to the skin of an individual in contact with the treated surface. Increasing levels of PPE is not considered a viable approach for mitigating post-application risks, so PPE is not used when calculating MOEs for re-entry workers; instead, an administrative approach is used to reduce the risks, referred to as the Restricted Entry Interval (REI). The REI is a measure of the amount of time required to pass after application of a pesticide before engaging in a task or activity in a treated field. Postapplication risk levels are generally calculated in the risk assessment process on a chemical-, crop-, and activity-specific basis. To establish REIs, the Agency considers postapplication risks on varying days after application.

The durations of exposure anticipated for re-entry workers exposed to carbaryl based upon use criteria are short- and intermediate-term. Inhalation exposures are thought to be negligible in outdoor postapplication scenarios because of the low vapor pressure and due to the infinite dilution expected outdoors. Therefore, only dermal postapplication exposures are considered in this assessment.

The concepts and steps for assessment of postapplication risk are described in more detail in Section 2.2.1: Occupational Postapplication Exposure Scenarios of the February 2003 risk assessment (J. Dawson, D287251).

2.2.2 Data and Assumptions for Occupational Postapplication Exposure Scenarios

A series of assumptions and exposure factors served as the basis for completing the occupational postapplication worker risk assessments. Each assumption and factor, as well as, TC values and five previously submitted chemical-specific residue dissipation studies used in the calculation of risk estimates are described in Section 2.2.2: Data and Assumptions for Occupational Postapplicaton Exposure Scenarios of the February 2003

risk assessment (J. Dawson, D287251). TCs were taken from the Agency's revised policy entitled *Policy 3.1 Science Advisory Council for Exposure Policy Regarding Agricultural Transfer Coefficients* (August 7, 2000).

Changes from the February 2003 risk assessment (J. Dawson, D287251) include the submission of an additional chemical-specific residue dissipation study, as well as changes in some TCs applicable to specific crop grouping/activity combinations. A citation and summary of the residue dissipation study is described in more detail below. Required TC changes are as follows:

- Cut Flowers: The risk assessment (D290975) included a comment that the Agricultural Re-Entry Task Force (ARTF) was in the process of conducting a more definitive study in the cut-flower industry which would likely be a more reliable source of information. Since that time, the study was conducted and submitted to the Agency for review. Results of the ARTF study are a TC of 5100 cm^2/hour and 2700 cm^2/hour for hand-harvesting activities;
- Evergreen Tree Fruit: The TC for pruning of evergreen tree fruit was reduced from 1500 cm^2/hour to 1000 cm^2/hour. This change was based upon an ARTF pruning study of apple and olive trees. While not specific to the Evergreen Tree Fruit crop grouping, the exposure data is scenario- and chemical-specific;
- Turf/Sod: Based upon the results of ARTF studies on sod farm harvesting and golf course maintenance, TCs for these activities have been changed. The TC for the sod farm harvesting activity has been reduced from 16500 to 6800 cm^2/hr. The existing TC for golf course maintenance is 500 cm^2/hr for mowing. This value has been used in addition to a TC of 3400 cm^2/hr from the ARTF study to assess postapplication risk from golf course maintenance activities; and
- Vine and Trellis: Based upon the results of an ARTF study which monitored blackberry harvest, the resulting TC of 1100 cm^2/hr was used to assess risks for blackberry hand harvesting in addition to existing TCs.

The residue dissipation study, "Carbaryl: Dissipation of Dislodgeable Foliar Residues from Chrysanthemums" (MRID 468928-01), was submitted by the Interregional Research Project Number 4 (IR-4) of Rutgers University in support of carbaryl use on chrysanthemums. The study was reviewed by HED (W. Britton, D332083) and was determined to be useful for quantitative risk analysis purposes. HED has determined that the results of this crop-specific dissipation study are more appropriate to address the cut flower crop grouping than a cabbage DFR study (MRID 451917-01) used in the February 2003 risk assessment (J. Dawson, D287251). In addition, TCs of 5100 cm^2/hour and 2700 cm^2/hour for hand-harvesting activities were used, as derived from a new ARTF study. While the chrysanthemum study was performed outdoors, HED has determined that the results are the best available resource for assessing cut flower postapplication risk, whether outdoors or in greenhouses. In addition, the chrysanthemum study was conducted in Georgia and Washington State. Study results from the two regions differ, with one being representative of a warmer, wetter climate (GA) and the other a cooler, and drier climate (WA). The following passage is a summary of the study and results.

MRID 468928-01: Carbaryl: Dissipation of Dislodgeable Foliar Residues from Chrysanthemums. Review: W. Britton, D332083

This study was designed to determine the dissipation of dislodgeable foliar residues (DFR) of carbaryl applied to chrysanthemums located near Moxee, Washington and Tifton, Georgia. Two foliar applications of Sevin® SL, a soluble liquid formulation containing 42% carbaryl as the active ingredient (ai), were made to chrysanthemum plants at 7-day intervals. The target rate for each application was 1 quart formulated product per acre (1.0 lbs ai/A), the maximum label use rate. Applications were made using equipment that represented or simulated application techniques used by commercial growers. At the Washington site a boom sprayer specified for broadcast application was mounted to an ATV, and at the Georgia test site, a boom sprayer was attached to a tractor and set to deliver a directed spray (i.e., two drop nozzles to spray the sides of the plant, and one overhead spray nozzle). The targeted spray volume was 50 gallons per acre (GPA). One control sample and triplicate DFR samples were collected from the untreated and treated chrysanthemum plants. DFR samples were collected one day prior to and on the day of each of the two applications and at Days 1, 2, 3, 5, 7, 10, 14, 21, 28, and 35 following the second (last) application. A total of 0.16 inches of rain fell during the Washington trial and temperature ranged from 32 - 77°F. The 35 day samples were not collected at the Washington field site because the plants had been damaged by frost. In contrast, 7.98 inches of rainfall occurred during the Georgia trial and the temperature ranged from 43 - 80 °F. The rainfall at the Georgia test site was unusually high for mid-November. Drip irrigation was applied at both test sites.

DFRs from the Georgia site did not require correction for field fortification recovery because average recoveries were greater than 90%. DFRs from the Washington site which were analyzed in 2004 (i.e., the samples from the first application day and the day before the second application) did not require correction for field fortification recovery because average recoveries were greater than 90%. However, all of the Washington site field samples collected on or after the second application had to be reanalyzed in 2006 due to an extraction and storage error. In 2004 the samples were extracted and then stored frozen for 42 days before analysis. All these samples yielded non-detectable residue levels. In 2006, the analytical lab went back to the frozen dislodging solutions, performed new extractions and immediately performed the GC analysis. These samples, which had been stored between 1,175 and 1,202 days, demonstrated detectable levels. The field fortification samples that had been stored for the same time periods were also reanalyzed in 2006 were used to correct the reanalyzed residue levels. DFRs from the Washington site were corrected and analyzed for the average low level field fortification recovery of 72.5% or high level field fortification recovery of 68.3% depending on whether the low or high level recovery value more closely approximated the sample residue level.

All of the residue values at the Washington site were above the limit of quantitation (LOQ) during the conduct of the study. The maximum mean DFR for chrysanthemum leaves occurred on Day 2 after the second application (4.34 $\mu g/cm^2$) and declined to 0.403 $\mu g/cm^2$ by Day 28 after the second application. At the Georgia site, the maximum

mean DFR occurred immediately after the first application (1.20 μg/cm^2). The highest mean DFR after the last (second) application occurred immediately after the application (0.782 μg/cm^2) and declined to 0.005 μg/cm^2 by Day 10 and Day 14. By Day 21 after the last application, the mean DFR dropped below the LOD.

The study author reported a half-life of carbaryl at the Washington site of 8.6 days (R^2=0.668) and a half-life at the Georgia site of 2.4 days (R^2=0.808). These values are all based on uncorrected residue levels. Based on corrected residue levels, estimated half-life values were 8.4 days (R^2= 0.732) for chrysanthemum leaves in Washington and 2.8 days (R^2= 0.591) for chrysanthemum leaves in Georgia. The study author also reported that the half-lives at the Georgia site may have been shorter due to warmer temperatures and more rainfall than the Washington field site. The Georgia test site experienced a heavy rainfall event (1.47 inches) 2 days after the second application. Residues levels collected after this rainfall event were very low. Also, DFRs collected from the Georgia and Washington test locations did not follow the same dissipation pattern. The trial in Washington was conducted late in the season with minimum temperatures near freezing in November with little rainfall.

Table 10. Chrysanthemum DFR Dissipation Data (MRID 468928-01)

Location	App. Rate (lb ai/acre)	App. Method	Corr. Coeff	Slope (Ln TTR vs. t)	[T_0] (μg/cm^2)	$T_{1/2}$ (days)	Day 0 (% trans.)
GA	1.02	Boom Sprayer	0.734	-2.349	0.782	2.8	6.8
WA	1.06	Boom Sprayer	0.8964	-0.0835	3.337	8.4	28.0

2.2.3 Occupational Postapplication Exposure and Noncancer Risk Estimates

The occupational postapplication exposure and non-cancer risk calculations are presented in this section. Noncancer risks were calculated using the Margin of Exposure (MOE) which is a ratio of the body burden to the toxicological endpoint of concern. Body burden values were determined by first calculating exposures by considering transferable residue levels in areas where people work (i.e., the potential sources of exposure) and the kinds of jobs or tasks required to produce agricultural commodities or to maintain other areas such as golf courses. These factors are represented by DFR or turf transferable residue (TTR) concentrations and TCs. Exposures were calculated by multiplying these factors by an 8 hour work day. Exposures are then normalized by body weight and adjusted for dermal absorption to calculate absorbed dose (i.e., body burdens). MOEs were then calculated. Postapplication risks diminish over time because carbaryl residues eventually dissipate in the environment. As a result risk values were calculated over time based on changing residue levels. Occupational postapplication risks were calculated using standard HED methodology as described in Section 2.2.3: Occupational Postapplication Exposure and Noncancer Risk Estimates of the February 2003 risk assessment (J. Dawson, D287251).

Noncancer short-/intermediate-term risks were calculated for different crop groups. Tables 11 and 12 below provide a summary of these risks for each crop/activity combination considered. For each crop group/activity combination, results from the MOE value at the current REI established by the carbaryl IRED (i.e., the Day 0 MOE), as well as, the number of days required for the MOEs to reach the Agency's uncertainty factor of 100 are presented. The level of concern for all durations of exposures is an MOE=100.

Noncancer Postapplication Summary

All but one of the short-/intermediate-term postapplication worker risk estimates resulted in MOEs that either meet or reduce REIs established by the cabaryl IRED. The cut flower crop groupings assessed using WA exposure data resulted in MOEs which increase previously established REIs.

Tables 11 summarize the results of short-/intermediate-term carbaryl noncancer postapplication worker risks, respectively. All of the noncancer postapplication risk calculations are included in Appendix C.

Table 11. Summary of Short-/Intermediate-Term Carbaryl Noncancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
Cut Flowers (GA Data – 2 lbs ai/acre)	MOE Day 0	NA	200	120	96	NA
	Days for MOE > LOC	NA	0	0	1	NA
	Days for MOE > LOC (IRED)	NA	7	9	12	NA
Cut Flowers (WA Data - 2 lbs ai/acre)	MOE Day 0	NA	48	30	23	NA
	Days for MOE > LOC	NA	9	15	18	NA
	Days for MOE > LOC (IRED)	NA	7	9	12	NA
Low Berry (2 lb ai/ acre)	MOE Day 0	NA	790	NA	210	NA
	Days for MOE > LOC	NA	0	NA	0	NA
	Days for MOE > LOC (IRED)	NA	0	NA	4	NA
Bunch/Bundle (2 lb ai/acre)	MOE Day 0	NA	1,800	140	88	NA
	Days for MOE > LOC	NA	0	0	1	NA
	Days for MOE > LOC (IRED)	NA	0	6	8	NA
Low/Med. Field/Row Crops (1.5 lb ai/acre)	MOE Day 0	NA	4,200	280	170	NA
	Days for MOE > LOC	NA	0	0	0	NA
	Days for MOE > LOC (IRED)	NA	0	3	5	NA

Table 11. Summary of Short-/Intermediate-Term Carbaryl Noncancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
[1] Tall Field/Row Crops (2 lb ai/acre)	MOE Day 0	NA	1,000	260	100	6.2
	Days for MOE > LOC	NA	0	0	0	21
	Days for MOE > LOC (IRED)	NA	0	4	11	+30
[2] Tall Field/Row Crops (1.5 lb ai/acre – sunflowers only)	MOE Day 0	NA	1,400	350	NA	NA
	Days for MOE > LOC	NA	0	0	NA	NA
	Days for MOE > LOC (IRED)	NA	0	2	NA	NA
Sugarcane (1.5 lb ai/acre)	MOE Day 0	NA	NA	230	120	NA
	Days for MOE > LOC	NA	NA	0	0	NA
	Days for MOE > LOC (IRED)	NA	NA	3	7	NA
[3] Decid. Fruit Trees (3 lb ai/acre)	MOE Day 0	6,200	620	NA	410	210
	Days for MOE > LOC	0	0	NA	0	0
	Days for MOE > LOC (IRED)	0	0	NA	0	7
[3] Decid. Fruit Trees (CA only - 4 lb ai/acre)	MOE Day 0	4,700	470	NA	310	160
	Days for MOE > LOC	0	0	NA	0	0
	Days for MOE > LOC (IRED)	0	0	NA	3	10
[4] Evergreen Fruit Trees (CA - 12 lb ai/acre)	MOE Day 0	1,600	160	100	NA	NA
	Days for MOE > LOC	0	0	0	NA	NA
	Days for MOE > LOC (IRED)	0	5	5	NA	NA
[4] Evergreen Fruit Trees (FL - 8 lb ai/acre)	MOE Day 0	2,300	230	160	NA	NA
	Days for MOE > LOC	0	0	0	NA	NA
	Days for MOE > LOC (IRED)	0	5	5	NA	NA
[4] Evergreen Fruit Trees (5 lb ai/acre)	MOE Day 0	3,700	370	250	NA	NA
	Days for MOE > LOC	0	0	0	NA	NA
	Days for MOE > LOC (IRED)	0	1	5	NA	NA
Nut Trees (5 lb ai/acre)	MOE Day 0	NA	750	NA	150	NA
	Days for MOE > LOC	NA	0	NA	0	NA
	Days for MOE > LOC (IRED)	NA	0	NA	10	NA
[5] Nut Trees (Olives - 7.5 lb ai/acre)	MOE Day 0	NA	NA	NA	100	NA
	Days for MOE > LOC	NA	NA	NA	0	NA
	Days for MOE > LOC (IRED)	NA	NA	NA	14	NA

Table 11. Summary of Short-/Intermediate-Term Carbaryl Noncancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
Turf/Sod (8.2 lbs ai/acre)	MOE Day 0	NA	1,300	200	98	NA
	Days for MOE > LOC	NA	0	0	1	NA
	Days for MOE > LOC (IRED)	NA	0	4	9	NA
Root Veg. (2 lbs ai/acre)	MOE Day 0	NA	1,000	210	130	NA
	Days for MOE > LOC	NA	0	0	0	NA
	Days for MOE > LOC (IRED)	NA	0	4	7	NA
Cucurbit Veg. (1 lb ai/acre)	MOE Day 0	NA	1,300	420	250	NA
	Days for MOE > LOC	NA	0	0	0	NA
	Days for MOE > LOC (IRED)	NA	0	0	3	NA
Fruiting Veg. (2 lb ai/acre)	MOE Day 0	NA	630	450	310	NA
	Days for MOE > LOC	NA	0	0	0	NA
	Days for MOE > LOC (IRED)	NA	0	0	2	NA
Brassica (2 lb ai/acre)	MOE Day 0	NA	160	79	63	NA
	Days for MOE > LOC	NA	0	2	3	NA
	Days for MOE > LOC (IRED)	NA	5	9	10	NA
Leafy Veg. (2 lb ai/acre)	MOE Day 0	NA	630	210	130	NA
	Days for MOE > LOC	NA	0	0	0	NA
	Days for MOE > LOC (IRED)	NA	0	4	7	NA
Stem/Stalk Veg. (2 lb ai/acre)	MOE Day 0	NA	590	350	180	NA
	Days for MOE > LOC	NA	0	0	0	NA
	Days for MOE > LOC (IRED)	NA	0	1	5	NA
[6] Stem/Stalk Veg. (asparagus preharvest app. 1 lb ai/acre)	MOE Day 0	NA	1,200	700	NA	NA
	Days for MOE > LOC	NA	0	0	NA	NA
	Days for MOE > LOC (IRED)	NA	0	1	NA	NA
[7] Vine/Trellis (2 lbs ai/acre)	MOE Day 0	630	310	290	63	31
	Days for MOE > LOC	0	0	0	3	7
	Days for MOE > LOC (IRED)	0	2	2	10	14
Nursery/ Ornamentals (2 lb ai/acre)	MOE Day 0	NA	2,900	1,800	790	NA
	Days for MOE > LOC	NA	0	0	0	NA
	Days for MOE > LOC (IRED)	NA	0	0	0	NA

Table 11. Summary of Short-/Intermediate-Term Carbaryl Noncancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High

[1] Hand harvesting and detassling are prohibited for sweet corn per the carbaryl IRED.
[2] High contact activities do not apply to use on sunflowers.
[3] Carbaryl is generally not used during the period when hand thinning activities occur for the deciduous fruit tree crop grouping.
[4] Hand thinning (high activity) is only rarely used in citrus production, therefore, the Agency is basing its decision on REIs on the medium exposure worker activity of hand harvesting.
[5] High exposure activities only (harvesting/poling, pruning, and thinning) are anticipated for use on olives.
[6] High contact activities do not apply to use on asparagus
[7] High and very high contact activities do not apply to use on blackberries, high bush blackberries, pole beans, or raspberries. These activities are only applicable for use on grapes.

2.2.4 Occupational Postapplication Exposure and Risk Estimates for Cancer

The occupational exposure and cancer risk calculations for postapplication workers are presented in this section. Cancer risks were calculated using a linear low-dose extrapolation approach in which a Lifetime Average Daily Dose (LADD) is first calculated and then compared with a Q_1* that has been calculated for carbaryl based on dose response data in the appropriate toxicology study (Q_1* = 8.75 x 10 (mg/kg/day)). Absorbed average daily dose (ADD) levels were used as the basis for calculating the LADD values. Section 2.1.3: Occupational Handler Exposure and Non-Cancer Risk Estimates of the February 2003 risk assessment (J. Dawson, D287251) describes how the ADD values were first calculated for the noncancer MOE calculations. These values also serve as the basis for the cancer risk estimates. Dermal and inhalation ADD values were first added together to obtain combined ADD values. LADD values were then calculated and compared the Q_1* to obtain cancer risk estimates.

LADD and Cancer Risk Calculations

The use of dissipation data and the manner in which daily postapplication dermal exposure values were calculated are inherently different than with handler exposures. LADD (Lifetime Average Daily Dose) levels were calculated by amortizing single day re-entry exposures which are the same values used in the short- and intermediate-term assessment over a lifetime using the 10 and 30 days per year frequency values. This calculation uses the same algorithm that is described for the calculation of handler cancer risk in Section 2.1.4: Occupational Handler Exposure and Risk Estimates for Cancer of the February 2003 risk assessment (J. Dawson, D287251).

Postapplication cancer risk is presented as the risk estimate and the number of days required for the estimate to $\leq 1 \times 10^{-6}$. In addition, the number of days required for the risk estimate to $\leq 1 \times 10^{-6}$ from the carbaryl IRED is presented as well. Since the Q_1* has not changed since the carbaryl IRED, many of the reassessed exposure scenarios remain the

same; however, scenarios which have been revised due to changes in application rate, or TCs required revision.

Postapplication Cancer Risk Summary

Cancer risks estimated for private growers (10 days/year) are generally in the $10^{-8} - 10^{-6}$ range. The highest exposures for private growers are in the 10^{-6} range. The cut flower crop group exhibited the highest exposure risk estimates taking up to 10 days (WA data) to fall below $1x10^{-6}$. Of the other crop groups, those risk that are greater than $1x10^{-6}$ take up to 6 days to fall below this mark.

Cancer risks estimated for commercial farm workers (30 days/year) generally fall in the $10^{-7} - 10^{-6}$ range. The highest exposures for commercial growers are in the 10^{-5} range. Again, the cut flower group exhibited the highest exposure risk estimates taking up to 24 days (WA data) to fall below $1x10^{-6}$. Of the other crop groups, those risk that are greater than $1x10^{-6}$ take up to 12 days to fall below this mark.

Table 12 summarizes the cancer results for private growers and commercial farm workers exposed upon re-entry into carbaryl treated areas. All of the carbaryl private grower and commercial applicator cancer risk calculations are included in Appendix C.

Table 12. Summary of Short-Term Carbaryl Cancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
Cut Flowers (GA Data 2 lbs ai/acre)	Private Grower Day 0	NA	$6x10^{-7}$	$1x10^{-6}$	$1x10^{-6}$	NA
	Private Growers Days < $1x10^{-6}$	NA	0	0	0	NA
	Private Growers Days < $1x10^{-6}$ (IRED)	NA	0	3	6	NA
	Comm. Farmworker Day 0	NA	$2x10^{-6}$	$3x10^{-6}$	$4x10^{-6}$	NA
	Comm. Farmworker Days < $1x10^{-6}$	NA	2	4	5	NA
	Comm. Farmworker Days < $1x10^{-6}$ (IRED)	NA	6	9	12	NA
Cut Flowers (WA Data – 2 lbs ai/acre)	Private Grower Day 0	NA	$2x10^{-6}$	$3x10^{-6}$	$3x10^{-6}$	NA
	Private Growers Days < $1x10^{-6}$	NA	2	7	10	NA
	Private Growers Days < $1x10^{-6}$ (IRED)	NA	0	3	6	NA
	Comm. Farmworker Day 0	NA	$5x10^{-6}$	$8x10^{-6}$	$1x10^{-5}$	NA
	Comm. Farmworker Days < $1x10^{-6}$	NA	15	21	24	NA
	Comm. Farmworker Days < $1x10^{-6}$ (IRED)	NA	6	9	12	NA

Table 12. Summary of Short-Term Carbaryl Cancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
Low Berry (2 lb ai/ acre)	Private Grower Day 0	NA	$2x10^{-7}$	NA	$6x10^{-7}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	NA	0	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	NA	0	NA
	Comm. Farmworker Day 0	NA	$5x10^{-7}$	NA	$2x10^{-6}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	NA	2	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	NA	4	NA
Bunch/Bundle (2 lb ai/acre)	Private Grower Day 0	NA	$7x10^{-8}$	$1x10^{-6}$	$2x10^{-6}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	1	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	2	NA
	Comm. Farmworker Day 0	NA	$2x10^{-7}$	3x10-6	$4x10^{-6}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	4	6	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	5	8	NA
Low/Med. Field/Row Crops (1.5 lb ai/acre)	Private Grower Day 0	NA	$5x10^{-8}$	$5x10^{-7}$	$8x10^{-7}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	0	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	0	NA
	Comm. Farmworker Day 0	NA	$9x10^{-8}$	$1x10^{-6}$	$2x10^{-6}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	1	3	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	2	5	NA
[1] Tall Field/Row Crops (2 lb ai/acre)	Private Grower Day 0	NA	$1x10^{-7}$	$5x10^{-7}$	$1x10^{-6}$	$2x10^{-5}$
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	0	20
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	2	23
	Comm. Farmworker Day 0	NA	$4x10^{-7}$	$2x10^{-6}$	$4x10^{-6}$	$6x10^{-5}$
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	1	8	29
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	3	10	31
[2] Tall Field/Row Crops (1.5 lb ai/acre - sunflowers only)	Private Grower Day 0	NA	$9x10^{-8}$	$4x10^{-7}$	NA	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	NA	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	NA	NA

Table 12. Summary of Short-Term Carbaryl Cancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
	Comm. Farmworker Day 0	NA	$3x10^{-7}$	$1x10^{-6}$	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	0	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	NA	NA
Sugarcane (1.5 lb ai/acre)	Private Grower Day 0	NA	NA	$6x10^{-7}$	$1x10^{-6}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	NA	0	1	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	NA	0	1	NA
	Comm. Farmworker Day 0	NA	NA	$2x10^{-6}$	$3x10^{-6}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	NA	1	5	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	NA	3	6	NA
[2] Decid. Fruit Trees (3 lb ai/acre)	Private Grower Day 0	$2x10^{-8}$	$2x10^{-7}$	NA	$3x10^{-7}$	$6x10^{-7}$
	Private Grower Days < $1x\ 10^{-6}$	0	0	NA	0	0
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	0	0	NA	0	0
	Comm. Farmworker Day 0	$6x10^{-8}$	$6x10^{-7}$	NA	$9x10^{-7}$	$2x10^{-6}$
	Comm. Farmworker Days < $1x\ 10^{-6}$	0	0	NA	0	3
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	0	0	NA	0	6
[3] Decid. Fruit Trees (CA only - 4 lb ai/acre)	Private Grower Day 0	$3x10^{-8}$	$3x10^{-7}$	NA	$4x10^{-7}$	$8x10^{-7}$
	Private Grower Days < $1x\ 10^{-6}$	0	0	NA	0	0
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	0	0	NA	0	0
	Comm. Farmworker Day 0	$8x10^{-8}$	$8x10^{-7}$	NA	$1x10^{-6}$	$3x10^{-6}$
	Comm. Farmworker Days < $1x\ 10^{-6}$	0	0	NA	0	6
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	0	0	NA	0	6
[4] Evergreen Fruit Trees (CA - 12 lb ai/ acre)	Private Grower Day 0	$8x10^{-8}$	$8x10^{-7}$	$1x10^{-6}$	NA	NA
	Private Grower Days < $1x\ 10^{-6}$	0	0	0	NA	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	0	0	0	NA	NA
	Comm. Farmworker Day 0	$3x10^{-7}$	$3x10^{-6}$	$4x10^{-6}$	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	0	6	10	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	0	5	9	NA	NA

Table 12. Summary of Short-Term Carbaryl Cancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
[4] Evergreen Fruit Trees (FL - 8 lb ai/acre)	Private Grower Day 0	$6x10^{-8}$	$6x10^{-7}$	$8x10^{-7}$	NA	NA
	Private Grower Days < $1x\ 10^{-6}$	0	0	0	NA	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	0	0	0	NA	NA
	Comm. Farmworker Day 0	$2x10^{-7}$	$2x10^{-6}$	$3x10^{-6}$	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	0	2	6	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	0	5	9	NA	NA
[4] Evergreen Fruit Trees (5 lb ai/acre)	Private Grower Day 0	$4x10^{-8}$	$4x10^{-7}$	$5x10^{-7}$	NA	NA
	Private Grower Days < $1x\ 10^{-6}$	0	0	0	NA	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	0	0	0	NA	NA
	Comm. Farmworker Day 0	$1x10^{-7}$	$1x10^{-6}$	$1x10^{-6}$	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	0	0	1	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	0	5	9	NA	NA
[5] Nut Trees (5.0 lb ai/acre)	Private Grower Day 0	NA	$2x10^{-7}$	NA	$9x10^{-7}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	NA	0	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	NA	0	NA
	Comm. Farmworker Day 0	NA	$5x10^{-7}$	NA	$3x10^{-6}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	NA	5	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	NA	10	NA
[5] Nut Trees (Olives - 7.5 lb ai/acre)	Private Grower Day 0	NA	NA	NA	$1x10^{-6}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	NA	NA	0	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	NA	NA	3	NA
	Comm. Farmworker Day 0	NA	NA	NA	$4x10^{-6}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	NA	NA	11	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	NA	NA	14	NA
Turf/Sod (8.2 lbs ai/acre)	Private Grower Day 0	NA	$8x10^{-8}$	$6x10^{-7}$	$1x10^{-6}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	0	NA

Table 12. Summary of Short-Term Carbaryl Cancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
	Private Growers Days < 1x 10^{-7} (IRED)	NA	0	0	1	NA
	Comm. Farmworker Day 0	NA	$2x10^{-7}$	$2x10^{-6}$	$3x10^{-6}$	NA
	Comm. Farmworker Days < 1x 10^{-7}	NA	0	1	2	NA
	Comm. Farmworker Days < 1x 10^{-7} (IRED)	NA	0	1	3	NA
Root Veg. (2 lbs ai/acre)	Private Grower Day 0	NA	$1x10^{-7}$	$6x10^{-7}$	$1x10^{-6}$	NA
	Private Grower Days < 1x 10^{-6}	NA	0	0	0	NA
	Private Growers Days < 1x 10^{-6} (IRED)	NA	0	0	0	NA
	Comm. Farmworker Day 0	NA	$4x10^{-7}$	$2x10^{-6}$	$3x10^{-6}$	NA
	Comm. Farmworker Days < 1x 10^{-7}	NA	0	2	4	NA
	Comm. Farmworker Days < 1x 10^{-7} (IRED)	NA	0	4	6	NA
Cucurbit Veg. (1 lb ai/acre)	Private Grower Day 0	NA	$2x10^{-7}$	$6x10^{-7}$	$1x10^{-6}$	NA
	Private Grower Days < 1x 10^{-6}	NA	0	0	0	NA
	Private Growers Days < 1x 10^{-6} (IRED)	NA	0	0	0	NA
	Comm. Farmworker Day 0	NA	$6x10^{-7}$	$2x10^{-6}$	$3x10^{-6}$	NA
	Comm. Farmworker Days < 1x 10^{-7}	NA	0	2	4	NA
	Comm. Farmworker Days < 1x 10^{-7} (IRED)	NA	0	4	6	NA
Fruiting Veg. (2 lb ai/acre)	Private Grower Day 0	NA	$2x10^{-7}$	$3x10^{-7}$	$4x10^{-7}$	NA
	Private Grower Days < 1x 10^{-6}	NA	0	0	0	NA
	Private Growers Days < 1x 10^{-6} (IRED)	NA	0	0	0	NA
	Comm. Farmworker Day 0	NA	$6x10^{-7}$	$9x10^{-7}$	$1x10^{-6}$	NA
	Comm. Farmworker Days < 1x 10^{-7}	NA	0	0	0	NA
	Comm. Farmworker Days < 1x 10^{-7} (IRED)	NA	0	0	1	NA
Brassica (2 lb ai/acre)	Private Grower Day 0	NA	$8x10^{-7}$	$2x10^{-6}$	$2x10^{-6}$	NA
	Private Grower Days < 1x 10^{-6}	NA	0	1	2	NA
	Private Growers Days < 1x 10^{-6} (IRED)	NA	0	3	4	NA
	Comm. Farmworker Day 0	NA	$3x10^{-6}$	$5x10^{-6}$	$6x10^{-6}$	NA

Table 12. Summary of Short-Term Carbaryl Cancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	3	7	8	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	5	9	10	NA
Leafy Veg. (2 lb ai/acre)	Private Grower Day 0	NA	$2x10^{-7}$	$6x10^{-7}$	$1x10^{-6}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	0	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	0	NA
	Comm. Farmworker Day 0	NA	$6x10^{-7}$	$2x10^{-6}$	$3x10^{-6}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	2	4	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	4	6	NA
[6] Stem/Stalk Veg. (2 lb ai/acre)	Private Grower Day 0	NA	$2x10^{-7}$	$4x10^{-7}$	$7x10^{-7}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	0	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	0	NA
	Comm. Farmworker Day 0	NA	$7x10^{-7}$	$1x10^{-6}$	$2x10^{-6}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	0	3	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	1	4	NA
[6] Stem/Stalk Veg. (asparagus – preharvest app. – 1 lb ai/acre)	Private Grower Day 0	NA	$1x10^{-7}$	$2x10^{-7}$	NA	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	NA	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	NA	NA
	Comm. Farmworker Day 0	NA	$3x10^{-7}$	$6x10^{-7}$	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	0	NA	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	1	NA	NA
[7] Vine/Trellis (2 lbs ai/acre)	Private Grower Day 0	$2x10^{-7}$	$4x10^{-7}$	$5x10^{-7}$	$2x10^{-6}$	$4x10^{-6}$
	Private Grower Days < $1x\ 10^{-6}$	0	0	0	2	6
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	4	8
	Comm. Farmworker Day 0	$6x10^{-7}$	$1x10^{-6}$	$1x10^{-6}$	$6x10^{-6}$	$1x10^{-5}$
	Comm. Farmworker Days < $1x\ 10^{-6}$	0	0	0	8	12
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	1	10	13

Table 12. Summary of Short-Term Carbaryl Cancer Postapplication Worker Risks

Crop Group	Result Type	Exposure Descriptor				
		Very Low	Low	Medium	High	Very High
Nursery/ Ornamentals (2 lb ai/acre)	Private Grower Day 0	NA	$5x10^{-8}$	$7x10^{-8}$	$2x10^{-7}$	NA
	Private Grower Days < $1x\ 10^{-6}$	NA	0	0	0	NA
	Private Growers Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	0	NA
	Comm. Farmworker Day 0	NA	$1x10^{-7}$	$2x10^{-7}$	$5x10^{-7}$	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$	NA	0	0	0	NA
	Comm. Farmworker Days < $1x\ 10^{-6}$ (IRED)	NA	0	0	0	NA

[1] Hand harvesting and detassling are prohibited for sweet corn per the carbaryl IRED.
[2] High contact activities do not apply to use on sunflowers.
[3] Carbaryl is generally not used during the period when hand thinning activities occur for the deciduous fruit tree crop grouping.
[4] Hand thinning (high activity) is only rarely used in citrus production, therefore, the Agency is basing its decision on REIs on the medium exposure worker activity of hand harvesting.
[5] High exposure activities only (harvesting/poling, pruning, and thinning) are anticipated for use on olives.
[6] High contact activities do not apply to use on asparagus.
[7] High and very high contact activities do not apply to use on blackberries, highbush blackberries, pole beans, or raspberries. These activities are only applicable for use on grapes

2.2.5 Occupational Postapplication Exposure Risk Characterization

As previously described, one of the two cut flower crop groupings assessed for noncancer postapplication exposure/risk resulted in MOEs which increase REIs established by the carbaryl IRED. Of the multiple groupings assessed for cut flowers, those estimated using exposure data from the Washington trial of the study "Carbaryl: Dissipation of Dislodgeable Foliar Residues from Chrysanthemums (MRID 468928-01)" resulted in the increase. Several factors may have contributed to this. The trial was conducted late in the season with minimum temperatures near freezing in November. Also, little rainfall (0.16 inches) occurred during the Washington trial. Results generated using exposure data from the Georgia trial of the same study result in MOEs that meet or reduce REIs established by the carbaryl IRED. These results are likely due to warmer temperatures and a marked increase in rainfall (7.98 inches) as seen the Washington trial.

References

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D334881
Appendix A: Numerical Values For Carbaryl Occupational Handler Risk Assessment

Number	Scenario	Representative Application Targets/Crops	pplication Parameter Application Rate	Area Treated	Dermal Unit Exposures (mg/lb ai) Baseline	Min PPE	Max PPE	Eng. Ctrl	Inhalation Unit Exposures (ug/lb ai) Baseline	Min PPE	Max PPE	Eng. Ctrl
			Mixer/Loaders									
1a	Dry Flowable Aerial/Chemigation	Corn (max)	2	1200	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Corn (avg.)	1	1200	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Stone Fruit	3	350	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Vegetables	2	350	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
1b	Dry flowable: Airblast	Citrus Trees (CA 24C)	12	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Citrus Trees (FL 24C)	8	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Citrus Trees	5	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Nut Trees	5	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Stone Fruit (olive)	7.5	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Pome & Stone Fruit	3	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Grapes	2	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Stone Fruit (avg.)	1.1	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
1c	Dry Flowable: Groundboom	Corn	2	200	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Strawberries	2	80	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Turf/Golf Courses 1	8	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		Turf/Golf Courses 2	1	40	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
1d	Dry Flowable: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
		LCO Use on Turf (max)	4	5	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
1e	Dry Flowable: Wide Area Aerial	Range/Forestry	1	1000	0.066	0.066	0.047	0.0013	0.77	0.154	0.077	0.0154
2a	Granular: Aerial Application	APHIS/Grasshopper	0.5	3000	0.0084	0.0069	0.0034	0.000168	1.7	0.34	0.17	0.034
		APHIS/Grasshopper	0.03	3000	0.0084	0.0069	0.0034	0.000168	1.7	0.34	0.17	0.034
2b	Granular: Broadcast Spreader	Corn	2	200	0.0084	0.0069	0.0034	0.000168	1.7	0.34	0.17	0.034
		Vegetables	2	80	0.0084	0.0069	0.0034	0.000168	1.7	0.34	0.17	0.034
		Turf/Golf Courses 1	6	40	0.0084	0.0069	0.0034	0.000168	1.7	0.34	0.17	0.034
		Turf/Golf Courses 2	9	40	0.0084	0.0069	0.0034	0.000168	1.7	0.34	0.17	0.034
3a	Liquids: Aerial / Chemigation	Corn (max)	1.5	1200	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Corn (avg.)	1	1200	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Stone Fruit (CA)	4	350	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Stone Fruit	3	350	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Vegetables	2	350	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
3b	Liquids: Airblast	Citrus Trees (CA 24C)	12	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Citrus Trees (FL 24C)	8	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Citrus Trees	5	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Nut Trees	5	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Stone Fruit (olive)	7.5	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Pome & Stone Fruit	3	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Grapes	2	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Stone Fruit (avg.)	1.1	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
3c	Liquids: Groundboom	Corn	2	200	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Strawberries	2	80	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Turf/Golf Courses 1	8	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Turf/Golf Courses 2	4	40	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
3d	Liquids: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		LCO Use on Turf (max)	4	5	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
3e	Liquids: Wide Area Aerial	Range/Forestry	1	1000	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Mosquito Adulticide	0.016	7500	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083

		Mosquito Adulticide	0.15	7500	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		APHIS Grasshopper	0.5	3000	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		APHIS Grasshopper	0.375	3000	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		APHIS Grasshopper	0.125	3000	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
	MRID 46634105	APHIS Grasshopper (ULV)	0.5	3000	2.9	0.023	0.017	0.00114	1.2	0.24	0.12	0.0075
	MRID 46634105	APHIS Grasshopper (ULV)	0.375	3000	2.9	0.023	0.017	0.00114	1.2	0.24	0.12	0.0075
	MRID 46634105	APHIS Grasshopper (ULV)	0.125	3000	2.9	0.023	0.017	0.00114	1.2	0.24	0.12	0.0075
3f	Liquids: Wide Area Ground	Mosquito Adulticide	0.016	3000	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
		Mosquito Adulticide	0.15	3000	2.9	0.023	0.017	0.0086	1.2	0.24	0.12	0.083
4a	Wettable Powders: Airblast	Citrus Trees (CA 24C)	12	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Citrus Trees (FL 24C)	8	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Citrus Trees	5	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Nut Trees	5	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Stone Fruit	7.5	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Pome & Stone Fruit	3	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Grapes	2	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Stone Fruit (avg.)	1.1	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
4b	Wettable Powders: Groundboom	Corn	2	200	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Strawberries	2	80	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Turf/Golf Courses 1	8	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		Turf/Golf Courses 2	4	40	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
4c	Wet. Powdr.: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
		LCO Use on Turf (max)	4	5	3.7	0.17	0.13	0.0098	43	8.6	4.3	0.24
			Applicators									
5a	Aerial Liquid Application	Corn (max)	1.5	1200	NA	NA	NA	0.0055	NA	NA	NA	0.068
		Corn (avg.)	1	1200	NA	NA	NA	0.0055	NA	NA	NA	0.068
		Stone Fruit (CA)	4	350	NA	NA	NA	0.0055	NA	NA	NA	0.068
		Stone Fruit	3	350	NA	NA	NA	0.0055	NA	NA	NA	0.068
		Vegetables	2	350	NA	NA	NA	0.0055	NA	NA	NA	0.068
5b	Wide Area: Aerial	Range/Forestry	1	1000	NA	NA	NA	0.0055	NA	NA	NA	0.068
		Mosquito Adulticide	0.016	7500	NA	NA	NA	0.0055	NA	NA	NA	0.068
		Mosquito Adulticide	0.15	7500	NA	NA	NA	0.0055	NA	NA	NA	0.068
		APHIS Grasshopper	0.5	3000	NA	NA	NA	0.0055	NA	NA	NA	0.068
		APHIS Grasshopper	0.375	3000	NA	NA	NA	0.0055	NA	NA	NA	0.068
		APHIS Grasshopper	0.125	3000	NA	NA	NA	0.0055	NA	NA	NA	0.068
	MRID 46634105	APHIS Grasshopper (ULV)	0.5	3000	NA	NA	NA	0.00101	NA	NA	NA	0.0114
	MRID 46634105	APHIS Grasshopper (ULV)	0.375	3000	NA	NA	NA	0.00101	NA	NA	NA	0.0114
	MRID 46634105	APHIS Grasshopper (ULV)	0.125	3000	NA	NA	NA	0.00101	NA	NA	NA	0.0114
5c	Aerial Granular Application	APHIS/Grasshopper	0.5	3300	NA	NA	NA	0.0017	NA	NA	NA	1.3
		APHIS/Grasshopper	0.03	3300	NA	NA	NA	0.0017	NA	NA	NA	1.3
6a	Airblast	Citrus Trees (CA 24C)	12	40	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
		Citrus Trees (FL 24C)	8	40	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
		Citrus Trees	5	40	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
		Nut Trees	5	40	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
		Stone Fruit (olive)	7.5	40	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
		Pome & Stone Fruit	3	40	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
		Grapes	2	40	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
		Stone Fruit (avg.)	1.1	40	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
6b	Wide Area: Ground Fogger	Mosquito Adulticide	0.016	3000	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
	(Airblast as Surrogate)	Mosquito Adulticide	0.15	3000	0.36	0.24	0.13	0.019	4.5	0.9	0.45	0.09
7	Groundboom	Corn	2	200	0.014	0.014	0.011	0.0051	0.74	0.148	0.074	0.043
		Strawberries	2	80	0.014	0.014	0.011	0.0051	0.74	0.148	0.074	0.043
		Turf/Golf Courses 1	8	40	0.014	0.014	0.011	0.0051	0.74	0.148	0.074	0.043

		Turf/Golf Courses 2	4	40	0.014	0.014	0.011	0.0051	0.74	0.148	0.074	0.043
8	Solid Broadcast Spreader	Corn	2	200	0.0099	0.0072	0.0042	0.002	1.2	0.24	0.12	0.22
		Strawberries	2	80	0.0099	0.0072	0.0042	0.002	1.2	0.24	0.12	0.22
		Turf/Golf Courses 1	6	40	0.0099	0.0072	0.0042	0.002	1.2	0.24	0.12	0.22
		Turf/Golf Courses 2	9	40	0.0099	0.0072	0.0042	0.002	1.2	0.24	0.12	0.22
9	Aerosol Can	Lawn/Garden (lb ai/can)	0.01	2	190	81	64	NA	1300	260	130	NA
10	Trigger Pump Sprayer	Lawn/Garden (lb ai/can)	0.01	1	NA	13.5	NA	NA	123	24.6	12.3	NA
11	Right of Way	Fire Ant (per 100 gallons)	1.5	10	1.3	0.39	0.29	NA	3.9	0.78	0.39	NA
				Mixer/Loader/Applicators								
12	Low Pressure/High Volume Turfgun	LCO Use on Turf (max)	8	5	NA	0.65	0.36	NA	6.6	1.32	0.66	NA
	(ORETF WP Data Used)	LCO Use on Turf (max)	4	5	NA	0.65	0.36	NA	6.6	1.32	0.66	NA
13a	Wettable Powder: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	NA	8.6	6.2	NA	1100	220	110	NA
13b	Liquid: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	100	0.43	0.37	NA	30	6	3	NA
14	Backpack Sprayer	Ornamentals (2% Soln)	0.02	40	2.5	2.5	1.6	NA	30	6	3	NA
15	Granule: Push Type Spreader	Turf	9	5	0.35	0.22	0.11	NA	7.5	1.5	0.75	NA
16	Handheld Fogger	Ornamentals/Mosquito	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	Power Backpack	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA
18	Granule: Backpack	Ornamentals	9	1	NA	NA	0.0995	NA	0.0042	0.00084	0.0004	NA
19	Tree injection	Ornamentals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Drench/Dipping	Forestry/Ornamentals	1.5	100	2.9	0.023	0.017	NA	1.2	0.24	0.12	NA
21	Sprinkler Can	Ornamentals (2% Soln)	0.02	10	30.8	6.03	4.62	NA	9.5	1.9	0.95	NA
				Flaggers								
22a	Flagger: Liquid Sprays	Corn	2	1200	0.011	0.012	0.011	0.0022	0.35	0.07	0.035	0.007
		Vegetables	2	350	0.011	0.012	0.011	0.0022	0.35	0.07	0.035	0.007
22b	Flagger: Granulars	Corn	2	1200	0.0028	0.0016	0.001	0.000056	0.15	0.03	0.015	0.003
		Vegetables	2	350	0.0028	0.0016	0.001	0.000056	0.15	0.03	0.015	0.003

Short-Term Inhalation NOAEL:	1.11
Short-Term Inhalation UF:	100
Source: Short-term Inhalation NOAEL:	Dev. Neurotox -Rat
Short/Intermediate-Term Dermal NOAEL:	85.56
Short/Intermediate-Term Dermal UF:	100
Source: Short/Intermediate-term Dermal NOAEL:	Tech. Dermal Tox - Rat
Intermediate-Term Inhalation NOAEL:	1.11
Intermediate-Term Inhalation UF:	100
Source: Intermediate-term Inhalation NOAEL:	SCN -Rat
Chronic LOAEL:	3.1
Chronic UF:	300
Source: Chronic NOAEL:	Chronic dog
Body Weight:	70
Chronic/Cancer Dermal Absorption Factor (%):	12.7
Inhalation Absorption Factor (%):	100
Professional Ag Worker (days/yr):	30
Private Grower (days/yr):	10
Career (yrs):	35
Lifetime (yr):	70
Days/yr:	365
Q1* (mg/kg/day)-1:	0.000875

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Appendix A. Numerical Values For Carbaryl Occupational Handler Risk Assessment

Number	Scenario	Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	Dose (mg/kg/day): Potential Dermal	Dose (mg/kg/day): Absorbed Dermal	Dose (mg/kg/day): Inhalation	Short-Term MOEs: Dermal	Short-Term MOEs: Inhalation	Short-Term MOEs: Combined	Intermediate-Term MOEs: Dermal	Intermediate-Term MOEs: Inhalation	Intermediate-Term MOEs: Combined	Chronic MOEs: Dermal	Chronic MOEs: Inhalation	Chronic MOEs: Combined
						Mixer/Loaders										
1a	Dry Flowable: Aerial/Chemigation	Corn (max)	2	1200	2.26286	0.28738	0.02640	37.81	42.05	19.91	37.81	42.05	19.91	NA	NA	NA
		Corn (avg.)	1	1200	1.13143	0.14369	0.01320	75.62	84.09	39.82	75.62	84.09	39.82	NA	NA	NA
		Stone Fruit	2	350	0.99000	0.12573	0.01155	86.42	96.10	45.50	86.42	96.10	45.50	NA	NA	NA
		Vegetables	2	350	0.66000	0.08382	0.00770	129.64	144.16	68.26	129.64	144.16	68.26	NA	NA	NA
1b	Dry flowable: Airblast	Citrus Trees (CA 24C)	12	40	0.45257	0.05748	0.00528	189.05	210.23	99.54	189.05	210.23	99.54	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.30171	0.03832	0.00352	283.58	315.34	149.31	283.58	315.34	149.31	NA	NA	NA
		Citrus Trees	5	40	0.18857	0.02395	0.00220	453.73	504.55	238.89	453.73	504.55	238.89	NA	NA	NA
		Nut Trees	5	40	0.18857	0.02395	0.00220	453.73	504.55	238.89	453.73	504.55	238.89	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.28286	0.03592	0.00330	302.48	336.36	159.26	302.48	336.36	159.26	NA	NA	NA
		Pome & Stone Fruit	3	40	0.11314	0.01437	0.00132	756.21	840.91	398.16	756.21	840.91	398.16	NA	NA	NA
		Grapes	*2*	*40*	*0.07543*	*0.00958*	*0.00088*	*1134.32*	*1261.36*	*597.24*	*1134.32*	*1261.36*	*597.24*	*NA*	*NA*	*NA*
		Stone Fruit (avg.)	1.1	40	0.04149	0.00527	0.00048	2062.40	2293.39	1085.88	2062.40	2293.39	1085.88	NA	NA	NA
1c	Dry Flowable: Groundboom	Corn	2	200	0.37714	0.04790	0.00440	226.86	252.27	119.45	226.86	252.27	119.45	NA	NA	NA
		Strawberries	2	80	0.15086	0.01916	0.00176	567.16	630.68	298.62	567.16	630.68	298.62	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.30171	0.03832	0.00352	283.58	315.34	149.31	283.58	315.34	149.31	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.15086	0.01916	0.00176	567.16	630.68	298.62	567.16	630.68	298.62	NA	NA	NA
1d	Dry Flowable: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.03771	0.00479	0.00044	2268.64	2522.73	1194.47	2268.64	2522.73	1194.47	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.01886	0.00239	0.00022	4537.27	5045.45	2388.94	4537.27	5045.45	2388.94	NA	NA	NA
1e	Dry Flowable: Wide Area Aerial	Range/Forestry	1	1000	0.94286	0.11974	0.01100	90.75	100.91	47.78	90.75	100.91	47.78	NA	NA	NA
2a	Granular: Aerial Application	APHIS/Grasshopper	0.5	3300	0.18000	0.02286	0.03643	475.33	30.47	28.63	475.33	30.47	28.63	NA	NA	NA
		APHIS/Grasshopper	0.03	3300	0.01080	0.00137	0.00219	7922.22	507.84	477.25	7922.22	507.84	477.25	NA	NA	NA
2b	*Granular: Broadcast Spreader*	*Corn*	*2*	*200*	*0.04800*	*0.00610*	*0.00971*	*1782.50*	*114.26*	*107.38*	*1782.50*	*114.26*	*107.38*	*NA*	*NA*	*NA*
		Vegetables	2	80	0.01920	0.00244	0.00389	4456.25	285.66	268.45	4456.25	285.66	268.45	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.02880	0.00366	0.00583	2970.83	190.44	178.97	2970.83	190.44	178.97	NA	NA	NA
		Turf/Golf Courses 2	9	40	0.04320	0.00549	0.00874	1980.56	126.96	119.31	1980.56	126.96	119.31	NA	NA	NA
3a	Liquids: Aerial / Chemigation	Corn (max)	1.5	1200	74.57143	9.47057	0.03086	1.15	35.97	1.11	1.15	35.97	1.11	NA	NA	NA
		Corn (avg.)	1	1200	49.71429	6.31371	0.02057	1.72	53.96	1.67	1.72	53.96	1.67	NA	NA	NA
		Stone Fruit (CA)	4	350	58.00000	7.36600	0.02400	1.48	46.25	1.43	1.48	46.25	1.43	NA	NA	NA
		Stone Fruit	3	350	43.50000	5.52450	0.01800	1.97	61.67	1.91	1.97	61.67	1.91	NA	NA	NA
		Vegetables	2	350	29.00000	3.68300	0.01200	2.95	92.50	2.86	2.95	92.50	2.86	NA	NA	NA
3b	Liquids: Airblast	Citrus Trees (CA 24C)	12	40	19.88571	2.52549	0.00823	4.30	134.90	4.17	4.30	134.90	4.17	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	13.25714	1.68366	0.00549	6.45	202.34	6.25	6.45	202.34	6.25	NA	NA	NA
		Citrus Trees	*5*	*40*	*8.28571*	*1.05229*	*0.00343*	*10.33*	*323.75*	*10.01*	*10.33*	*323.75*	*10.01*	*NA*	*NA*	*NA*
		Nut Trees	5	40	8.28571	1.05229	0.00343	10.33	323.75	10.01	10.33	323.75	10.01	NA	NA	NA
		Stone Fruit (olive)	7.5	40	12.42857	1.57843	0.00514	6.88	215.83	6.67	6.88	215.83	6.67	NA	NA	NA
		Pome & Stone Fruit	3	40	4.97143	0.63137	0.00206	17.21	539.58	16.68	17.21	539.58	16.68	NA	NA	NA
		Grapes	2	40	3.31429	0.42091	0.00137	25.82	809.38	25.02	25.82	809.38	25.02	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	1.82286	0.23150	0.00075	46.94	1471.59	45.49	46.94	1471.59	45.49	NA	NA	NA
3c	Liquids: Groundboom	Corn	2	200	16.57143	2.10457	0.00686	5.16	161.88	5.00	5.16	161.88	5.00	NA	NA	NA
		Strawberries	2	80	6.62857	0.84183	0.00274	12.91	404.69	12.51	12.91	404.69	12.51	NA	NA	NA
		Turf/Golf Courses 1	8	40	13.25714	1.68366	0.00549	6.45	202.34	6.25	6.45	202.34	6.25	NA	NA	NA
		Turf/Golf Courses 2	4	40	6.62857	0.84183	0.00274	12.91	404.69	12.51	12.91	404.69	12.51	NA	NA	NA
3d	Liquids: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	1.65714	0.21046	0.00069	51.63	1618.75	50.04	51.63	1618.75	50.04	NA	NA	NA
		LCO Use on Turf (max)	*4*	*5*	*0.82857*	*0.10523*	*0.00034*	*103.26*	*3237.50*	*100.07*	*103.26*	*3237.50*	*100.07*	*NA*	*NA*	*NA*
3e	Liquids: Wide Area Aerial	Range/Forestry	1	1000	41.42857	5.26143	0.01714	2.07	64.75	2.00	2.07	64.75	2.00	NA	NA	NA
		Mosquito Adulticide	0.016	7500	4.97143	0.63137	0.00206	17.21	539.58	16.68	17.21	539.58	16.68	NA	NA	NA
		Mosquito Adulticide	0.15	7500	46.60714	5.91911	0.01929	1.84	57.56	1.78	1.84	57.56	1.78	NA	NA	NA
		APHIS Grasshopper	0.5	3000	62.14286	7.89214	0.02571	1.38	43.17	1.33	1.38	43.17	1.33	NA	NA	NA
		APHIS Grasshopper	0.375	3000	46.60714	5.91911	0.01929	1.84	57.56	1.78	1.84	57.56	1.78	NA	NA	NA
		APHIS Grasshopper	0.125	3000	15.53571	1.97304	0.00643	5.51	172.67	5.34	5.51	172.67	5.34	NA	NA	NA
		APHIS Grasshopper (ULV)	0.5	3000	62.14286	7.89214	0.02571	1.38	43.17	1.33	1.38	43.17	1.33	NA	NA	NA
		APHIS Grasshopper (ULV)	0.375	3000	46.60714	5.91911	0.01929	1.84	57.56	1.78	1.84	57.56	1.78	NA	NA	NA
		APHIS Grasshopper (ULV)	0.125	3000	15.53571	1.97304	0.00643	5.51	172.67	5.34	5.51	172.67	5.34	NA	NA	NA
3f	Liquids: Wide Area Ground	Mosquito Adulticide	0.016	3000	1.98857	0.25255	0.00082	43.03	1348.96	41.70	43.03	1348.96	41.70	NA	NA	NA
		Mosquito Adulticide	0.15	3000	18.64286	2.36764	0.00771	4.59	143.89	4.45	4.59	143.89	4.45	NA	NA	NA
4a	Wettable Powders: Airblast	Citrus Trees (CA 24C)	12	40	25.37143	3.22217	0.29486	3.37	3.76	1.78	3.37	3.76	1.78	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	16.91429	2.14811	0.19657	5.06	5.65	2.67	5.06	5.65	2.67	NA	NA	NA
		Citrus Trees	5	40	10.57143	1.34257	0.12286	8.09	9.03	4.27	8.09	9.03	4.27	NA	NA	NA
		Nut Trees	5	40	10.57143	1.34257	0.12286	8.09	9.03	4.27	8.09	9.03	4.27	NA	NA	NA

A

		Stone Fruit (olive)	7.5	40	15.85714	2.01386	0.18429	5.40	6.02	2.85	5.40	6.02	2.85	NA	NA	NA
		Pome & Stone Fruit	3	40	6.34286	0.80554	0.07371	13.49	15.06	7.12	13.49	15.06	7.12	NA	NA	NA
		Grapes	2	40	4.22857	0.53703	0.04914	20.23	22.59	10.67	20.23	22.59	10.67	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	2.32571	0.29537	0.02703	36.79	41.07	19.41	36.79	41.07	19.41	NA	NA	NA
4b	Wettable Powders: Groundboom	Corn	2	200	21.14286	2.68514	0.24571	4.05	4.52	2.13	4.05	4.52	2.13	NA	NA	NA
		Strawberries	2	80	8.45714	1.07406	0.09829	10.12	11.29	5.34	10.12	11.29	5.34	NA	NA	NA
		Turf/Golf Courses 1	8	40	16.91429	2.14811	0.19657	5.06	5.65	2.67	5.06	5.65	2.67	NA	NA	NA
		Turf/Golf Courses 2	4	40	*8.45714*	*1.07406*	*0.09829*	*10.12*	*11.29*	*5.34*	*10.12*	*11.29*	*5.34*	NA	NA	NA
4c	Wet Powder: Low Press High Vol. Turfgun	LCO Use on Turf (max)	8	5	2.11429	0.26851	0.02457	40.47	45.17	21.35	40.47	45.17	21.35	NA	NA	NA
		LCO Use on Turf (max)	4	5	1.05714	0.13426	0.01229	80.94	90.35	42.69	80.94	90.35	42.69	NA	NA	NA
						Applicators										
5a	Aerial Liquid Application	Corn (max)	1.5	1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Corn (avg.)	1	1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Stone Fruit (CA)	4	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Stone Fruit	3	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Vegetables	2	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5b	Wide Area: Aerial	Range/Forestry	1	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Mosquito Adulticide	0.016	7500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Mosquito Adulticide	0.15	7500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.5	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.375	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.125	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.5	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.375	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.125	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5c	Aerial Granular Application	APHIS/Grasshopper	0.5	3300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS/Grasshopper	0.03	3300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6a	Airblast	Citrus Trees (CA 24C)	12	40	2.46857	0.31351	0.03086	34.66	35.97	17.65	34.66	35.97	17.65	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	1.64571	0.20901	0.02057	51.99	53.96	26.48	51.99	53.96	26.48	NA	NA	NA
		Citrus Trees	5	40	1.02857	0.13063	0.01286	83.18	86.33	42.36	83.18	86.33	42.36	NA	NA	NA
		Nut Trees	5	40	1.02857	0.13063	0.01286	83.18	86.33	42.36	83.18	86.33	42.36	NA	NA	NA
		Stone Fruit (olive)	7.5	40	1.54286	0.19594	0.01929	55.46	57.56	28.24	55.46	57.56	28.24	NA	NA	NA
		Pome & Stone Fruit	3	40	0.61714	0.07838	0.00771	138.64	143.89	70.61	138.64	143.89	70.61	NA	NA	NA
		Grapes	2	40	*0.41143*	*0.05225*	*0.00514*	*207.96*	*215.83*	*105.91*	*207.96*	*215.83*	*105.91*	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.22629	0.02874	0.00283	378.11	392.42	192.57	378.11	392.42	192.57	NA	NA	NA
6b	Wide Area: Ground Fogger	Mosquito Adulticide	0.016	3000	0.24686	0.03135	0.00309	346.60	359.72	176.52	346.60	359.72	176.52	NA	NA	NA
	(Airblast as Surrogate)	Mosquito Adulticide	0.15	3000	2.31429	0.29391	0.02893	36.97	38.37	18.83	36.97	38.37	18.83	NA	NA	NA
7	*Groundboom*	*Corn*	*2*	*200*	*0.08000*	*0.01016*	*0.00423*	*1069.50*	*262.50*	*210.77*	*1069.50*	*262.50*	*210.77*	NA	NA	NA
		Strawberries	2	80	0.03200	0.00406	0.00169	2673.75	656.25	526.92	2673.75	656.25	526.92	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.06400	0.00813	0.00338	1336.88	328.13	263.46	1336.88	328.13	263.46	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.03200	0.00406	0.00169	2673.75	656.25	526.92	2673.75	656.25	526.92	NA	NA	NA
8	*Solid Broadcast Spreader*	*Corn*	*2*	*200*	*0.05657*	*0.00718*	*0.00686*	*1512.42*	*161.88*	*146.22*	*1512.42*	*161.88*	*146.22*	NA	NA	NA
		Strawberries	2	80	0.02263	0.00287	0.00274	3781.06	404.69	365.56	3781.06	404.69	365.56	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.03394	0.00431	0.00411	2520.71	269.79	243.71	2520.71	269.79	243.71	NA	NA	NA
		Turf/Golf Courses 2	9	40	0.05091	0.00647	0.00617	1680.47	179.86	162.47	1680.47	179.86	162.47	NA	NA	NA
9	*Aerosol Can*	*Lawn/Garden (lb ai/can)*	*0.01*	*2*	*0.05429*	*0.00689*	*0.00037*	*1576.11*	*2988.46*	*1031.89*	*1576.11*	*2988.46*	*1031.89*	NA	NA	NA
10	Trigger Pump Sprayer	Lawn/Garden (lb ai/can)	0.01	1	NA	NA	0.00002	NA	63170.73	NA	NA	63170.73	NA	NA	NA	NA
11	Right of Way	Fire Ant (per 100 gallons)	1.5	10	0.27857	0.03538	0.00084	307.14	1328.21	249.45	307.14	1328.21	249.45	NA	NA	NA
						Mixer/Loader/Applicators										
12	Low Pressure/High Volume Turfgun	LCO Use on Turf (max)	8	5	NA	NA	0.00377	NA	294.32	NA	NA	294.32	NA	NA	NA	NA
	(ORETF WP Data Used)	LCO Use on Turf (max)	4	5	NA	NA	0.00189	NA	588.64	NA	NA	588.64	NA	NA	NA	NA
13a	Wettable Powder: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	NA	NA	0.01257	NA	88.30	NA	NA	88.30	NA	NA	NA	NA
13b	Liquid: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	1.14286	0.14514	0.00034	74.87	3237.50	73.17	74.87	3237.50	73.17	NA	NA	NA
14	Backpack Sprayer	Ornamentals (2% Soln)	0.02	40	0.02857	0.00363	0.00034	2994.60	3237.50	1555.66	2994.60	3237.50	1555.66	NA	NA	NA
15	Granule: Push Type Spreader	Turf	9	5	0.22500	0.02858	0.00482	380.27	230.22	143.40	380.27	230.22	143.40	NA	NA	NA
16	Handheld Fogger	Ornamentals/Mosquito	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	Power Backpack	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	Granule: Backpack	Ornamentals	9	1	NA	NA	0.00000	NA	2055555.56	NA	NA	2055555.56	NA	NA	NA	NA
19	Tree Injection	Ornamentals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Drench/Dipping	Forestry/Ornamentals	1.5	100	6.21429	0.78921	0.00257	13.77	431.67	13.34	13.77	431.67	13.34	NA	NA	NA
21	Sprinkler Can	Ornamentals (2% Soln)	0.02	10	0.08800	0.01118	0.00003	972.27	40894.74	949.69	972.27	40894.74	949.69	NA	NA	NA
						Flaggers										
22a	Flagger: Liquid Sprays	Corn	2	1200	0.37714	0.04790	0.01200	226.86	92.50	65.71	226.86	92.50	65.71	NA	NA	NA
		Vegetables	2	350	0.11000	0.01397	0.00350	777.82	317.14	225.29	777.82	317.14	225.29	NA	NA	NA
22b	Flagger: Granulars	Corn	2	1200	0.09600	0.01219	0.00514	891.25	215.83	173.76	891.25	215.83	173.76	NA	NA	NA

Vegetables	2	350	0.02800	0.00356	0.00150	3055.71	740.00	595.73	3055.71	740.00	595.73	NA	NA	NA

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Appendix A: Numerical Values For Carbaryl Occupational Handler Risk Assessment

Number	Scenario	Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	Dose (mg/kg/day): Potential Dermal	Dose (mg/kg/day): Absorbed Dermal	Dose (mg/kg/day): Inhalation	Short-Term MOEs: Dermal	Short-Term MOEs: Inhalation	Short-Term MOEs: Combined	Intermediate-Term MOEs: Dermal	Intermediate-Term MOEs: Inhalation	Intermediate-Term MOEs: Combined	Chronic MOEs: Dermal	Chronic MOEs: Inhalation	Chronic MOEs: Combined
					Mixer/Loaders											
1a	Dry Flowable: Aerial Chemigation	Corn (max)	3	1200	0.26286	0.28738	0.0052800	37.81	210.2	32.0	37.81	210.2	32.0	NA	NA	NA
		Corn (avg.)	1	1200	1.13143	0.14369	0.0026400	75.62	420.5	64.1	75.62	420.5	64.1	NA	NA	NA
		Stone Fruit	1	350	1.99000	0.12573	0.0023100	86.42	480.5	73.2	86.42	480.5	73.2	NA	NA	NA
		Vegetables	2	350	0.66000	0.08382	0.0015400	129.64	720.8	109.9	129.64	720.8	109.9	NA	NA	NA
1b	Dry flowable: Airblast	Citrus Trees (CA 24C)	12	40	0.45257	0.05748	0.0010560	189.05	1051.1	160.2	189.05	1051.1	160.2	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.30171	0.03832	0.0007040	283.58	1576.7	240.4	283.58	1576.7	240.4	NA	NA	NA
		Citrus Trees	5	40	0.18857	0.02395	0.0004400	453.73	2522.7	384.6	453.73	2522.7	384.6	NA	NA	NA
		Nut Trees	5	40	0.18857	0.02395	0.0004400	453.73	2522.7	384.6	453.73	2522.7	384.6	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.28286	0.03592	0.0006600	302.48	1681.8	256.4	302.48	1681.8	256.4	NA	NA	NA
		Pome & Stone Fruit	3	40	0.11314	0.01437	0.0002640	756.21	4204.5	640.9	756.21	4204.5	640.9	NA	NA	NA
		Grapes	2	40	0.07543	0.00958	0.0001760	1134.32	6306.8	961.4	1134.32	6306.8	961.4	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.04149	0.00527	0.0000968	2062.40	11466.9	1748.0	2062.40	11466.9	1748.0	NA	NA	NA
1c	Dry Flowable: Groundboom	Corn	2	200	0.37714	0.04790	0.0008800	226.86	1261.4	192.3	226.86	1261.4	192.3	NA	NA	NA
		Strawberries	2	80	0.15086	0.01916	0.0003520	567.16	3153.4	480.7	567.16	3153.4	480.7	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.30171	0.03832	0.0007040	283.58	1576.7	240.4	283.58	1576.7	240.4	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.15086	0.01916	0.0003520	567.16	3153.4	480.7	567.16	3153.4	480.7	NA	NA	NA
1d	Dry Flowable: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.03771	0.00479	0.0000880	2268.64	12613.6	1922.8	2268.64	12613.6	1922.8	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.01886	0.00239	0.0000440	4537.27	25227.3	3845.6	4537.27	25227.3	3845.6	NA	NA	NA
1e	Dry Flowable: Wide Area Aerial	Range/Forestry	1	1000	0.94286	0.11974	0.0022000	90.75	504.5	76.9	90.75	504.5	76.9	NA	NA	NA
2a	Granular: Aerial Application	APHIS/Grasshopper	0.5	3000	0.14786	0.01878	0.0072857	578.67	152.4	120.6	578.67	152.4	120.6	NA	NA	NA
		APHIS/Grasshopper	0.05	3000	0.00887	0.00113	0.0004371	9644.44	2539.2	2010.0	9644.44	2539.2	2010.0	NA	NA	NA
2b	Granular: Broadcast Spreader	Corn	2	200	0.03943	0.00501	0.0019429	2170.00	571.3	452.3	2170.00	571.3	452.3	NA	NA	NA
		Vegetables	2	80	0.01577	0.00200	0.0007771	5425.00	1428.3	1130.6	5425.00	1428.3	1130.6	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.02366	0.00300	0.0011657	3616.67	952.2	753.8	3616.67	952.2	753.8	NA	NA	NA
		Turf/Golf Courses 2	9	40	0.03549	0.00451	0.0017486	2411.11	634.8	502.5	2411.11	634.8	502.5	NA	NA	NA
3a	Liquids: Aerial / Chemigation	Corn (max)	1.5	1200	0.59143	0.07511	0.0061714	144.67	179.9	80.2	144.67	179.9	80.2	NA	NA	NA
		Corn (avg.)	1	1200	0.39429	0.05007	0.0041143	217.00	269.8	120.3	217.00	269.8	120.3	NA	NA	NA
		Stone Fruit (CA)	4	350	0.46000	0.05842	0.0048000	186.00	231.3	103.1	186.00	231.3	103.1	NA	NA	NA
		Stone Fruit	3	350	0.34500	0.04382	0.0036000	248.00	308.3	137.4	248.00	308.3	137.4	NA	NA	NA
		Vegetables	2	350	0.23000	0.02921	0.0024000	372.00	462.5	206.2	372.00	462.5	206.2	NA	NA	NA
3b	Liquids: Airblast	*Citrus Trees (CA 24C)*	12	40	0.15771	0.02003	0.0016457	542.50	674.5	300.7	542.50	674.5	300.7	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.10514	0.01335	0.0010971	813.75	1011.7	451.0	813.75	1011.7	451.0	NA	NA	NA
		Citrus Trees	5	40	0.06571	0.00835	0.0006857	1302.00	1618.8	721.6	1302.00	1618.8	721.6	NA	NA	NA
		Nut Trees	5	40	0.06571	0.00835	0.0006857	1302.00	1618.8	721.6	1302.00	1618.8	721.6	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.09857	0.01252	0.0010286	868.00	1079.2	481.1	868.00	1079.2	481.1	NA	NA	NA
		Pome & Stone Fruit	3	40	0.03943	0.00501	0.0004114	2170.00	2697.9	1202.7	2170.00	2697.9	1202.7	NA	NA	NA
		Grapes	2	40	0.02629	0.00334	0.0002743	3255.00	4046.9	1804.0	3255.00	4046.9	1804.0	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.01446	0.00184	0.0001509	5918.18	7358.0	3280.0	5918.18	7358.0	3280.0	NA	NA	NA
3c	Liquids: Groundboom	Corn	2	200	0.13143	0.01669	0.0013714	651.00	809.4	360.8	651.00	809.4	360.8	NA	NA	NA
		Strawberries	2	80	0.05257	0.00668	0.0005486	1627.50	2023.4	902.0	1627.50	2023.4	902.0	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.10514	0.01335	0.0010971	813.75	1011.7	451.0	813.75	1011.7	451.0	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.05257	0.00668	0.0005486	1627.50	2023.4	902.0	1627.50	2023.4	902.0	NA	NA	NA
3d	Liquids: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.01314	0.00167	0.0001371	6510.00	8093.8	3608.0	6510.00	8093.8	3608.0	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.00657	0.00083	0.0000686	13020.00	16187.5	7216.0	13020.00	16187.5	7216.0	NA	NA	NA
3e	Liquids: Wide Area Aerial	Range/Forestry	1	1000	0.32857	0.04173	0.0034286	260.40	323.8	144.3	260.40	323.8	144.3	NA	NA	NA
		Mosquito Adulticide	0.016	7500	0.03943	0.00501	0.0004114	2170.00	2697.9	1202.7	2170.00	2697.9	1202.7	NA	NA	NA
		Mosquito Adulticide	0.15	7500	0.36964	0.04694	0.0038571	231.47	287.8	128.3	231.47	287.8	128.3	NA	NA	NA
		APHIS Grasshopper	0.5	3000	0.49286	0.06259	0.0051429	173.60	215.8	96.2	173.60	215.8	96.2	NA	NA	NA
		APHIS Grasshopper	0.375	3000	0.36964	0.04694	0.0038571	231.47	287.8	128.3	231.47	287.8	128.3	NA	NA	NA
		APHIS Grasshopper	0.125	3000	0.12321	0.01565	0.0012857	694.40	863.3	384.9	694.40	863.3	384.9	NA	NA	NA
		APHIS Grasshopper (ULV)	0.5	3000	0.49286	0.06259	0.0051429	173.60	215.8	96.2	173.60	215.8	96.2	NA	NA	NA
		APHIS Grasshopper (ULV)	0.375	3000	0.36964	0.04694	0.0038571	231.47	287.8	128.3	231.47	287.8	128.3	NA	NA	NA
		APHIS Grasshopper (ULV)	0.125	3000	0.12321	0.01565	0.0012857	694.40	863.3	384.9	694.40	863.3	384.9	NA	NA	NA
3f	Liquids: Wide Area Ground	Mosquito Adulticide	0.016	3000	0.01577	0.00200	0.0001646	5425.00	6744.8	3006.7	5425.00	6744.8	3006.7	NA	NA	NA
		Mosquito Adulticide	*0.15*	*3000*	*0.14786*	*0.01878*	*0.0015429*	*578.67*	*719.4*	*320.7*	*578.67*	*719.4*	*320.7*	*NA*	*NA*	*NA*
4a	Wettable Powders: Airblast	Citrus Trees (CA 24C)	12	40	1.16571	0.14805	0.0589714	73.40	18.8	15.0	73.40	18.8	15.0	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.77714	0.09870	0.0393143	110.10	28.2	22.5	110.10	28.2	22.5	NA	NA	NA
		Citrus Trees	5	40	0.48571	0.06169	0.0245714	176.15	45.2	36.0	176.15	45.2	36.0	NA	NA	NA
		Nut Trees	5	40	0.48571	0.06169	0.0245714	176.15	45.2	36.0	176.15	45.2	36.0	NA	NA	NA

		Stone Fruit	7.5	40	0.72857	0.09253	0.0368571	117.44	30.1	24.0	117.44	30.1	24.0	NA	NA	NA
		Pome & Stone Fruit	3	40	0.29143	0.03701	0.0147429	293.59	75.3	59.9	293.59	75.3	59.9	NA	NA	NA
		Grapes	2	40	0.19429	0.02467	0.0098286	440.38	112.9	89.9	440.38	112.9	89.9	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.10686	0.01357	0.0054057	800.70	205.3	163.4	800.70	205.3	163.4	NA	NA	NA
4b	Wettable Powders: Groundboom	Corn	2	200	0.97143	0.12337	0.0491429	88.08	22.6	18.0	88.08	22.6	18.0	NA	NA	NA
		Strawberries	2	80	0.38857	0.04935	0.0196571	220.19	56.5	44.9	220.19	56.5	44.9	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.77714	0.09870	0.0393143	110.10	28.2	22.5	110.10	28.2	22.5	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.38857	0.04935	0.0196571	220.19	56.5	44.9	220.19	56.5	44.9	NA	NA	NA
4c	Wet. Powder: Low Press.; High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.09714	0.01234	0.0049143	880.76	225.9	179.8	880.76	225.9	179.8	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.04857	0.00617	0.0024571	1761.53	451.7	359.5	1761.53	451.7	359.5	NA	NA	NA
							Applicators									
5a	Aerial Liquid Application	Corn (max)	1.5	1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Corn (avg.)	1	1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Stone Fruit (CA)	4	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Stone Fruit	3	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Vegetables	2	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5b	Wide Area: Aerial	Range/Forestry	1	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Mosquito Adulticide	0.016	7500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Mosquito Adulticide	0.15	7500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.5	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.375	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.125	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.5	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.375	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.125	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5c	Aerial Granular Application	APHIS/Grasshopper	0.5	3300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS/Grasshopper	0.03	3300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6a	Airblast	Citrus Trees (CA 24C)	12	40	1.64571	0.20901	0.0061714	51.99	179.9	40.3	51.99	179.9	40.3	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	1.09714	0.13934	0.0041143	77.98	269.8	60.5	77.98	269.8	60.5	NA	NA	NA
		Citrus Trees	5	40	0.68571	0.08709	0.0025714	124.78	431.7	96.8	124.78	431.7	96.8	NA	NA	NA
		Nut Trees	5	40	0.68571	0.08709	0.0025714	124.78	431.7	96.8	124.78	431.7	96.8	NA	NA	NA
		Stone Fruit (olive)	7.5	40	1.02857	0.13063	0.0038571	83.18	287.8	64.5	83.18	287.8	64.5	NA	NA	NA
		Pome & Stone Fruit	3	40	0.41143	0.05225	0.0015429	207.96	719.4	161.3	207.96	719.4	161.3	NA	NA	NA
		Grapes	2	40	0.27429	0.03483	0.0010286	311.94	1079.2	242.0	311.94	1079.2	242.0	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.15086	0.01916	0.0005657	567.16	1962.1	440.0	567.16	1962.1	440.0	NA	NA	NA
6b	Wide Area: Ground Fogger	Mosquito Adulticide	0.016	3000	0.16457	0.02090	0.0006171	519.90	1798.6	403.3	519.90	1798.6	403.3	NA	NA	NA
	(Airblast as Surrogate)	Mosquito Adulticide	0.15	3000	1.54286	0.19594	0.0057857	55.46	191.9	43.0	55.46	191.9	43.0	NA	NA	NA
7	Groundboom	Corn	2	200	0.08000	0.01016	0.0008457	1069.50	1312.5	589.3	1069.50	1312.5	589.3	NA	NA	NA
		Strawberries	2	80	0.03200	0.00406	0.0003383	2673.75	3281.3	1473.3	2673.75	3281.3	1473.3	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.06400	0.00813	0.0006766	1336.88	1640.6	736.6	1336.88	1640.6	736.6	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.03200	0.00406	0.0003383	2673.75	3281.3	1473.3	2673.75	3281.3	1473.3	NA	NA	NA
8	Solid Broadcast Spreader	Corn	2	200	0.04114	0.00523	0.0013714	2079.58	809.4	582.6	2079.58	809.4	582.6	NA	NA	NA
		Strawberries	2	80	0.01646	0.00209	0.0005486	5198.96	2023.4	1456.5	5198.96	2023.4	1456.5	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.02469	0.00314	0.0008229	3465.97	1349.0	971.0	3465.97	1349.0	971.0	NA	NA	NA
		Turf/Golf Courses 2	9	40	0.03703	0.00470	0.0012343	2310.65	899.3	647.4	2310.65	899.3	647.4	NA	NA	NA
9	Aerosol Can	Lawn/Garden (lb ai/can)	0.01	2	0.02314	0.00294	0.0000743	3697.04	14942.3	2963.7	3697.04	14942.3	2963.7	NA	NA	NA
10	Trigger Pump Sprayer	Lawn/Garden (lb ai/can)	0.01	1	0.00193	0.00024	0.0000035	44364.44	315853.7	38900.5	44364.44	315853.7	38900.5	NA	NA	NA
11	Right of Way	Fire Ant (per 100 gallons)	1.5	10	0.08357	0.01061	0.0001671	1023.79	6641.0	887.0	1023.79	6641.0	887.0	NA	NA	NA
							Mixer/Loader/Applicators									
12	Low Pressure/High Volume Turfgun	LCO Use on Turf (max)	8	5	0.37143	0.04717	0.0007543	230.35	1471.6	199.2	230.35	1471.6	199.2	NA	NA	NA
	(ORETF WP Data Used)	LCO Use on Turf (max)	4	5	0.18571	0.02359	0.0003771	460.71	2943.2	398.4	460.71	2943.2	398.4	NA	NA	NA
13a	Wettable Powder: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	0.09829	0.01248	0.0025143	870.52	441.5	292.9	870.52	441.5	292.9	NA	NA	NA
13b	Liquid: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	0.00491	0.00062	0.0000686	17410.47	16187.5	8388.4	17410.47	16187.5	8388.4	NA	NA	NA
14	Backpack Sprayer	Ornamentals (2% Soln)	0.02	40	0.02857	0.00363	0.0000686	2994.60	16187.5	2527.1	2994.60	16187.5	2527.1	NA	NA	NA
15	Granule: Push Type Spreader	Turf	9	5	0.14143	0.01796	0.0009643	604.97	1151.1	396.6	604.97	1151.1	396.6	NA	NA	NA
16	Handheld Fogger	Ornamentals/Mosquito	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	Power Backpack	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	Granule: Backpack	Ornamentals	9	1	NA	NA	0.0000001	NA	#########	NA	NA	#########	NA	NA	NA	NA
19	Tree Injection	Ornamentals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Drench/Dipping	Forestry/Ornamentals	1.5	100	0.04929	0.00626	0.0005143	1736.00	2158.3	962.1	1736.00	2158.3	962.1	NA	NA	NA
21	Sprinkler Can	Ornamentals (2% Soln)	0.02	10	0.01723	0.00219	0.0000054	4966.17	204473.7	4848.4	4966.17	204473.7	4848.4	NA	NA	NA
							Flaggers									
22a	Flagger: Liquid Sprays	Corn	2	1200	0.41143	0.05225	0.0024000	207.96	462.5	143.5	207.96	462.5	143.5	NA	NA	NA
		Vegetables	2	350	0.12000	0.01524	0.0007000	713.00	1585.7	491.8	713.00	1585.7	491.8	NA	NA	NA
22b	Flagger: Granulars	Corn	2	1200	0.05486	0.00697	0.0010286	1559.69	1079.2	637.8	1559.69	1079.2	637.8	NA	NA	NA

Vegetables	2	350	0.01600	0.00205	0.0003000	5347.50	3700.0	2186.9	5347.50	3700.0	2186.9	NA	NA	NA

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Appendix A: Numerical Values For Carbaryl Occupational Handler Risk Assessment

Number	Scenario	Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	Dose (mg/kg/day): Potential Dermal	Dose (mg/kg/day): Absorbed Dermal	Dose (mg/kg/day): Inhalation	Short-Term MOEs: Dermal	Short-Term MOEs: Inhalation	Short-Term MOEs: Combined	Intermediate-Term MOEs: Dermal	Intermediate-Term MOEs: Inhalation	Intermediate-Term MOEs: Combined	Chronic MOEs: Dermal	Chronic MOEs: Inhalation	Chronic MOEs: Combined
					Mixer/Loaders											
1a	Dry Flowable: Aerial/Chemigation	Corn (max)	2	1200	1.61143	0.20465	0.00264	53.10	420.5	47.1	53.10	420.5	47.1	NA	NA	NA
		Corn (avg.)	1	1200	0.80571	0.10233	0.00132	106.19	840.9	94.3	106.19	840.9	94.3	NA	NA	NA
		Stone Fruit	1	350	0.70500	0.08954	0.00116	121.36	961.0	107.8	121.36	961.0	107.8	NA	NA	NA
		Vegetables	2	350	0.47000	0.05969	0.00077	182.04	1441.6	161.6	182.04	1441.6	161.6	NA	NA	NA
1b	Dry Flowable: Airblast	Citrus Trees (CA 24C)	12	40	0.32229	0.04093	0.00053	265.48	2102.3	235.7	265.48	2102.3	235.7	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.21486	0.02729	0.00035	398.22	3153.4	353.6	398.22	3153.4	353.6	NA	NA	NA
		Citrus Trees	5	40	0.13429	0.01705	0.00022	637.15	5045.5	565.7	637.15	5045.5	565.7	NA	NA	NA
		Nut Trees	5	40	0.13429	0.01705	0.00022	637.15	5045.5	565.7	637.15	5045.5	565.7	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.20143	0.02558	0.00033	424.77	3363.6	377.1	424.77	3363.6	377.1	NA	NA	NA
		Pome & Stone Fruit	3	40	0.08057	0.01023	0.00013	1061.91	8409.1	942.9	1061.91	8409.1	942.9	NA	NA	NA
		Grapes	2	40	0.05371	0.00682	0.00009	1592.87	12613.6	1414.3	1592.87	12613.6	1414.3	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.02954	0.00375	0.00005	2896.13	22933.9	2571.4	2896.13	22933.9	2571.4	NA	NA	NA
1c	Dry Flowable: Groundboom	Corn	2	200	0.26857	0.03411	0.00044	318.57	2522.7	282.9	318.57	2522.7	282.9	NA	NA	NA
		Strawberries	2	80	0.10743	0.01364	0.00018	796.44	6306.8	707.1	796.44	6306.8	707.1	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.21486	0.02729	0.00035	398.22	3153.4	353.6	398.22	3153.4	353.6	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.10743	0.01364	0.00018	796.44	6306.8	707.1	796.44	6306.8	707.1	NA	NA	NA
1d	Dry Flowable: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.02686	0.00341	0.00004	3185.74	25227.3	2828.6	3185.74	25227.3	2828.6	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.01343	0.00171	0.00002	6371.49	50454.5	5657.1	6371.49	50454.5	5657.1	NA	NA	NA
1e	Dry Flowable: Wide Area Aerial	Range/Forestry	1	1000	0.67143	0.08527	0.00110	127.43	1009.1	113.1	127.43	1009.1	113.1	NA	NA	NA
2a	Granular: Aerial Application	APHIS/Grasshopper	0.5	3000	0.07286	0.00925	0.00364	1174.35	304.7	241.9	1174.35	304.7	241.9	NA	NA	NA
		APHIS/Grasshopper	0.03	3000	0.00437	0.00056	0.00022	19572.55	5078.4	4032.2	19572.55	5078.4	4032.2	NA	NA	NA
2b	Granular: Broadcast Spreader	Corn	2	200	0.01943	0.00247	0.00097	4403.82	1142.6	907.2	4403.82	1142.6	907.2	NA	NA	NA
		Vegetables	2	80	0.00777	0.00099	0.00039	11009.56	2856.6	2268.1	11009.56	2856.6	2268.1	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.01166	0.00148	0.00058	7339.71	1904.4	1512.1	7339.71	1904.4	1512.1	NA	NA	NA
		Turf/Golf Courses 2	9	40	0.01749	0.00222	0.00087	4893.14	1269.6	1008.1	4893.14	1269.6	1008.1	NA	NA	NA
3a	Liquids: Aerial: Chemigation	Corn (max)	1.5	1200	0.43714	0.05552	0.00309	195.73	359.7	126.8	195.73	359.7	126.8	NA	NA	NA
		Corn (avg.)	1	1200	0.29143	0.03701	0.00206	293.59	539.6	190.1	293.59	539.6	190.1	NA	NA	NA
		Stone Fruit (CA)	4	350	0.34000	0.04318	0.00240	251.65	462.5	163.0	251.65	462.5	163.0	NA	NA	NA
		Stone Fruit	3	350	0.25500	0.03239	0.00180	335.53	616.7	217.3	335.53	616.7	217.3	NA	NA	NA
		Vegetables	2	350	0.17000	0.02159	0.00120	503.29	925.0	325.9	503.29	925.0	325.9	NA	NA	NA
3b	Liquids: Airblast	Citrus Trees (CA 24C)	12	40	0.11657	0.01480	0.00082	733.97	1349.0	475.3	733.97	1349.0	475.3	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.07771	0.00987	0.00055	1100.96	2023.4	713.0	1100.96	2023.4	713.0	NA	NA	NA
		Citrus Trees	5	40	0.04857	0.00617	0.00034	1761.53	3237.5	1140.8	1761.53	3237.5	1140.8	NA	NA	NA
		Nut Trees	5	40	0.04857	0.00617	0.00034	1761.53	3237.5	1140.8	1761.53	3237.5	1140.8	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.07286	0.00925	0.00051	1174.35	2158.3	760.5	1174.35	2158.3	760.5	NA	NA	NA
		Pome & Stone Fruit	3	40	0.02914	0.00370	0.00021	2935.88	5395.8	1901.4	2935.88	5395.8	1901.4	NA	NA	NA
		Grapes	2	40	0.01943	0.00247	0.00014	4403.82	8093.8	2852.0	4403.82	8093.8	2852.0	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.01069	0.00136	0.00008	8006.95	14715.9	5185.5	8006.95	14715.9	5185.5	NA	NA	NA
3c	Liquids: Groundboom	Corn	2	200	0.09714	0.01234	0.00069	880.76	1618.8	570.4	880.76	1618.8	570.4	NA	NA	NA
		Strawberries	2	80	0.03886	0.00493	0.00027	2201.91	4046.9	1426.0	2201.91	4046.9	1426.0	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.07771	0.00987	0.00055	1100.96	2023.4	713.0	1100.96	2023.4	713.0	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.03886	0.00493	0.00027	2201.91	4046.9	1426.0	2201.91	4046.9	1426.0	NA	NA	NA
3d	Liquids: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.00971	0.00123	0.00007	8807.65	16187.5	5704.1	8807.65	16187.5	5704.1	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.00486	0.00062	0.00003	17615.29	32375.0	11408.1	17615.29	32375.0	11408.1	NA	NA	NA
3e	Liquids: Wide Area Aerial	Range/Forestry	1	1000	0.24286	0.03084	0.00171	352.31	647.5	228.2	352.31	647.5	228.2	NA	NA	NA
		Mosquito Adulticide	0.016	7500	0.02914	0.00370	0.00021	2935.88	5395.8	1901.4	2935.88	5395.8	1901.4	NA	NA	NA
		Mosquito Adulticide	0.15	7500	0.27321	0.03470	0.00193	313.16	575.6	202.8	313.16	575.6	202.8	NA	NA	NA
		APHIS Grasshopper	0.5	3000	0.36429	0.04626	0.00257	234.87	431.7	152.1	234.87	431.7	152.1	NA	NA	NA
		APHIS Grasshopper	0.375	3000	0.27321	0.03470	0.00193	313.16	575.6	202.8	313.16	575.6	202.8	NA	NA	NA
		APHIS Grasshopper	0.125	3000	0.09107	0.01157	0.00064	939.48	1726.7	608.4	939.48	1726.7	608.4	NA	NA	NA
		APHIS Grasshopper (ULV)	0.5	3000	0.36429	0.04626	0.00257	234.87	431.7	152.1	234.87	431.7	152.1	NA	NA	NA
		APHIS Grasshopper (ULV)	0.375	3000	0.27321	0.03470	0.00193	313.16	575.6	202.8	313.16	575.6	202.8	NA	NA	NA
		APHIS Grasshopper (ULV)	0.125	3000	0.09107	0.01157	0.00064	939.48	1726.7	608.4	939.48	1726.7	608.4	NA	NA	NA
3f	Liquids: Wide Area Ground	Mosquito Adulticide	0.016	3000	0.01166	0.00148	0.00008	7339.71	13489.6	4753.4	7339.71	13489.6	4753.4	NA	NA	NA
		Mosquito Adulticide	0.15	3000	0.10929	0.01388	0.00077	782.90	1438.9	507.0	782.90	1438.9	507.0	NA	NA	NA
4a	Wettable Powders: Airblast	Citrus Trees (CA 24C)	12	40	0.89143	0.11321	0.02949	95.98	37.6	27.0	95.98	37.6	27.0	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.59429	0.07547	0.01966	143.97	56.5	40.6	143.97	56.5	40.6	NA	NA	NA
		Citrus Trees	5	40	0.37143	0.04717	0.01229	230.35	90.3	64.9	230.35	90.3	64.9	NA	NA	NA
		Nut Trees	5	40	0.37143	0.04717	0.01229	230.35	90.3	64.9	230.35	90.3	64.9	NA	NA	NA

		Stone Fruit (olive)	7.5	40	0.55714	0.07076	0.01843	153.57	60.2	43.3	153.57	60.2	43.3	NA	NA	NA
		Pome & Stone Fruit	3	40	0.22286	0.02830	0.00737	383.92	150.6	108.2	383.92	150.6	108.2	NA	NA	NA
		Grapes	2	40	0.14857	0.01887	0.00491	575.88	225.9	162.2	575.88	225.9	162.2	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.08171	0.01038	0.00270	1047.06	410.7	295.0	1047.06	410.7	295.0	NA	NA	NA
4b	Wettable Powders: Groundboom	Corn	2	200	0.74286	0.09434	0.02457	115.18	45.2	32.4	115.18	45.2	32.4	NA	NA	NA
		Strawberries	2	80	0.29714	0.03774	0.00983	287.94	112.9	81.1	287.94	112.9	81.1	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.59429	0.07547	0.01966	143.97	56.5	40.6	143.97	56.5	40.6	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.29714	0.03774	0.00983	287.94	112.9	81.1	287.94	112.9	81.1	NA	NA	NA
4c	Wet Powdr Low Press /High Vol Turfgun	LCO Use on Turf (max)	8	5	0.07429	0.00943	0.00246	1151.77	451.7	324.5	1151.77	451.7	324.5	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.03714	0.00472	0.00123	2303.54	903.5	649.0	2303.54	903.5	649.0	NA	NA	NA
							Applicators									
[illegible]	[illegible]	Corn (max)	[illegible]	1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Corn (avg.)	1	1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Stone Fruit (CA)	4	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Stone Fruit	3	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Vegetables	2	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5b	Wide Area: Aerial	Range/Forestry	1	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Mosquito Adulticide	0.016	7500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Mosquito Adulticide	0.15	7500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.5	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.375	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper	0.125	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.5	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.375	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS Grasshopper (ULV)	0.125	3000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5c	Aerial Granular Application	APHIS/Grasshopper	0.5	3300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		APHIS/Grasshopper	0.03	3300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6a	Airblast	Citrus Trees (CA 24C)	12	40	0.89143	0.11321	0.00309	95.98	359.7	75.8	95.98	359.7	75.8	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.59429	0.07547	0.00206	143.97	539.6	113.6	143.97	539.6	113.6	NA	NA	NA
		Citrus Trees	5	40	0.37143	0.04717	0.00129	230.35	863.3	181.8	230.35	863.3	181.8	NA	NA	NA
		Nut Trees	5	40	0.37143	0.04717	0.00129	230.35	863.3	181.8	230.35	863.3	181.8	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.55714	0.07076	0.00193	153.57	575.6	121.2	153.57	575.6	121.2	NA	NA	NA
		Pome & Stone Fruit	3	40	0.22286	0.02830	0.00077	383.92	1438.9	303.1	383.92	1438.9	303.1	NA	NA	NA
		Grapes	2	40	0.14857	0.01887	0.00051	575.88	2158.3	454.6	575.88	2158.3	454.6	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.08171	0.01038	0.00028	1047.06	3924.2	826.5	1047.06	3924.2	826.5	NA	NA	NA
6b	Wide Area: Ground Fogger	Mosquito Adulticide	0.016	3000	0.08914	0.01132	0.00031	959.81	3597.2	757.7	959.81	3597.2	757.7	NA	NA	NA
	(Airblast as Surrogate)	Mosquito Adulticide	0.15	3000	0.83571	0.10614	0.00289	102.38	383.7	80.8	102.38	383.7	80.8	NA	NA	NA
7	Groundboom	Corn	2	200	0.06286	0.00798	0.00042	1361.18	2625.0	896.4	1361.18	2625.0	896.4	NA	NA	NA
		Strawberries	2	80	0.02514	0.00319	0.00017	3402.95	6562.5	2240.9	3402.95	6562.5	2240.9	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.05029	0.00639	0.00034	1701.48	3281.3	1120.5	1701.48	3281.3	1120.5	NA	NA	NA
		Turf/Golf Courses 2	1	40	0.02514	0.00319	0.00017	3402.95	6562.5	2240.9	3402.95	6562.5	2240.9	NA	NA	NA
8	Solid Broadcast Spreader	Corn	2	200	0.02400	0.00305	0.00069	3565.00	1618.8	1113.3	3565.00	1618.8	1113.3	NA	NA	NA
		Strawberries	2	80	0.00960	0.00122	0.00027	8912.50	4046.9	2783.1	8912.50	4046.9	2783.1	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.01440	0.00183	0.00041	5941.67	2697.9	1855.4	5941.67	2697.9	1855.4	NA	NA	NA
		Turf/Golf Courses 2	9	40	0.02160	0.00274	0.00062	3961.11	1798.6	1237.0	3961.11	1798.6	1237.0	NA	NA	NA
9	Aerosol Can	Lawn/Garden (lb ai/can)	0.01	2	0.01829	0.00232	0.00004	4679.06	29884.6	4045.6	4679.06	29884.6	4045.6	NA	NA	NA
10	Trigger Pump Sprayer	Lawn/Garden (lb ai/can)	0.01	1	NA	NA	0.00000	NA	631707.3	NA	NA	631707.3	NA	NA	NA	NA
11	Right of Way	Fire Ant (per 100 gallons)	1.5	10	0.06214	0.00789	0.00008	1376.83	13282.1	1247.5	1376.83	13282.1	1247.5	NA	NA	NA
							Mixer/Loader/Applicators									
12	Low Pressure/High Volume Turfgun	LCO Use on Turf (max)	8	5	0.20571	0.02613	0.00038	415.92	2943.2	364.4	415.92	2943.2	364.4	NA	NA	NA
	(ORETF WP Data Used)	LCO Use on Turf (max)	4	5	0.10286	0.01306	0.00019	831.83	5886.4	728.8	831.83	5886.4	728.8	NA	NA	NA
13a	Wettable Powder: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	0.07086	0.00900	0.00126	1207.50	883.0	510.0	1207.50	883.0	510.0	NA	NA	NA
13b	Liquid: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	0.00423	0.00054	0.00003	20233.78	32375.0	12451.7	20233.78	32375.0	12451.7	NA	NA	NA
14	Backpack Sprayer	Ornamentals (2% Soln)	0.02	40	0.01829	0.00232	0.00003	4679.06	32375.0	4088.2	4679.06	32375.0	4088.2	NA	NA	NA
15	Granule: Push Type Spreader	Turf	9	5	0.07071	0.00898	0.00048	1209.94	2302.2	793.1	1209.94	2302.2	793.1	NA	NA	NA
16	Handheld Fogger	Ornamentals/Mosquito	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	Power Backpack	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	Granule: Backpack	Ornamentals	9	1	0.01279	0.00162	0.00000	6688.11	20555555.6	6685.9	6688.11	20555555.6	6685.9	NA	NA	NA
19	Tree Injection	Ornamentals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Drench/Dipping	Forestry/Ornamentals	1.5	100	0.03643	0.00463	0.00026	2348.71	4316.7	1521.1	2348.71	4316.7	1521.1	NA	NA	NA
21	Sprinkler Can	Ornamentals (2% Soln)	0.02	10	0.01320	0.00168	0.00000	6481.82	408947.4	6380.7	6481.82	408947.4	6380.7	NA	NA	NA
							Flaggers									
22a	Flagger: Liquid Sprays	Corn	2	1200	0.37714	0.04790	0.00120	226.86	925.0	182.2	226.86	925.0	182.2	NA	NA	NA
		Vegetables	2	350	0.11000	0.01397	0.00035	777.82	3171.4	624.6	777.82	3171.4	624.6	NA	NA	NA
22b	Flagger: Granulars	Corn	2	1200	0.03429	0.00435	0.00051	2495.50	2158.3	1157.4	2495.50	2158.3	1157.4	NA	NA	NA

Vegetables	2	350	0.01000	0.00127	0.00015	8556.00	7400.0	3968.1	8556.00	7400.0	3968.1	NA	NA	NA

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Appendix A. Numerical Values For Carbaryl Occupational Handler Risk Assessment

Number	Scenario	Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	Dose (mg/kg/day): Potential Dermal	Dose (mg/kg/day): Absorbed Dermal	Dose (mg/kg/day): Inhalation	Short-Term MOEs: Dermal	Short-Term MOEs: Inhalation	Short-Term MOEs: Combined	Intermediate-Term MOEs: Dermal	Intermediate-Term MOEs: Inhalation	Intermediate-Term MOEs: Combined	Chronic MOEs: Dermal	Chronic MOEs: Inhalation	Chronic MOEs: Combined
						Mixer/Loaders										
1a	Dry Flowable, Aerial/Chemigation	Corn (max)	2	1200	0.0446	0.0057	0.0005	1919.62	2102.3	1003.4	1919.62	2102.3	1003.4	NA	NA	NA
		Corn (avg.)	1	1200	0.0223	0.0028	0.0003	3839.23	4204.5	2006.8	3839.23	4204.5	2006.8	NA	NA	NA
		Stone Fruit	4	350	0.0195	0.0025	0.0002	4387.69	4805.2	2293.5	4387.69	4805.2	2293.5	NA	NA	NA
		Vegetables	2	350	0.0130	0.0017	0.0002	6581.54	7207.8	3440.2	6581.54	7207.8	3440.2	NA	NA	NA
1b	Dry flowable: Airblast	Citrus Trees (CA 24C)	12	40	0.0089	0.0011	0.0001	9598.08	10511.4	5017.0	9598.08	10511.4	5017.0	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.0059	0.0008	0.0001	14397.12	15767.0	7525.5	14397.12	15767.0	7525.5	NA	NA	NA
		Citrus Trees	5	40	0.0037	0.0005	0.0000	23035.38	25227.3	12040.8	23035.38	25227.3	12040.8	NA	NA	NA
		Nut Trees	5	40	0.0037	0.0005	0.0000	23035.38	25227.3	12040.8	23035.38	25227.3	12040.8	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.0056	0.0007	0.0001	15356.92	16818.2	8027.2	15356.92	16818.2	8027.2	NA	NA	NA
		Pome & Stone Fruit	3	40	0.0022	0.0003	0.0000	38392.31	42045.5	20068.0	38392.31	42045.5	20068.0	NA	NA	NA
		Grapes	2	40	0.0015	0.0002	0.0000	57588.46	63068.2	30101.9	57588.46	63068.2	30101.9	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.0008	0.0001	0.0000	104706.29	114669.4	54730.8	104706.29	114669.4	54730.8	NA	NA	NA
1c	Dry Flowable: Groundboom	Corn	2	200	0.0074	0.0009	0.0001	11517.69	12613.6	6020.4	11517.69	12613.6	6020.4	NA	NA	NA
		Strawberries	2	80	0.0030	0.0004	0.0000	28794.23	31534.1	15051.0	28794.23	31534.1	15051.0	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.0059	0.0008	0.0001	14397.12	15767.0	7525.5	14397.12	15767.0	7525.5	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.0030	0.0004	0.0000	28794.23	31534.1	15051.0	28794.23	31534.1	15051.0	NA	NA	NA
1d	Dry Flowable: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.0007	0.0001	0.0000	115176.92	126136.4	60203.9	115176.92	126136.4	60203.9	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.0004	0.0000	0.0000	230353.85	252272.7	120407.8	230353.85	252272.7	120407.8	NA	NA	NA
1e	Dry Flowable: Wide Area Aerial	Range/Forestry	1	1000	0.0186	0.0024	0.0002	4607.08	5045.5	2408.2	4607.08	5045.5	2408.2	NA	NA	NA
2a	Granular: Aerial Application	APHIS/Grasshopper	0.5	3000	0.0036	0.0005	0.0007	23766.67	1523.5	1431.7	23766.67	1523.5	1431.7	NA	NA	NA
		APHIS/Grasshopper	0.03	3000	0.0002	0.0000	0.0000	396111.11	25392.2	23862.5	396111.11	25392.2	23862.5	NA	NA	NA
2b	Granular: Broadcast Spreader	Corn	2	200	0.0010	0.0001	0.0002	89125.00	5713.2	5369.1	89125.00	5713.2	5369.1	NA	NA	NA
		Vegetables	2	80	0.0004	0.0000	0.0001	222812.50	14283.1	13422.6	222812.50	14283.1	13422.6	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.0006	0.0001	0.0001	148541.67	9522.1	8948.4	148541.67	9522.1	8948.4	NA	NA	NA
		Turf/Golf Courses 2	9	40	0.0009	0.0001	0.0002	99027.78	6348.0	5965.6	99027.78	6348.0	5965.6	NA	NA	NA
3a	Liquids: Aerial/Chemigation	Corn (max)	1.5	1200	0.2211	0.0281	0.0021	386.90	520.1	221.9	386.90	520.1	221.9	NA	NA	NA
		Corn (avg.)	1	1200	0.1474	0.0187	0.0014	580.35	780.1	332.8	580.35	780.1	332.8	NA	NA	NA
		Stone Fruit (CA)	4	350	0.1720	0.0218	0.0017	497.44	668.7	285.2	497.44	668.7	285.2	NA	NA	NA
		Stone Fruit	3	350	0.1290	0.0164	0.0012	663.26	891.6	380.3	663.26	891.6	380.3	NA	NA	NA
		Vegetables	2	350	0.0860	0.0109	0.0008	994.88	1337.3	570.5	994.88	1337.3	570.5	NA	NA	NA
3b	Liquids: Airblast	Citrus Trees (CA 24C)	12	40	0.0590	0.0075	0.0006	1450.87	1950.3	832.0	1450.87	1950.3	832.0	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.0393	0.0050	0.0004	2176.31	2925.5	1247.9	2176.31	2925.5	1247.9	NA	NA	NA
		Citrus Trees	5	40	0.0246	0.0031	0.0002	3482.09	4680.7	1996.7	3482.09	4680.7	1996.7	NA	NA	NA
		Nut Trees	5	40	0.0246	0.0031	0.0002	3482.09	4680.7	1996.7	3482.09	4680.7	1996.7	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.0369	0.0047	0.0004	2321.40	3120.5	1331.1	2321.40	3120.5	1331.1	NA	NA	NA
		Pome & Stone Fruit	3	40	0.0147	0.0019	0.0001	5803.49	7801.2	3327.8	5803.49	7801.2	3327.8	NA	NA	NA
		Grapes	2	40	0.0098	0.0012	0.0001	8705.23	11701.8	4991.8	8705.23	11701.8	4991.8	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.0054	0.0007	0.0001	15827.70	21276.0	9075.9	15827.70	21276.0	9075.9	NA	NA	NA
3c	Liquids: Groundboom	Corn	2	200	0.0491	0.0062	0.0005	1741.05	2340.4	998.4	1741.05	2340.4	998.4	NA	NA	NA
		Strawberries	2	80	0.0197	0.0025	0.0002	4352.62	5850.9	2495.9	4352.62	5850.9	2495.9	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.0393	0.0050	0.0004	2176.31	2925.5	1247.9	2176.31	2925.5	1247.9	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.0197	0.0025	0.0002	4352.62	5850.9	2495.9	4352.62	5850.9	2495.9	NA	NA	NA
3d	Liquids: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.0049	0.0006	0.0000	17410.47	23403.6	9983.5	17410.47	23403.6	9983.5	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.0025	0.0003	0.0000	34820.93	46807.2	19967.0	34820.93	46807.2	19967.0	NA	NA	NA
3e	Liquids: Wide Area Aerial	Range/Forestry	1	1000	0.1229	0.0156	0.0012	696.42	936.1	399.3	696.42	936.1	399.3	NA	NA	NA
		Mosquito Adulticide	0.016	7500	0.0147	0.0019	0.0001	5803.49	7801.2	3327.8	5803.49	7801.2	3327.8	NA	NA	NA
		Mosquito Adulticide	0.15	7500	0.1382	0.0176	0.0013	619.04	832.1	355.0	619.04	832.1	355.0	NA	NA	NA
		APHIS Grasshopper	0.5	3000	0.1843	0.0234	0.0018	464.28	624.1	266.2	464.28	624.1	266.2	NA	NA	NA
		APHIS Grasshopper	0.375	3000	0.1382	0.0176	0.0013	619.04	832.1	355.0	619.04	832.1	355.0	NA	NA	NA
		APHIS Grasshopper	0.125	3000	0.0461	0.0059	0.0004	1857.12	2496.4	1064.9	1857.12	2496.4	1064.9	NA	NA	NA
		APHIS Grasshopper (ULV)	0.5	3000	0.0244	0.0031	0.0002	3502.46	6906.7	2324.0	3502.46	6906.7	2324.0	NA	NA	NA
		APHIS Grasshopper (ULV)	0.375	3000	0.0183	0.0023	0.0001	4669.94	9208.9	3098.6	4669.94	9208.9	3098.6	NA	NA	NA
		APHIS Grasshopper (ULV)	0.125	3000	0.0061	0.0008	0.0000	14009.82	27626.7	9295.8	14009.82	27626.7	9295.8	NA	NA	NA
3f	Liquids: Wide Area Ground	Mosquito Adulticide	0.016	3000	0.0059	0.0007	0.0001	14508.72	19503.0	8319.6	14508.72	19503.0	8319.6	NA	NA	NA
		Mosquito Adulticide	0.15	3000	0.0553	0.0070	0.0005	1547.60	2080.3	887.4	1547.60	2080.3	887.4	NA	NA	NA
4a	Wettable Powders: Airblast	Citrus Trees (CA 24C)	12	40	0.0672	0.0085	0.0016	1273.21	674.5	440.9	1273.21	674.5	440.9	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.0448	0.0057	0.0011	1909.82	1011.7	661.4	1909.82	1011.7	661.4	NA	NA	NA
		Citrus Trees	5	40	0.0280	0.0036	0.0007	3055.71	1618.8	1058.2	3055.71	1618.8	1058.2	NA	NA	NA
		Nut Trees	5	40	0.0280	0.0036	0.0007	3055.71	1618.8	1058.2	3055.71	1618.8	1058.2	NA	NA	NA

		Stone Fruit (olive)	7.5	40	0.0420	0.0053	0.0010	2037.14	1079.2	705.5	2037.14	1079.2	705.5	NA	NA	NA
		Pome & Stone Fruit	3	40	0.0168	0.0021	0.0004	5092.86	2697.9	1763.6	5092.86	2697.9	1763.6	NA	NA	NA
		Grapes	2	40	0.0112	0.0014	0.0003	7639.29	4046.9	2645.5	7639.29	4046.9	2645.5	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.0062	0.0008	0.0002	13889.61	7358.0	4809.9	13889.61	7358.0	4809.9	NA	NA	NA
4b	Wettable Powders, Groundboom	Corn	2	200	0.0560	0.0071	0.0014	1527.86	809.4	529.1	1527.86	809.4	529.1	NA	NA	NA
		Strawberries	2	80	0.0224	0.0028	0.0005	3819.64	2023.4	1322.7	3819.64	2023.4	1322.7	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.0448	0.0057	0.0011	1909.82	1011.7	661.4	1909.82	1011.7	661.4	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.0224	0.0028	0.0005	3819.64	2023.4	1322.7	3819.64	2023.4	1322.7	NA	NA	NA
4c	Wet. Powdr - Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	0.0056	0.0007	0.0001	15278.57	8093.8	5290.9	15278.57	8093.8	5290.9	NA	NA	NA
		LCO Use on Turf (max)	4	5	0.0028	0.0004	0.0001	30557.14	16187.5	10581.8	30557.14	16187.5	10581.8	NA	NA	NA
						Applicators										
5a	Aerial Liquid Application	Citrus (max)	1.5	1000	0.0114	0.0160	0.0017	604.97	634.8	309.8	604.97	634.8	309.8	NA	NA	NA
		Corn (avg.)	1	1200	0.0943	0.0120	0.0012	907.45	952.2	464.6	907.45	952.2	464.6	NA	NA	NA
		Stone Fruit (CA)	4	350	0.1100	0.0140	0.0014	777.82	816.2	398.3	777.82	816.2	398.3	NA	NA	NA
		Stone Fruit	3	350	0.0825	0.0105	0.0010	1037.09	1088.2	531.0	1037.09	1088.2	531.0	NA	NA	NA
		Vegetables	2	350	0.0550	0.0070	0.0007	1555.64	1632.4	796.5	1555.64	1632.4	796.5	NA	NA	NA
5b	Wide Area: Aerial	Range/Forestry	1	1000	0.0786	0.0100	0.0010	1088.95	1142.6	557.6	1088.95	1142.6	557.6	NA	NA	NA
		Mosquito Adulticide	0.016	7500	0.0094	0.0012	0.0001	9074.55	9522.1	4646.5	9074.55	9522.1	4646.5	NA	NA	NA
		Mosquito Adulticide	0.15	7500	0.0884	0.0112	0.0011	967.95	1015.7	495.6	967.95	1015.7	495.6	NA	NA	NA
		APHIS Grasshopper	0.5	3000	0.1179	0.0150	0.0015	725.96	761.8	371.7	725.96	761.8	371.7	NA	NA	NA
		APHIS Grasshopper	0.375	3000	0.0884	0.0112	0.0011	967.95	1015.7	495.6	967.95	1015.7	495.6	NA	NA	NA
		APHIS Grasshopper	0.125	3000	0.0295	0.0037	0.0004	2903.85	3047.1	1486.9	2903.85	3047.1	1486.9	NA	NA	NA
		APHIS Grasshopper (ULV)	0.5	3000	0.0216	0.0027	0.0002	3953.27	4543.9	2114.0	3953.27	4543.9	2114.0	NA	NA	NA
		APHIS Grasshopper (ULV)	0.375	3000	0.0162	0.0021	0.0002	5271.02	6058.5	2818.7	5271.02	6058.5	2818.7	NA	NA	NA
		APHIS Grasshopper (ULV)	0.125	3000	0.0054	0.0007	0.0001	15813.07	18175.4	8456.1	15813.07	18175.4	8456.1	NA	NA	NA
5c	Aerial Granular Application	APHIS/Grasshopper	0.5	3300	0.0401	0.0051	0.0306	2135.19	36.2	35.6	2135.19	36.2	35.6	NA	NA	NA
		APHIS/Grasshopper	0.03	3300	0.0024	0.0003	0.0018	35586.45	603.7	593.7	35586.45	603.7	593.7	NA	NA	NA
6a	Airblast	Citrus Trees (CA 24C)	12	40	0.1303	0.0165	0.0006	656.71	1798.6	481.1	656.71	1798.6	481.1	NA	NA	NA
		Citrus Trees (FL 24C)	8	40	0.0869	0.0110	0.0004	985.07	2697.9	721.6	985.07	2697.9	721.6	NA	NA	NA
		Citrus Trees	5	40	0.0543	0.0069	0.0003	1576.11	4316.7	1154.6	1576.11	4316.7	1154.6	NA	NA	NA
		Nut Trees	5	40	0.0543	0.0069	0.0003	1576.11	4316.7	1154.6	1576.11	4316.7	1154.6	NA	NA	NA
		Stone Fruit (olive)	7.5	40	0.0814	0.0103	0.0004	1050.74	2877.8	769.7	1050.74	2877.8	769.7	NA	NA	NA
		Pome & Stone Fruit	3	40	0.0326	0.0041	0.0002	2626.84	7194.4	1924.3	2626.84	7194.4	1924.3	NA	NA	NA
		Grapes	2	40	0.0217	0.0028	0.0001	3940.26	10791.7	2886.4	3940.26	10791.7	2886.4	NA	NA	NA
		Stone Fruit (avg.)	1.1	40	0.0119	0.0015	0.0001	7164.11	19621.2	5248.0	7164.11	19621.2	5248.0	NA	NA	NA
6b	Wide Area: Ground Fogger	Mosquito Adulticide	0.016	3000	0.0130	0.0017	0.0001	6567.11	17986.1	4810.6	6567.11	17986.1	4810.6	NA	NA	NA
	(Airblast as Surrogate)	Mosquito Adulticide	0.15	3000	0.1221	0.0155	0.0006	700.49	1918.5	513.1	700.49	1918.5	513.1	NA	NA	NA
7	Groundboom	Corn	2	200	0.0291	0.0037	0.0002	2935.88	4517.4	1779.4	2935.88	4517.4	1779.4	NA	NA	NA
		Strawberries	2	80	0.0117	0.0015	0.0001	7339.71	11293.6	4448.6	7339.71	11293.6	4448.6	NA	NA	NA
		Turf/Golf Courses 1	8	40	0.0233	0.0030	0.0002	3669.85	5646.8	2224.3	3669.85	5646.8	2224.3	NA	NA	NA
		Turf/Golf Courses 2	4	40	0.0117	0.0015	0.0001	7339.71	11293.6	4448.6	7339.71	11293.6	4448.6	NA	NA	NA
8	Solid Broadcast Spreader	Corn	2	200	0.0114	0.0015	0.0013	7486.50	883.0	789.8	7486.50	883.0	789.8	NA	NA	NA
		Strawberries	2	80	0.0046	0.0006	0.0005	18716.25	2207.4	1974.5	18716.25	2207.4	1974.5	NA	NA	NA
		Turf/Golf Courses 1	6	40	0.0069	0.0009	0.0008	12477.50	1471.6	1316.3	12477.50	1471.6	1316.3	NA	NA	NA
		Turf/Golf Courses 2	9	40	0.0103	0.0013	0.0011	8318.33	981.1	877.6	8318.33	981.1	877.6	NA	NA	NA
9	Aerosol Can	Lawn/Garden (lb ai/can)	0.01	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	Trigger Pump Sprayer	Lawn/Garden (lb ai/can)	0.01	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	Right of Way	Fire Ant (per 100 gallons)	1.5	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
						Mixer/Loader/Applicators										
12	Low Pressure/High Volume Turfgun	LCO Use on Turf (max)	8	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	(ORETF WP Data Used)	LCO Use on Turf (max)	4	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13a	Wettable Powder: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13b	Liquid: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	Backpack Sprayer	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	Granule, Push Type Spreader	Turf	9	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	Handheld Fogger	Ornamentals/Mosquito	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	Power Backpack	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	Granule, Backpack	Ornamentals	9	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19	Tree Injection	Ornamentals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Drench/Dipping	Forestry/Ornamentals	1.5	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21	Sprinkler Can	Ornamentals (2% Soln)	0.02	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
						Flaggers										
22a	Flagger: Liquid Sprays	Corn	2	1200	0.0754	0.0096	0.0002	1134.32	4625.0	910.9	1134.32	4625.0	910.9	NA	NA	NA
		Vegetables	2	350	0.0220	0.0028	0.0001	3889.09	15857.1	3123.1	3889.09	15857.1	3123.1	NA	NA	NA
22b	Flagger: Granulars	Corn	2	1200	0.0019	0.0002	0.0001	44562.50	10791.7	8687.8	44562.50	10791.7	8687.8	NA	NA	NA

Vegetables	2	350	0.0005	0.0001	0.0000	152785.71	37000.0	29786.6	152785.71	37000.0	29786.6	NA	NA	NA

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Appendix A. Numerical Values For Carbaryl Occupational Handler Risk Assessment

Number	Scenario	Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	Baseline	Single Layer, Gloves & No Respirator	Single Layer, Gloves & PF5 Respirator	Single Layer, Gloves & PF10 Respirator	Double Layer, Gloves & No Respirator	Double Layer, Gloves & PF5 Respirator	Double Layer, Gloves & PF10 Respirator	Eng. Controls
						Mixer/Loaders						
1a	Dry Flowable: Aerial/Chemigation	Corn (max)	2	1200	19.9	19.9	32.0	34.7	23.5	42.4	47.1	1003.4
		Corn (avg.)	1	1200	39.8	39.8	64.1	69.4	46.9	84.8	94.3	2006.8
		Stone Fruit	3	350	45.5	45.5	73.2	79.3	53.6	96.9	107.8	2293.5
		Vegetables	2	350	68.3	68.3	109.9	118.9	80.4	145.3	161.6	3440.2
1b	Dry Flowable: Airblast	Citrus Trees (CA 24C)	12	40	99.5	99.5	160.2	173.5	117.3	211.9	235.7	5017.0
		Citrus Trees (FL 24C)	4	40	149.3	149.3	240.4	260.2	176.0	317.9	353.6	7525.5
		Citrus Trees	5	40	238.9	238.9	384.6	416.3	281.6	508.7	565.7	12040.8
		Nut Trees	5	40	238.9	238.9	384.6	416.3	281.6	508.7	565.7	12040.8
		Stone Fruit (olive)	7.5	40	159.3	159.3	256.4	277.5	187.7	339.1	377.1	8027.2
		Pome & Stone Fruit	3	40	398.2	398.2	640.9	693.8	469.3	847.8	942.9	20068.0
		Grapes	2	40	597.2	597.2	961.4	1040.7	703.9	1271.7	1414.3	30101.9
		Stone Fruit (avg.)	1.1	40	1085.9	1085.9	1748.0	1892.2	1279.9	2312.2	2571.4	54730.8
1c	Dry Flowable: Groundboom	Corn	2	200	119.4	119.4	192.3	208.1	140.8	254.3	282.9	6020.4
		Strawberries	2	80	298.6	298.6	480.7	520.4	352.0	635.8	707.1	15051.0
		Turf/Golf Courses 1	8	40	149.3	149.3	240.4	260.2	176.0	317.9	353.6	7525.5
		Turf/Golf Courses 2	4	40	298.6	298.6	480.7	520.4	352.0	635.8	707.1	15051.0
1d	Dry Flowable: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	1194.5	1194.5	1922.8	2081.5	1407.9	2543.4	2828.6	60203.9
		LCO Use on Turf (max)	4	5	2388.9	2388.9	3845.6	4162.9	2815.7	5086.8	5657.1	120407.8
1e	Dry Flowable: Wide Area Aerial	Range/Forestry	1	1000	47.8	47.8	76.9	83.3	56.3	101.7	113.1	2408.2
2a	Granular: Aerial Application	APHIS/Grasshopper	0.5	3000	28.6	28.9	120.6	199.6	29.7	134.9	241.9	1431.7
		APHIS/Grasshopper	0.03	3000	477.2	482.4	2010.0	3326.7	495.3	2247.6	4032.2	23862.5
2b	Granular: Broadcast Spreader	Corn	2	200	107.4	108.6	452.3	748.5	111.4	505.7	907.2	5369.1
		Vegetables	2	80	268.5	271.4	1130.6	1871.3	278.4	1264.3	2268.1	13422.6
		Turf/Golf Courses 1	8	40	179.0	180.9	753.8	1247.5	185.6	842.9	1512.1	8948.4
		Turf/Golf Courses 2	3	40	119.3	120.6	502.5	831.7	123.7	561.9	1008.1	5965.6
3a	Liquids: Aerial / Chemigation	Corn (max)	1.5	1200	1.1	28.8	80.2	103.2	30.4	93.7	126.8	221.9
		Corn (avg.)	1	1200	1.7	43.2	120.3	154.8	45.6	140.6	190.1	332.8
		Stone Fruit (CA)	4	350	1.4	37.0	103.1	132.7	39.1	120.5	163.0	285.2
		Stone Fruit	3	350	1.9	49.4	137.4	176.9	52.1	160.7	217.3	380.3
		Vegetables	2	350	2.9	74.1	206.2	265.3	78.1	241.0	325.9	570.5
3b	Liquids: Airblast	Citrus Trees (CA 24C)	12	40	4.2	108.0	300.7	386.9	114.0	351.5	475.3	832.0
		Citrus Trees (FL 24C)	8	40	6.3	162.0	451.0	580.4	170.9	527.2	713.0	1247.9
		Citrus Trees	5	40	10.0	259.3	721.6	928.6	273.5	843.6	1140.8	1996.7
		Nut Trees	5	40	10.0	259.3	721.6	928.6	273.5	843.6	1140.8	1996.7
		Stone Fruit (olive)	7.5	40	6.7	172.9	481.1	619.0	182.3	562.4	760.5	1331.1
		Pome & Stone Fruit	3	40	16.7	432.1	1202.7	1547.6	455.8	1405.9	1901.4	3327.8
		Grapes	2	40	25.0	648.2	1804.0	2321.4	683.7	2108.9	2852.0	4991.8
		Stone Fruit (avg.)	1.1	40	45.5	1178.5	3280.0	4220.6	1243.1	3834.4	5185.5	9075.9
3c	Liquids: Groundboom	Corn	2	200	5.0	129.6	360.8	464.3	136.7	421.8	570.4	998.4
		Strawberries	2	80	12.5	324.1	902.0	1160.7	341.9	1054.5	1426.0	2495.9
		Turf/Golf Courses 1	8	40	6.3	162.0	451.0	580.4	170.9	527.2	713.0	1247.9
		Turf/Golf Courses 2	4	40	12.5	324.1	902.0	1160.7	341.9	1054.5	1426.0	2495.9
3d	Liquids: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	50.0	1296.4	3608.0	4642.8	1367.4	4217.8	5704.1	9983.5
		LCO Use on Turf (max)	4	5	100.1	2592.8	7216.0	9285.7	2734.9	8435.6	11408.1	19967.0
3e	Liquids: Wide Area Aerial	Range/Forestry	1	1000	2.00	51.9	144.3	185.7	54.7	168.7	228.2	399.3
		Mosquito Adulticide	0.016	7500	16.7	432.1	1202.7	1547.6	455.8	1405.9	1901.4	3327.8
		Mosquito Adulticide	0.15	7500	1.78	46.1	128.3	165.1	48.6	150.0	202.8	355.0
		APHIS Grasshopper	0.5	3000	1.3	34.6	96.2	123.8	36.5	112.5	152.1	266.2
		APHIS Grasshopper	0.375	3000	1.8	46.1	128.3	165.1	48.6	150.0	202.8	355.0
		APHIS Grasshopper	0.125	3000	5.3	138.3	384.9	495.2	145.9	449.9	608.4	1064.3
	MRID 46634105	APHIS Grasshopper (ULV)	0.5	3000	1.3	34.6	96.2	123.8	36.5	112.5	152.1	2324.0
	MRID 46634105	APHIS Grasshopper (ULV)	0.375	3000	1.8	46.1	128.3	165.1	48.6	150.0	202.8	3098.6
	MRID 46634105	APHIS Grasshopper (ULV)	0.125	3000	5.3	138.3	384.9	495.2	145.9	449.9	608.4	9295.8
3f	Liquids: Wide Area Ground	Mosquito Adulticide	0.016	3000	41.7	1080.3	3006.7	3869.0	1139.5	3514.8	4753.4	8319.6
		Mosquito Adulticide	0.15	3000	4.4	115.2	320.7	412.7	121.5	374.9	507.0	887.4
4a	Wettable Powders: Airblast	Citrus Trees (CA 24C)	12	40	1.8	3.6	15.0	24.9	3.6	15.7	27.0	440.9
		Citrus Trees (FL 24C)	8	40	2.7	5.4	22.5	37.3	5.4	23.6	40.6	661.4
		Citrus Trees	5	40	4.3	8.6	36.0	59.7	8.7	37.8	64.9	1058.2
		Nut Trees	5	40	4.3	8.6	36.0	59.7	8.7	37.8	64.9	1058.2
		Stone Fruit (olive)	7.5	40	2.9	5.7	24.0	39.8	5.8	25.2	43.3	705.5
		Pome & Stone Fruit	3	40	7.1	14.3	59.9	99.5	14.5	62.9	108.2	1763.6
		Grapes	2	40	10.7	21.5	89.9	149.3	21.7	94.4	162.2	2645.5
		Stone Fruit (avg.)	1.1	40	19.4	39.1	163.4	271.4	39.5	171.7	295.0	4809.9
4b	Wettable Powders: Groundboom	Corn	2	200	2.1	4.3	18.0	29.9	4.3	18.9	32.4	529.1
		Strawberries	2	80	5.3	10.7	44.9	74.6	10.9	47.2	81.1	1322.7
		Turf/Golf Courses 1	8	40	2.7	5.4	22.5	37.3	5.4	23.6	40.6	661.4
		Turf/Golf Courses 2	1	40	5.3	10.7	44.9	74.6	10.9	47.2	81.1	1322.7
4c	Wet Powder: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	21.3	43.0	179.8	298.6	43.5	188.8	324.5	5290.9
		LCO Use on Turf (max)	4	5	42.7	85.9	359.5	597.2	86.9	377.7	649.0	10581.8
						Applicators						
5a	Aerial Liquid Application	Corn (max)	1.5	1200	NA	NA	NA	NA	NA	NA	NA	309.8
		Corn (avg.)	1	1200	NA	NA	NA	NA	NA	NA	NA	464.6

		Stone Fruit (CA)	4	350	NA	NA	NA	NA	NA	NA	NA	398.3
		Stone Fruit	3	350	NA	NA	NA	NA	NA	NA	NA	531.0
		Vegetables	2	350	NA	NA	NA	NA	NA	NA	NA	796.5
5b	Wide Area: Aerial	Range/Forestry	1	1000	NA	NA	NA	NA	NA	NA	NA	557.6
		Mosquito Adulticide	0.016	7500	NA	NA	NA	NA	NA	NA	NA	4646.5
		Mosquito Adulticide	0.15	7500	NA	NA	NA	NA	NA	NA	NA	495.6
		APHIS Grasshopper	0.5	3000	NA	NA	NA	NA	NA	NA	NA	371.7
		APHIS Grasshopper	0.375	3000	NA	NA	NA	NA	NA	NA	NA	495.6
		APHIS Grasshopper	0.125	3000	NA	NA	NA	NA	NA	NA	NA	1486.9
	MRID 46634105	APHIS Grasshopper (ULV)	0.5	3000	NA	NA	NA	NA	NA	NA	NA	2114.0
	MRID 46634105	APHIS Grasshopper (ULV)	0.375	3000	NA	NA	NA	NA	NA	NA	NA	2818.7
	MRID 46634105	APHIS Grasshopper (ULV)	0.125	3000	NA	NA	NA	NA	NA	NA	NA	8456.1
5c	Aerial Granular Application	APHIS/Grasshopper	0.5	3000	NA	NA	NA	NA	NA	NA	NA	35.6
		APHIS/Grasshopper	0.03	3000	NA	NA	NA	NA	NA	NA	NA	590.2
6a	Ground	Citrus Trees (CA 24C)	10	40	17.7	21.1	40.0	15.1	26.2	52.6	75.8	463.1
		Citrus Trees (FL 24C)	8	40	26.5	31.9	60.5	68.1	39.2	93.9	113.6	721.6
		Citrus Trees	5	40	42.4	51.0	96.8	109.0	62.8	150.2	181.8	1154.6
		Nut Trees	5	40	42.4	51.0	96.8	109.0	62.8	150.2	181.8	1154.6
		Stone Fruit (olive)	7.5	40	28.2	34.0	64.5	72.7	41.9	100.1	121.2	769.7
		Pome & Stone Fruit	3	40	70.6	85.0	161.3	181.7	104.7	250.3	303.1	1924.3
		Grapes	2	40	105.9	127.6	242.0	272.5	157.0	375.5	454.6	2886.4
		Stone Fruit (avg.)	1.1	40	192.6	231.9	440.0	495.5	285.4	682.7	826.5	5248.0
6b	Wide Area: Ground Fogger	Mosquito Adulticide	0.016	3000	176.5	212.6	403.3	454.2	261.7	625.8	757.7	4810.6
	(Airblast as Surrogate)	Mosquito Adulticide	0.15	3000	18.8	22.7	43.0	48.5	27.9	66.8	80.8	513.1
7	Groundboom	Corn	2	200	210.8	210.8	589.3	759.9	220.1	668.2	896.4	1779.4
		Strawberries	2	80	526.9	526.9	1473.3	1899.7	550.2	1670.5	2240.9	4448.6
		Turf/Golf Courses 1	8	40	263.5	263.5	736.6	949.9	275.1	835.2	1120.5	2224.3
		Turf/Golf Courses 2	4	40	526.9	526.9	1473.3	1899.7	550.2	1670.5	2240.9	4448.6
8	Solid Broadcast Spreader	Corn	2	200	146.2	150.2	582.6	910.2	154.8	659.6	1113.3	789.8
		Strawberries	2	80	365.6	375.5	1456.5	2275.6	387.1	1649.0	2783.1	1974.5
		Turf/Golf Courses 1	6	40	243.7	250.3	971.0	1517.0	258.1	1099.4	1855.4	1316.3
		Turf/Golf Courses 2	9	40	162.5	166.9	647.4	1011.4	172.0	732.9	1237.0	877.6
9	Aerosol Can	Lawn/Garden (lb ai/can)	0.01	2	1031.9	1652.6	2963.7	3290.0	1823.7	3563.3	4045.6	NA
10	Trigger Pump Sprayer	Lawn/Garden (lb ai/can)	0.01	1	NA	26061.6	38900.5	41453.2	NA	NA	NA	NA
11	Right of Way	Fire Ant (per 100 gallons)	1.5	10	249.5	578.2	887.0	950.5	676.0	1140.4	1247.5	NA
						Mixer/Loader/Applicators						
12	Low Pressure/High Volume Turfgun	LCO Use on Turf (max)	8	5	NA	129.2	199.2	213.6	172.4	324.3	364.4	NA
	(OPPTS WP Data Used)	LCO Use on Turf (max)	4	5	NA	258.4	398.4	427.3	344.7	648.5	728.8	NA
13a	Wettable Powder: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	NA	80.2	292.9	438.3	82.3	323.3	510.0	NA
13b	Liquid: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	NA	2729.9	8388.4	11321.9	2790.9	8992.9	12451.7	NA
14	Backpack Sprayer	Ornamentals (2% Soln)	0.02	40	NA	1555.7	2527.1	2741.3	1913.5	3628.8	4088.2	NA
15	Granule: Push Type Spreader	Turf	9	5	NA	166.8	396.6	479.1	193.4	589.9	793.1	NA
16	Handheld Fogger	Ornamentals/Mosquito	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	Power Backpack	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA
18	Granule: Backpack	Ornamentals	9	1	NA	NA	NA	NA	6686.4	6683.8	6685.9	NA
19	Tree Injection	Ornamentals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Drench/Dipping	Forestry/Ornamentals	1.5	100	NA	345.7	962.1	1236.1	364.6	1124.7	1521.1	NA
21	Sprinkler Can	Ornamentals (2% Soln)	0.02	10	NA	4428.4	4848.4	4906.6	5595.0	6282.7	6380.7	NA
						Flaggers						
22a	Flagger: Liquid Sprays	Corn	2	1200	65.7	64.0	143.5	189.8	65.7	152.2	182.2	910.9
		Vegetables	2	350	225.3	219.5	491.8	582.1	225.3	521.8	624.6	3123.1
22b	Flagger: Granulars	Corn	2	1200	173.8	189.6	637.8	905.4	198.7	753.4	1157.4	8687.8
		Vegetables	2	350	595.7	650.0	2186.9	3104.3	681.1	2583.0	3968.1	29786.6

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Appendix A: Numerical Values For Carbaryl Occupational Handler Risk Assessment

Number	Scenario	Representative Application Targets/Crops	Application Parameters Application Rate	Area Treated	Baseline	Single Layer, Gloves & No Respirator	Single Layer, Gloves & PF5 Respirator	Single Layer, Gloves & PF10 Respirator	Double Layer, Gloves & No Respirator	Double Layer, Gloves & PF5 Respirator	Double Layer, Gloves & PF10 Respirator	Eng. Controls
						Mixer/Loaders						
1a	Dry Flowable: Aerial/Chemigation	Corn (max)	2	1200	4.E-06	4.E-06	4.E-06	3.E-06	3.E-06	3.E-06	2.E-06	7.E-08
		Corn (avg.)	1	1200	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	4.E-08
		Stone Fruit	3	350	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	2.E-08
		Vegetables	2	350	1.E-06	1.E-06	1.E-06	1.E-06	9.E-07	7.E-07	7.E-07	2.E-08
1b	Dry Flowable: Groundboom	Citrus Trees (CA 24C)	12	40	4.E-07	4.E-07	7.E-07	6.E-07	6.E-07	5.E-07	5.E-07	1.E-08
		Citrus Trees (FL 24C)	8	40	3.E-07	3.E-07	5.E-07	5.E-07	4.E-07	4.E-07	4.E-07	1.E-08
		Citrus Trees	5	40	2.E-07	2.E-07	3.E-07	3.E-07	2.E-07	2.E-07	2.E-07	6.E-09
		Nut Trees	5	40	3.E-07	3.E-07	3.E-07	3.E-07	2.E-07	2.E-07	2.E-07	6.E-09
		Stone Fruit (olive)	7.5	40	5.E-07	5.E-07	4.E-07	4.E-07	3.E-07	3.E-07	3.E-07	9.E-09
		Pome & Stone Fruit	3	40	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	1.E-07	4.E-09
		Grapes	2	40	1.E-07	1.E-07	1.E-07	1.E-07	9.E-08	8.E-08	8.E-08	2.E-09
		Stone Fruit (avg.)	1.1	40	7.E-08	7.E-08	6.E-08	6.E-08	5.E-08	5.E-08	5.E-08	1.E-09
1c	Dry Flowable: Groundboom	Corn	2	200	6.E-07	6.E-07	6.E-07	6.E-07	5.E-07	4.E-07	4.E-07	1.E-08
		Strawberries	2	80	3.E-07	3.E-07	2.E-07	2.E-07	2.E-07	2.E-07	2.E-07	5.E-09
		Turf/Golf Courses 1	8	40	5.E-07	5.E-07	5.E-07	5.E-07	4.E-07	3.E-07	3.E-07	1.E-08
		Turf/Golf Courses 2	4	40	3.E-07	3.E-07	2.E-07	2.E-07	2.E-07	2.E-07	2.E-07	5.E-09
1d	Dry Flowable: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	6.E-08	6.E-08	6.E-08	6.E-08	5.E-08	4.E-08	4.E-08	1.E-09
		LCO Use on Turf (max)	4	5	3.E-08	3.E-08	3.E-08	3.E-08	2.E-08	2.E-08	2.E-08	6.E-10
1e	Dry Flowable: Wide Area Aerial	Range/Forestry	1	1000	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	1.E-06	1.E-06	3.E-08
2a	Granular: Aerial Application	APHIS/Grasshopper	0.5	3000	7.E-07	7.E-07	3.E-07	3.E-07	5.E-07	2.E-07	2.E-07	1.E-08
		APHIS/Grasshopper	0.03	3000	4.E-08	4.E-08	2.E-08	2.E-08	3.E-08	1.E-08	9.E-09	9.E-10
2b	Granular: Broadcast Spreader	Corn	2	200	2.E-07	2.E-07	2.E-07	7.E-08	1.E-07	5.E-08	4.E-08	4.E-09
		Vegetables	2	80	8.E-08	7.E-08	3.E-08	3.E-08	6.E-08	2.E-08	2.E-08	2.E-09
		Turf/Golf Courses 1	6	40	1.E-07	1.E-07	5.E-08	4.E-08	9.E-08	3.E-08	2.E-08	2.E-09
		Turf/Golf Courses 2	9	40	2.E-07	2.E-07	7.E-08	6.E-08	1.E-07	5.E-08	4.E-08	3.E-09
3a	Liquids: Aerial / Chemigation	Corn (max)	1.5	1200	1.E-04	1.E-06	1.E-06	9.E-07	1.E-06	7.E-07	7.E-07	4.E-07
		Corn (avg.)	1	1200	8.E-05	9.E-07	6.E-07	6.E-07	7.E-07	5.E-07	5.E-07	2.E-07
		Stone Fruit (CA)	4	350	9.E-05	1.E-06	8.E-07	7.E-07	8.E-07	6.E-07	5.E-07	3.E-07
		Stone Fruit	3	350	7.E-05	7.E-07	5.E-07	5.E-07	6.E-07	4.E-07	4.E-07	2.E-07
		Vegetables	2	350	4.E-05	5.E-07	4.E-07	4.E-07	4.E-07	3.E-07	3.E-07	1.E-07
3b	Liquids: Airblast	Citrus Trees (CA 24C)	12	40	3.E-05	3.E-07	3.E-07	2.E-07	3.E-07	2.E-07	2.E-07	1.E-07
		Citrus Trees (FL 24C)	8	40	2.E-05	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	6.E-08
		Citrus Trees	5	40	1.E-05	1.E-07	1.E-07	1.E-07	1.E-07	9.E-08	9.E-08	1.E-08
		Nut Trees	5	40	1.E-05	1.E-07	1.E-07	1.E-07	1.E-07	8.E-08	8.E-08	4.E-08
		Stone Fruit (olive)	7.5	40	2.E-05	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	6.E-08
		Pome & Stone Fruit	3	40	8.E-06	8.E-08	6.E-08	6.E-08	7.E-08	5.E-08	5.E-08	2.E-08
		Grapes	2	40	5.E-06	6.E-08	4.E-08	4.E-08	5.E-08	3.E-08	3.E-08	2.E-08
		Stone Fruit (avg.)	1.1	40	3.E-06	3.E-08	2.E-08	2.E-08	3.E-08	2.E-08	2.E-08	9.E-09
3c	Liquids: Groundboom	Corn	2	200	3.E-05	4.E-07	3.E-07	2.E-07	3.E-07	2.E-07	2.E-07	6.E-08
		Strawberries	2	80	1.E-05	1.E-07	9.E-08	8.E-08	9.E-08	7.E-08	6.E-08	3.E-08
		Turf/Golf Courses 1	8	40	2.E-05	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	6.E-08
		Turf/Golf Courses 2	4	40	1.E-05	1.E-07	9.E-08	8.E-08	9.E-08	7.E-08	6.E-08	3.E-08
3d	Liquids: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	3.E-06	3.E-08	2.E-08	2.E-08	2.E-08	2.E-08	2.E-08	8.E-09
		LCO Use on Turf (max)	4	5	1.E-06	1.E-08	1.E-08	1.E-08	1.E-08	8.E-09	8.E-09	4.E-09
3e	Liquids: Wide Area Aerial	Range/Forestry	1	1000	6.E-05	7.E-07	5.E-07	5.E-07	6.E-07	4.E-07	4.E-07	2.E-07
		Mosquito Adulticide	0.016	7500	8.E-06	8.E-08	6.E-08	6.E-08	7.E-08	5.E-08	5.E-08	2.E-08
		Mosquito Adulticide	0.15	7500	7.E-05	8.E-07	6.E-07	6.E-07	6.E-07	5.E-07	4.E-07	2.E-07
		APHIS Grasshopper	0.5	3000	9.E-05	1.E-06	8.E-07	8.E-07	9.E-07	6.E-07	6.E-07	3.E-07
		APHIS Grasshopper	0.375	3000	7.E-05	8.E-07	6.E-07	6.E-07	6.E-07	5.E-07	4.E-07	2.E-07
		APHIS Grasshopper	0.125	3000	2.E-05	3.E-07	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	8.E-08
		APHIS Grasshopper (ULV)	0.5	3000	9.E-05	1.E-06	8.E-07	8.E-07	9.E-07	6.E-07	6.E-07	4.E-08
		APHIS Grasshopper (ULV)	0.375	3000	7.E-05	8.E-07	6.E-07	6.E-07	6.E-07	5.E-07	4.E-07	3.E-08
		APHIS Grasshopper (ULV)	0.125	3000	2.E-05	3.E-07	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-08
3f	Liquids: Wide Area Ground	Mosquito Adulticide	0.016	3000	3.E-06	3.E-08	3.E-08	2.E-08	3.E-08	2.E-08	2.E-08	1.E-08
		Mosquito Adulticide	0.15	3000	3.E-05	3.E-07	2.E-07	2.E-07	3.E-07	2.E-07	2.E-07	9.E-08
4a	Wettable Powders: Airblast	Citrus Trees (CA 24C)	12	40	4.E-05	5.E-06	2.E-06	2.E-06	5.E-06	2.E-06	2.E-06	1.E-07
		Citrus Trees (FL 24C)	8	40	3.E-05	4.E-06	2.E-06	1.E-06	3.E-06	1.E-06	1.E-06	8.E-08
		Citrus Trees	5	40	2.E-05	2.E-06	1.E-06	9.E-07	2.E-06	9.E-07	7.E-07	5.E-08
		Nut Trees	5	40	2.E-05	2.E-06	1.E-06	9.E-07	2.E-06	9.E-07	7.E-07	5.E-08
		Stone Fruit (olive)	7.5	40	3.E-05	3.E-06	2.E-06	1.E-06	3.E-06	1.E-06	1.E-06	9.E-08
		Pome & Stone Fruit	3	40	1.E-05	1.E-06	6.E-07	5.E-07	1.E-06	5.E-07	4.E-07	3.E-08
		Grapes	2	40	7.E-06	9.E-07	4.E-07	4.E-07	8.E-07	3.E-07	3.E-07	2.E-08
		Stone Fruit (avg.)	1.1	40	4.E-06	5.E-07	2.E-07	2.E-07	4.E-07	2.E-07	2.E-07	1.E-08
4b	Wettable Powders: Groundboom	Corn	2	200	4.E-05	4.E-06	2.E-06	2.E-06	4.E-06	2.E-06	1.E-06	1.E-07
		Strawberries	2	80	1.E-05	2.E-06	8.E-07	7.E-07	2.E-06	7.E-07	6.E-07	4.E-08
		Turf/Golf Courses 1	8	40	3.E-05	4.E-06	2.E-06	1.E-06	3.E-06	1.E-06	1.E-06	8.E-08
		Turf/Golf Courses 2	4	40	1.E-05	2.E-06	8.E-07	7.E-07	2.E-06	7.E-07	6.E-07	4.E-08
4c	Wet. Powd.: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	4.E-06	4.E-07	2.E-07	2.E-07	4.E-07	2.E-07	1.E-07	1.E-08
		LCO Use on Turf (max)	4	5	2.E-06	2.E-07	1.E-07	9.E-08	2.E-07	9.E-08	7.E-08	5.E-09
						Applicators						
5a	Aerial Liquid Application	Corn (max)	1.5	1200	NA	NA	NA	NA	NA	NA	NA	2.E-07
		Corn (avg.)	1	1200	NA	NA	NA	NA	NA	NA	NA	2.E-07
		Stone Fruit (CA)	4	350	NA	NA	NA	NA	NA	NA	NA	2.E-07

		Stone Fruit	3	350	NA	NA	NA	NA	NA	NA	NA	1.E-07
		Vegetables	2	350	NA	NA	NA	NA	NA	NA	NA	9.E-08
5b	Wide Area: Aerial	Range/Forestry	1	1000	NA	NA	NA	NA	NA	NA	NA	1.E-07
		Mosquito Adulticide	0.016	7500	NA	NA	NA	NA	NA	NA	NA	2.E-08
		Mosquito Adulticide	0.15	7500	NA	NA	NA	NA	NA	NA	NA	1.E-07
		APHIS Grasshopper	0.5	3000	NA	NA	NA	NA	NA	NA	NA	2.E-07
		APHIS Grasshopper	0.375	3000	NA	NA	NA	NA	NA	NA	NA	1.E-07
		APHIS Grasshopper	0.125	3000	NA	NA	NA	NA	NA	NA	NA	5.E-08
		APHIS Grasshopper (ULV)	0.5	3000	NA	NA	NA	NA	NA	NA	NA	4.E-08
		APHIS Grasshopper (ULV)	0.375	3000	NA	NA	NA	NA	NA	NA	NA	3.E-08
		APHIS Grasshopper (ULV)	0.125	3000	NA	NA	NA	NA	NA	NA	NA	9.E-09
5c	Aerial Granular Application	APHIS/Grasshopper	0.5	3300	NA	NA	NA	NA	NA	NA	NA	4.E-07
		APHIS/Grasshopper	0.03	3300	NA	NA	NA	NA	NA	NA	NA	3.E-08
6a	Ground	Citrus Trees (CA 740)	12	40	4.E-06	3.E-06	3.E-06	2.E-06	1.E-06	1.E-06	9.E-08	9.E-07
		Citrus Trees (FL 2400)	2	40	3.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	9.E-07	1.E-07
		Citrus Trees	5	40	2.E-06	1.E-06	1.E-06	1.E-06	7.E-07	6.E-07	6.E-07	9.E-08
		Nut Trees	5	40	2.E-06	1.E-06	1.E-06	1.E-06	7.E-07	6.E-07	6.E-07	9.E-08
		Stone Fruit (olive)	7.5	40	3.E-06	2.E-06	2.E-06	2.E-06	1.E-06	9.E-07	9.E-07	1.E-07
		Pome & Stone Fruit	3	40	1.E-06	7.E-07	6.E-07	6.E-07	4.E-07	4.E-07	3.E-07	5.E-08
		Grapes	2	40	7.E-07	5.E-07	4.E-07	4.E-07	3.E-07	2.E-07	2.E-07	3.E-08
		Stone Fruit (avg.)	1.1	40	4.E-07	3.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	2.E-08
6b	Wide Area: Ground Fogger	Mosquito Adulticide	0.016	3000	4.E-07	3.E-07	3.E-07	3.E-07	2.E-07	1.E-07	1.E-07	2.E-08
	(Airblast as Surrogate)	Mosquito Adulticide	0.15	3000	4.E-06	3.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	2.E-07
7	Groundboom	Corn	2	200	2.E-07	2.E-07	1.E-07	1.E-07	1.E-07	1.E-07	1.E-07	5.E-08
		Strawberries	2	80	7.E-08	7.E-08	5.E-08	5.E-08	6.E-08	4.E-08	4.E-08	2.E-08
		Turf/Golf Courses 1	8	40	1.E-07	1.E-07	1.E-07	1.E-07	1.E-07	8.E-08	8.E-08	4.E-08
		Turf/Golf Courses 2	4	40	7.E-08	7.E-08	5.E-08	5.E-08	5.E-08	4.E-08	4.E-08	2.E-08
8	Solid Broadcast Spreader	Corn	2	200	2.E-07	1.E-07	8.E-08	7.E-08	1.E-07	5.E-08	4.E-08	3.E-08
		Strawberries	2	80	7.E-08	6.E-08	3.E-08	3.E-08	5.E-08	2.E-08	2.E-08	1.E-08
		Turf/Golf Courses 1	8	40	1.E-07	1.E-07	5.E-08	4.E-08	7.E-08	3.E-08	3.E-08	2.E-08
		Turf/Golf Courses 2	9	40	2.E-07	1.E-07	7.E-08	6.E-08	1.E-07	5.E-08	4.E-08	3.E-08
9	Aerosol Can	Lawn/Garden (lb ai/can)	0.01	2	9.E-08	4.E-08	4.E-08	4.E-08	3.E-08	3.E-08	3.E-08	NA
10	Trigger Pump Sprayer	Lawn/Garden (lb ai/can)	0.01	1	NA	3.E-09	3.E-09	3.E-09	NA	NA	NA	NA
11	Right of Way	Fire Ant (per 100 gallons)	1.5	10	4.E-07	1.E-07	1.E-07	1.E-07	1.E-07	1.E-07	1.E-07	NA
						Mixer/Loaders/Applicators						
12	Low Pressure/High Volume Turfgun	LCO Use on Turf (max)	8	5	NA	6.E-07	6.E-07	6.E-07	4.E-07	3.E-07	3.E-07	NA
	(ORETF WP Data Used)	LCO Use on Turf (max)	4	5	NA	3.E-07	3.E-07	3.E-07	2.E-07	2.E-07	2.E-07	NA
13a	Wettable Powder: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	NA	3.E-07	2.E-07	2.E-07	3.E-07	1.E-07	1.E-07	NA
13b	Liquid: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	2.E-06	1.E-08	8.E-09	8.E-09	1.E-08	7.E-09	7.E-09	NA
14	Backpack Sprayer	Ornamentals (2% Soln)	0.02	40	5.E-08	5.E-08	4.E-08	4.E-08	3.E-08	3.E-08	3.E-08	NA
15	Granule: Push Type Spreader	Turf	9	5	4.E-07	3.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	NA
16	Handheld Fogger	Ornamentals/Mosquito	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	Power Backpack	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA
18	Granule: Backpack	Ornamentals	9	1	NA	NA	NA	NA	2.E-08	2.E-08	2.E-08	NA
19	Tree Injection	Ornamentals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Drench/Dipping	Forestry/Ornamentals	1.5	100	9.E-06	1.E-07	8.E-08	8.E-08	8.E-08	6.E-08	6.E-08	NA
21	Sprinkler Can	Ornamentals (2% Soln)	0.02	10	1.E-07	3.E-08	3.E-08	3.E-08	2.E-08	2.E-08	2.E-08	NA
						Flaggers						
22a	Flagger: Liquid Sprays	Corn	2	1200	7.E-07	8.E-07	7.E-07	6.E-07	7.E-07	6.E-07	6.E-07	1.E-07
		Vegetables	2	350	2.E-07	2.E-07	2.E-07	2.E-07	2.E-07	2.E-07	2.E-07	3.E-08
22b	Flagger: Granulars	Corn	2	1200	2.E-07	1.E-07	1.E-07	9.E-08	1.E-07	6.E-08	6.E-08	4.E-09
		Vegetables	2	350	6.E-08	4.E-08	3.E-08	3.E-08	3.E-08	2.E-08	2.E-08	1.E-09

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Appendix A. Numerical Values For Carbaryl Occupational Handler Risk Assessment

Number	Scenario	Representative Application Targets/Crops	Application Parameters Application Rate	Area Treated	Baseline	Single Layer, Gloves & No Respirator	Single Layer, Gloves & PF5 Respirator	Single Layer, Gloves & PF10 Respirator	Double Layer, Gloves & No Respirator	Double Layer, Gloves & PF5 Respirator	Double Layer, Gloves & PF10 Respirator	Eng. Controls
						Mixer/Loaders						
1a	Dry Flowable: Aerial/Chemigation	Corn (max)	2	1200	1.E-05	1.E-05	1.E-05	1.E-05	5.E-06	8.E-06	7.E-06	2.E-07
		Corn (avg.)	1	1200	6.E-06	6.E-06	5.E-06	5.E-06	4.E-06	4.E-06	4.E-06	1.E-07
		Stone Fruit	3	350	5.E-06	5.E-06	5.E-06	5.E-06	4.E-06	3.E-06	3.E-06	1.E-07
		Vegetables	2	350	3.E-06	3.E-06	3.E-06	3.E-06	2.E-06	2.E-06	2.E-06	3.E-08
1b	Dry Flowable: Aerial	Citrus Trees (CA 24C)	12	40	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-08
		Citrus Trees (FL 24C)	8	40	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	1.E-06	1.E-06	1.E-08
		Citrus Trees	5	40	9.E-07	9.E-07	9.E-07	9.E-07	9.E-07	9.E-07	9.E-07	2.E-08
		Nut Trees	5	40	9.E-07	9.E-07	9.E-07	9.E-07	9.E-07	9.E-07	9.E-07	2.E-08
		Stone Fruit (olive)	7.5	40	1.E-06	1.E-06	1.E-06	1.E-06	1.E-06	9.E-07	9.E-07	3.E-08
		Pome & Stone Fruit	3	40	6.E-07	6.E-07	5.E-07	5.E-07	4.E-07	4.E-07	4.E-07	1.E-08
		Grapes	2	40	4.E-07	4.E-07	4.E-07	3.E-07	3.E-07	3.E-07	2.E-07	7.E-09
		Stone Fruit (avg.)	1.1	40	2.E-07	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	4.E-09
1c	Dry Flowable: Groundboom	Corn	2	200	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	4.E-08
		Strawberries	2	80	8.E-07	8.E-07	7.E-07	7.E-07	6.E-07	5.E-07	5.E-07	1.E-08
		Turf/Golf Courses 1	8	40	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	1.E-06	1.E-06	3.E-08
		Turf/Golf Courses 2	4	40	9.E-07	8.E-07	7.E-07	7.E-07	6.E-07	5.E-07	5.E-07	1.E-08
1d	Dry Flowable: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	1.E-07	4.E-09
		LCO Use on Turf (max)	4	5	9.E-08	9.E-08	9.E-08	9.E-08	7.E-08	6.E-08	6.E-08	2.E-09
1e	Dry Flowable: Wide Area Aerial	Range/Forestry	1	1000	5.E-06	5.E-06	4.E-06	4.E-06	3.E-06	3.E-06	3.E-06	9.E-08
2a	Granular: Aerial Application	APHIS/Grasshopper	0.5	3000	2.E-06	2.E-06	9.E-07	8.E-07	2.E-06	6.E-07	5.E-07	4.E-08
		APHIS/Grasshopper	0.03	3000	1.E-07	1.E-07	6.E-08	5.E-08	1.E-07	4.E-08	3.E-08	3.E-09
2b	Granular: Broadcast Spreader	Corn	2	200	8.E-07	8.E-07	2.E-07	2.E-07	4.E-07	2.E-07	1.E-07	1.E-08
		Vegetables	2	80	2.E-07	2.E-07	1.E-07	9.E-08	2.E-07	6.E-08	5.E-08	5.E-09
		Turf/Golf Courses 1	6	40	3.E-07	3.E-07	1.E-07	1.E-07	3.E-07	1.E-07	7.E-08	7.E-09
		Turf/Golf Courses 2	9	40	5.E-07	5.E-07	2.E-07	2.E-07	4.E-07	1.E-07	1.E-07	1.E-08
3a	Liquids: Aerial / Chemigation	Corn (max)	1.5	1200	3.E-04	4.E-06	3.E-06	3.E-06	3.E-06	2.E-06	2.E-06	1.E-06
		Corn (avg.)	1	1200	2.E-04	3.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	7.E-07
		Stone Fruit (CA)	4	350	3.E-04	3.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	8.E-07
		Stone Fruit	3	350	2.E-04	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	6.E-07
		Vegetables	2	350	1.E-04	1.E-06	1.E-06	1.E-06	1.E-06	9.E-07	8.E-07	4.E-07
3b	Liquids: Airblast	Citrus Trees (CA 24C)	12	40	9.E-05	1.E-06	8.E-07	7.E-07	8.E-07	6.E-07	6.E-07	3.E-07
		Citrus Trees (FL 24C)	8	40	6.E-05	7.E-07	5.E-07	5.E-07	6.E-07	4.E-07	4.E-07	2.E-07
		Citrus Trees	5	40	4.E-05	4.E-07	3.E-07	3.E-07	3.E-07	2.E-07	2.E-07	1.E-07
		Nut Trees	5	40	4.E-05	4.E-07	3.E-07	3.E-07	3.E-07	2.E-07	2.E-07	1.E-07
		Stone Fruit (olive)	7.5	40	6.E-05	6.E-07	5.E-07	5.E-07	5.E-07	4.E-07	4.E-07	2.E-07
		Pome & Stone Fruit	3	40	2.E-05	3.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	7.E-08
		Grapes	2	40	2.E-05	2.E-07	1.E-07	1.E-07	1.E-07	1.E-07	9.E-08	5.E-08
		Stone Fruit (avg.)	1.1	40	8.E-06	9.E-08	7.E-08	7.E-08	8.E-08	5.E-08	5.E-08	3.E-08
3c	Liquids: Groundboom	Corn	2	200	8.E-05	8.E-07	6.E-07	5.E-07	7.E-07	5.E-07	5.E-07	2.E-07
		Strawberries	2	80	3.E-05	3.E-07	3.E-07	2.E-07	3.E-07	2.E-07	2.E-07	1.E-07
		Turf/Golf Courses 1	8	40	6.E-05	7.E-07	5.E-07	5.E-07	6.E-07	4.E-07	4.E-07	2.E-07
		Turf/Golf Courses 2	4	40	3.E-05	3.E-07	3.E-07	2.E-07	3.E-07	2.E-07	2.E-07	1.E-07
3d	Liquids: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	8.E-06	8.E-08	6.E-08	6.E-08	7.E-08	5.E-08	5.E-08	2.E-08
		LCO Use on Turf (max)	4	5	4.E-06	4.E-08	3.E-08	3.E-08	3.E-08	2.E-08	2.E-08	1.E-08
3e	Liquids: Wide Area Aerial	Range/Forestry	2	1000	2.E-04	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	6.E-07
		Mosquito Adulticide	0.016	7500	2.E-05	3.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	7.E-08
		Mosquito Adulticide	0.15	7500	2.E-04	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	7.E-07
		APHIS Grasshopper	0.5	3000	3.E-04	3.E-06	2.E-06	2.E-06	3.E-06	2.E-06	2.E-06	9.E-07
		APHIS Grasshopper	0.375	3000	2.E-04	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	7.E-07
		APHIS Grasshopper	0.125	3000	7.E-05	8.E-07	6.E-07	6.E-07	6.E-07	5.E-07	4.E-07	2.E-07
		APHIS Grasshopper (ULV)	0.5	3000	3.E-04	3.E-06	2.E-06	2.E-06	3.E-06	2.E-06	2.E-06	1.E-07
		APHIS Grasshopper (ULV)	0.375	3000	2.E-04	2.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	9.E-08
		APHIS Grasshopper (ULV)	0.125	3000	7.E-05	8.E-07	6.E-07	6.E-07	6.E-07	5.E-07	4.E-07	3.E-08
3f	Liquids: Wide Area Ground	Mosquito Adulticide	0.016	3000	9.E-06	1.E-07	8.E-08	7.E-08	8.E-08	6.E-08	6.E-08	3.E-08
		Mosquito Adulticide	0.15	3000	9.E-05	1.E-06	7.E-07	7.E-07	8.E-07	6.E-07	5.E-07	3.E-07
4a	Wettable Powders: Airblast	Citrus Trees (CA 24C)	12	40	1.E-04	2.E-05	7.E-06	6.E-06	1.E-05	6.E-06	5.E-06	4.E-07
		Citrus Trees (FL 24C)	8	40	8.E-05	1.E-05	5.E-06	4.E-06	1.E-05	4.E-06	3.E-06	2.E-07
		Citrus Trees	5	40	5.E-05	7.E-06	3.E-06	3.E-06	6.E-06	3.E-06	2.E-06	2.E-07
		Nut Trees	5	40	5.E-05	7.E-06	3.E-06	3.E-06	6.E-06	3.E-06	2.E-06	2.E-07
		Stone Fruit (olive)	7.5	40	8.E-05	1.E-05	5.E-06	4.E-06	9.E-06	4.E-06	3.E-06	2.E-07
		Pome & Stone Fruit	3	40	3.E-05	4.E-06	2.E-06	2.E-06	4.E-06	2.E-06	1.E-06	9.E-08
		Grapes	2	40	2.E-05	3.E-06	1.E-06	1.E-06	2.E-06	1.E-06	9.E-07	6.E-08
		Stone Fruit (avg.)	1.1	40	1.E-05	1.E-06	7.E-07	6.E-07	1.E-06	6.E-07	5.E-07	3.E-08
4b	Wettable Powders: Groundboom	Corn	2	200	1.E-04	1.E-05	6.E-06	5.E-06	1.E-05	5.E-06	4.E-06	3.E-07
		Strawberries	2	80	4.E-05	5.E-06	2.E-06	2.E-06	5.E-06	2.E-06	2.E-06	1.E-07
		Turf/Golf Courses 1	8	40	8.E-05	1.E-05	5.E-06	4.E-06	1.E-05	4.E-06	3.E-06	2.E-07
		Turf/Golf Courses 2	4	40	4.E-05	5.E-06	2.E-06	2.E-06	5.E-06	2.E-06	2.E-06	1.E-07
4c	Wettable Powders: Low Press./High Vol. Turfgun	LCO Use on Turf (max)	8	5	1.E-05	1.E-06	6.E-07	5.E-07	1.E-06	5.E-07	4.E-07	3.E-08
		LCO Use on Turf (max)	4	5	5.E-06	7.E-07	3.E-07	3.E-07	6.E-07	3.E-07	2.E-07	2.E-08
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
						Applicators						
5a	Aerial Liquid Application	Corn (max)	1.5	1200	NA	NA	NA	NA	NA	NA	NA	7.E-07
		Corn (avg.)	1	1200	NA	NA	NA	NA	NA	NA	NA	5.E-07

		Stone Fruit (CA)	4	350	NA	NA	NA	NA	NA	NA	NA	6.E-07
		Stone Fruit	3	350	NA	NA	NA	NA	NA	NA	NA	4.E-07
		Vegetables	2	350	NA	NA	NA	NA	NA	NA	NA	3.E-07
5b	Wide Area, Aerial	Range/Forestry	1	1000	NA	NA	NA	NA	NA	NA	NA	4.E-07
		Mosquito Adulticide	0.016	7500	NA	NA	NA	NA	NA	NA	NA	5.E-08
		Mosquito Adulticide	0.15	7500	NA	NA	NA	NA	NA	NA	NA	4.E-07
		APHIS Grasshopper	0.5	3000	NA	NA	NA	NA	NA	NA	NA	6.E-07
		APHIS Grasshopper	0.375	3000	NA	NA	NA	NA	NA	NA	NA	4.E-07
		APHIS Grasshopper	0.125	3000	NA	NA	NA	NA	NA	NA	NA	1.E-07
		APHIS Grasshopper (ULV)	0.5	3000	NA	NA	NA	NA	NA	NA	NA	1.E-07
		APHIS Grasshopper (ULV)	0.375	3000	NA	NA	NA	NA	NA	NA	NA	8.E-08
		APHIS Grasshopper (ULV)	0.125	3000	NA	NA	NA	NA	NA	NA	NA	3.E-08
5c	Aerial Granular Application	APHIS/Grasshopper	0.5	3000	NA	NA	NA	NA	NA	NA	NA	1.E-06
		APHIS/Grasshopper	0.03	3000	NA	NA	NA	NA	NA	NA	NA	4.E-08
6a	Airblast	Citrus Trees (CA 240)	12	40	1.E-05	1.E-06	4.E-06	3.E-06	3.E-06	4.E-06	4.E-06	6.E-07
		Citrus Trees (FL 240)	5	40	5.E-06	6.E-06	5.E-06	5.E-06	3.E-06	3.E-06	3.E-06	4.E-07
		Citrus Trees	5	40	5.E-06	4.E-06	3.E-06	3.E-06	2.E-06	2.E-06	2.E-06	3.E-07
		Nut Trees	5	40	5.E-06	4.E-06	3.E-06	3.E-06	2.E-06	2.E-06	2.E-06	3.E-07
		Stone Fruit (olive)	7.5	40	8.E-06	5.E-06	5.E-06	5.E-06	3.E-06	3.E-06	3.E-06	4.E-07
		Pome & Stone Fruit	3	40	3.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	2.E-07
		Grapes	2	40	2.E-06	1.E-06	1.E-06	1.E-06	9.E-07	7.E-07	7.E-07	1.E-07
		Stone Fruit (avg.)	1.1	40	1.E-06	8.E-07	7.E-07	7.E-07	5.E-07	4.E-07	4.E-07	6.E-08
6b	Wide Area, Ground Fogger	Mosquito Adulticide	0.016	3000	1.E-06	9.E-07	8.E-07	8.E-07	5.E-07	4.E-07	4.E-07	6.E-08
	(Airblast as Surrogate)	Mosquito Adulticide	0.15	3000	1.E-05	8.E-06	7.E-06	7.E-06	5.E-06	4.E-06	4.E-06	6.E-07
7	Groundboom	Corn	2	200	5.E-07	5.E-07	4.E-07	4.E-07	4.E-07	3.E-07	3.E-07	1.E-07
		Strawberries	2	80	2.E-07	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	6.E-08
		Turf/Golf Courses 1	8	40	4.E-07	4.E-07	3.E-07	3.E-07	4.E-07	3.E-07	2.E-07	1.E-07
		Turf/Golf Courses 2	4	40	2.E-07	2.E-07	2.E-07	2.E-07	2.E-07	1.E-07	1.E-07	6.E-08
8	Spike Broadcast Spreader	Corn	2	200	5.E-07	4.E-07	2.E-07	2.E-07	4.E-07	2.E-07	1.E-07	1.E-07
		Strawberries	2	80	2.E-07	2.E-07	9.E-08	9.E-08	1.E-07	6.E-08	5.E-08	4.E-08
		Turf/Golf Courses 1	8	40	4.E-07	3.E-07	1.E-07	1.E-07	2.E-07	1.E-07	8.E-08	6.E-08
		Turf/Golf Courses 2	9	40	5.E-07	4.E-07	2.E-07	2.E-07	3.E-07	1.E-07	1.E-07	9.E-08
9	Aerosol Can	Lawn/Garden (lb ai/can)	0.01	2	3.E-07	1.E-07	1.E-07	1.E-07	1.E-07	9.E-08	8.E-08	NA
10	Trigger Pump Sprayer	Lawn/Garden (lb ai/can)	0.01	1	NA	9.E-09	9.E-09	9.E-09	NA	NA	NA	NA
11	Right of Way	Fire Ant (per 100 gallons)	1.5	10	1.E-06	4.E-07	4.E-07	4.E-07	3.E-07	3.E-07	3.E-07	NA
						Mixer/Loader/Applicators						
12	Low Pressure/High Volume Turfgun	LCO Use on Turf (max)	8	5	NA	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	NA
	(ORETF WP Data Used)	LCO Use on Turf (max)	4	5	NA	9.E-07	9.E-07	9.E-07	5.E-07	5.E-07	5.E-07	NA
13a	Wettable Powder: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	NA	9.E-07	8.E-07	8.E-07	8.E-07	4.E-07	4.E-07	NA
13b	Liquid: Low Pressure Handwand	Ornamentals (2% Soln)	0.02	40	5.E-06	3.E-08	2.E-08	2.E-08	3.E-08	2.E-08	2.E-08	NA
14	Backpack Sprayer	Ornamentals (2% Soln)	0.02	40	1.E-07	1.E-07	1.E-07	1.E-07	1.E-07	9.E-08	8.E-08	NA
15	Granule: Push Type Spreader	Turf	9	5	1.E-06	8.E-07	7.E-07	7.E-07	5.E-07	4.E-07	3.E-07	NA
16	Handheld Fogger	Ornamentals/Mosquito	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	Power Backpack	Ornamentals (2% Soln)	0.02	40	NA	NA	NA	NA	NA	NA	NA	NA
18	Granule: Backpack	Ornamentals	9	1	NA	NA	NA	NA	6.E-08	6.E-08	6.E-08	NA
19	Tree Injection	Ornamentals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Drench/Dipping	Forestry/Ornamentals	1.5	100	3.E-05	3.E-07	2.E-07	2.E-07	3.E-07	2.E-07	2.E-07	NA
21	Sprinkler Can	Ornamentals (2% Soln)	0.02	10	4.E-07	8.E-08	8.E-08	8.E-08	6.E-08	6.E-08	6.E-08	NA
						Flaggers						
22a	Flagger: Liquid Sprays	Corn	2	1200	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	2.E-06	4.E-07
		Vegetables	2	350	6.E-07	7.E-07	6.E-07	6.E-07	6.E-07	5.E-07	5.E-07	1.E-07
22b	Flagger: Granulars	Corn	2	1200	6.E-07	4.E-07	3.E-07	3.E-07	3.E-07	2.E-07	2.E-07	1.E-08
		Vegetables	2	350	2.E-07	1.E-07	8.E-08	8.E-08	1.E-07	6.E-08	5.E-08	4.E-09

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Appendix B. Numerical Values For Carbaryl Airblast Occupational Handler Risk Assessment

Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	Dermal Unit Exposures (mg/lb ai): Baseline	Dermal: PHED - Based Values: Min PPE	Dermal: PHED - Based Values: Max PPE	Dermal: PHED - Based Values: Eng. Ctrl	Dermal: MRID 464482-01: SouWester Hat	Dermal: MRID 464482-01: Hooded Jacket	Inhalation Unit Exposures (ug/lb ai): Baseline	Inhalation: PHED - Based Values: Min PPE	Inhalation: PHED - Based Values: Max PPE	Inhalation: PHED - Based Values: Eng. Ctrl	Inhalation: MRID 464482-01: SouWester Hat	Inhalation: MRID 464482-01: Hooded Jacket
Citrus Trees (CA)	12	40	0.36	0.24	0.13	0.019	0.0703	0.0534	4.5	0.9	0.45	0.09	3.08	1.22
Citrus Trees	8	40	0.36	0.24	0.13	0.019	0.0703	0.0534	4.5	0.9	0.45	0.09	3.08	1.22
Stone Fruit (olives)	7.5	40	0.36	0.24	0.13	0.019	0.0703	0.0534	4.5	0.9	0.45	0.09	3.08	1.22
Citrus/Nut Trees	5	40	0.36	0.24	0.13	0.019	0.0703	0.0534	4.5	0.9	0.45	0.09	3.08	1.22
Pome & Stone Fruit (avg)	3	40	0.36	0.24	0.13	0.019	0.0703	0.0534	4.5	0.9	0.45	0.09	3.08	1.22
Grapes	2	40	0.36	0.24	0.13	0.019	0.0703	0.0534	4.5	0.9	0.45	0.09	3.08	1.22
Stone Fruit (avg.)	1.1	40	0.36	0.24	0.13	0.019	0.0703	0.0534	4.5	0.9	0.45	0.09	3.08	1.22

Short-Term Inhalation NOAEL:	1.1
Short-Term Inhalation UF:	100
Source: Short-term Inhalation NOAEL:	Dev. Neurotox -Rat
Short/Intermediate-Term Dermal NOAEL:	85.56
Short/Intermediate-Term Dermal UF:	100
Source: Short/Intermediate-term Dermal NOAEL:	Tech. Dermal Tox - Rat
Intermediate-Term Inhalation NOAEL:	1.1
Intermediate-Term Inhalation UF:	100
Source: Intermediate-term Inhalation NOAEL:	SCN -Rat
Body Weight:	70
Chronic/Cancer Dermal Absorption Factor (%):	12.7
Inhalation Absorption Factor (%):	100
Professional Ag Worker (days/yr):	30
Private Grower (days/yr)	10
Career (yrs):	35
Lifetime (yr):	70
Days/yr:	365
Q1* (mg/kg/day)-1	0.000875

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Appendix B. Margins of Exposure For Carbaryl Airblast Occupational Handler Risk Assessment At The PHED Baseline Level Of Personal Protection

Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	Dose (mg/kg/day): Potential Dermal	Dose (mg/kg/day): Absorbed Dermal	Dose (mg/kg/day): Inhalation	Short-/Int.-Term MOEs: Dermal	Short-/Int.-Term MOEs: Inhalation	Short-/Int.-Term MOEs: Combined
Citrus Trees (CA)	12	40	2.46857	0.31351	0.03086	34.66	35.65	17.57
Citrus Trees	8	40	1.64571	0.20901	0.02057	51.99	53.47	26.36
Stone Fruit (olives)	7.5	40	1.54286	0.19594	0.01929	55.46	57.04	28.12
Citrus/Nut Trees	5	40	1.02857	0.13063	0.01286	83.18	85.56	42.16
Pome & Stone Fruit (max)	3	40	0.61714	0.07838	0.00771	138.64	142.59	70.29
Grapes	2	40	0.41143	0.05225	0.00514	207.96	213.89	105.44
Stone Fruit (avg.)	1.1	40	0.22629	0.02874	0.00283	378.11	388.89	191.71

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Appendix D. Margins of Exposure For Carbary, Airblast Occupational Handler Risk Assessment At The PHED Minimum Level Of Personal Protection

Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	Dose (mg/kg/day): Potential Dermal	Dose (mg/kg/day): Absorbed Dermal	Dose (mg/kg/day): Inhalation	Short-/Inter.-Term MOEs: Dermal	Short-/Inter.-Term MOEs: Inhalation	Short-/Inter.-Term MOEs: Combined
Citrus Trees (CA)	12	40	1.64571	0.20901	0.0061714	51.99	178.2	40.2
Citrus Trees	8	40	1.09714	0.13934	0.0041143	77.96	267.4	60.4
Stone Fruit (olives)	7.5	40	1.02857	0.13063	0.0038571	83.16	285.2	64.4
Citrus/Nut Trees	5	40	0.68571	0.08709	0.0025714	124.78	427.8	96.6
Pome & Stone Fruit (avg.)	3	40	0.41143	0.05225	0.0015429	207.96	713.0	161.0
Grapes	2	40	0.27429	0.03483	0.0010286	311.94	1069.4	241.5
Stone Fruit (avg.)	1.1	40	0.15086	0.01916	0.0005657	567.16	1944.4	439.1

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Appendix B. Margins of Exposure For Carbaryl Airblast Occupational Handler Risk Assessment At The Maximum Level Of Personal Protection

Representative Application Targets/Crops	Application Parameters Application Rate	Area Treated	Dose (mg/kg/day) Potential Dermal	Absorbed Dermal	Inhalation	Short-/Int.-Term MOEs Dermal	Inhalation	Combined
Citrus Trees (CA)	12	40	0.89143	0.11321	0.0030857	95.98	356.5	75.6
Citrus Trees	8	40	0.59429	0.07547	0.0020571	143.97	534.7	113.4
Stone Fruit (olives)	7.5	40	0.55714	0.07076	0.0019286	153.67	570.4	121.0
Citrus/Nut Trees	5	40	0.37143	0.04717	0.0012857	230.35	855.6	181.5
Citrus & Stone Fruit (avg.)	3	40	0.22286	0.02830	0.0007714	383.92	1425.9	302.5
Grapes	2	40	0.14857	0.01887	0.0005143	575.88	2138.9	453.7
Stone Fruit (avg.)	1.1	40	0.08171	0.01038	0.0002829	1047.06	3888.9	824.9

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Appendix B: Margins of Exposure For Carbaryl Airblast Occupational Handler Risk Assessment Using Engineering Controls

Representative Application Targets/Crops	Application Parameters Application Rate	Area Treated	Dose (mg/kg/day) Potential Dermal	Absorbed Dermal	Inhalation	Short-/Int.-Term MOEs Dermal	Inhalation	Combined
Citrus Trees (CA)	12	40	0.13029	0.01655	0.0006171	656.71	1782.4	479.9
Citrus Trees	8	40	0.08686	0.01103	0.0004114	985.07	2673.6	719.8
Stone Fruit (olives)	7.5	40	0.08143	0.01034	0.0003857	1050.74	2851.9	767.6
Citrus/Nut Trees	5	40	0.05429	0.00689	0.0002571	1576.11	4277.8	1151.8
Pome & Stone Fruit (avg.)	3	40	0.03257	0.00414	0.0001543	2626.84	7129.6	1919.6
Grapes	2	40	0.02171	0.00276	0.0001029	3940.26	10694.4	2879.4
Stone Fruit (avg.)	1.1	40	0.01194	0.00152	0.0000566	7164.11	19444.4	5235.2

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Appendix B: Margins of Exposure For Carbaryl Airblast Occupational Handler Risk Assessment Based On MRID 464482-01 (SouWester Hats)

Representative Application Targets/Crops	Application Parameters Application Rate	Area Treated	Dose (mg/kg/day) Potential Dermal	Absorbed Dermal	Inhalation	Short-/Int -Term MOEs Dermal	Inhalation	Combined
Citrus Trees (CA)	12	40	0.48206	0.06122	0.0211200	177.49	52.1	40.3
Citrus Trees	8	40	0.32137	0.04081	0.0140800	266.23	78.1	60.4
Stone Fruit (olives)	7.5	40	0.30129	0.03826	0.0132000	283.98	83.3	64.4
Citrus/Nut Trees	5	40	0.20086	0.02551	0.0088000	425.97	125.0	96.6
Pome & Stone Fruit (pres)	3	40	0.12051	0.01531	0.0052800	709.96	208.3	161.1
Grapes	2	40	0.08034	0.01020	0.0035200	1064.94	312.5	241.6
Stone Fruit (avg.)	1.1	40	0.04419	0.00561	0.0019360	1936.25	568.2	439.3

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Appendix B: Margins of Exposure For Carbaryl Airblast Occupational Handler Risk Assessment Based On MRID 464482-01 (Hooded Jackets)

Representative Application Targets/Crops	Application Parameters Application Rate	Area Treated	Dose (mg/kg/day) Potential Dermal	Absorbed Dermal	Inhalation	Short-/Int.-Term MOEs Dermal	Inhalation	Combined
Citrus Trees (CA)	12	40	0.36617	0.04650	0.0083657	233.66	131.5	84.1
Citrus Trees	8	40	0.24411	0.03100	0.0055771	350.49	197.2	126.2
Stone Fruit (olives)	7.5	40	0.22886	0.02906	0.0052286	373.86	210.4	134.6
Citrus/Nut Trees	5	40	0.15257	0.01938	0.0034857	560.79	315.6	201.9
Pome & Stone Fruit (max)	4	40	0.09154	0.01163	0.0020914	934.64	526.0	336.6
Grapes	2	40	0.06103	0.00775	0.0013943	1401.97	788.9	504.8
Stone Fruit (avg.)	1.1	40	0.03357	0.00426	0.0007669	2549.03	1434.4	917.9

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Appendix B: Combined Short-Term Margins of Exposure For Carbaryl Airblast Occupational Handler Risk Assessment

Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	MOEs Based On PHED: Baseline	Single Layer, Gloves & No Respirator	Single Layer, Gloves & PF5 Respirator	Single Layer, Gloves & PF10 Respirator	Double Layer, Gloves & No Respirator	Double Layer, Gloves & PF5 Respirator	Double Layer, Gloves & PF10 Respirator	Eng. Controls	MOEs MRID 464482-01: SouWester	MOEs MRID 464482-01: Hooded Jackets
Citrus Trees (CA)	12	40	17.6	21.1	40.2	45.4	26.0	62.4	75.6	479.9	40.3	84.1
Citrus Trees	8	40	26.4	31.7	60.4	68.1	39.0	93.6	113.4	719.8	60.4	126.2
Stone Fruit (olives)	7.5	40	28.1	33.8	64.4	72.6	41.6	99.8	121.0	767.6	64.4	134.6
Citrus/Nut Trees	5	40	42.2	50.6	96.5	108.9	62.4	149.[illegible]	181.5	1151.6	96.6	201.9
Pome & Stone Fruit (max)	3	10	70.3	84.6	161.0	181.5	104.0	249.5	302.5	1919.6	161.1	336.6
Grapes	2	40	105.4	126.9	241.5	272.2	156.0	374.3	453.7	2879.4	241.6	504.8
Stone Fruit (avg.)	1.1	40	191.7	230.7	439.1	495.0	283.6	680.6	824.9	5235.2	439.3	917.9

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Appendix B: Carbaryl Airblast Occupational Handler Cancer Risks For Private Growers

Representative Application Targets/Crops	Application Parameters Application Rate	Area Treated	MOEs Based On PHED Baseline	Single Layer, Gloves & No Respirator	Single Layer, Gloves & PF5 Respirator	Single Layer, Gloves & PF10 Respirator	Double Layer, Gloves & No Respirator	Double Layer, Gloves & PF5 Respirator	Double Layer, Gloves & PF10 Respirator	Eng Controls	MOEs MRID 464482-01 SouWester	Hooded Jackets
Citrus Trees (CA)	12	40	4.1E-06	2.9E-06	2.6E-06	2.5E-06	1.7E-06	1.4E-06	1.4E-06	2.1E-07	9.9E-07	6.6E-07
Citrus Trees	8	40	2.8E-06	1.9E-06	1.7E-06	1.7E-06	1.2E-06	9.5E-07	9.3E-07	1.4E-07	6.6E-07	4.4E-07
Stone Fruit (olives)	7.5	40	2.6E-06	1.8E-06	1.6E-06	1.6E-06	1.1E-06	8.9E-07	8.7E-07	1.3E-07	6.2E-07	4.1E-07
Citrus/Nut Trees	5	40	1.7E-06	1.2E-06	1.1E-06	1.1E-06	7.2E-07	5.9E-07	5.8E-07	8.6E-08	4.1E-07	2.7E-07
Citrus & Stone Fruit (max)	3	40	1.0E-06	7.2E-07	6.4E-07	6.4E-07	4.3E-07	3.6E-07	3.5E-07	5.1E-08	2.5E-07	1.6E-07
Grapes	2	40	6.9E-07	4.8E-07	4.3E-07	4.2E-07	2.9E-07	2.4E-07	2.3E-07	3.4E-08	1.6E-07	1.1E-07
Stone Fruit (avg.)	1.1	40	3.8E-07	2.6E-07	2.4E-07	2.3E-07	1.6E-07	1.3E-07	1.3E-07	1.9E-08	9.0E-08	6.0E-08

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Appendix B. Carbaryl Airblast Occupational Handler Cancer Risks For Commercial Applicators

Representative Application Targets/Crops	Application Parameters: Application Rate	Application Parameters: Area Treated	MOEs Based On PHED: Baseline	Single Layer, Gloves & No Respirator	Single Layer, Gloves & PF5 Respirator	Single Layer, Gloves & PF10 Respirator	Double Layer, Gloves & No Respirator	Double Layer, Gloves & PF5 Respirator	Double Layer, Gloves & PF10 Respirator	Eng. Controls	MOEs MRID 464482-01: SouWester	Hooded Jackets
Citrus Trees (CA)	12	40	1.2E-05	8.6E-06	7.7E-06	7.6E-06	5.2E-06	4.3E-06	4.2E-06	6.2E-07	3.0E-06	2.0E-06
Citrus Trees	8	40	8.3E-06	5.8E-06	5.2E-06	5.1E-06	3.5E-06	2.9E-06	2.8E-06	4.1E-07	2.0E-06	1.3E-06
Stone Fruit (olives)	7.5	40	7.7E-06	5.4E-06	4.8E-06	4.8E-06	3.2E-06	2.7E-06	2.6E-06	3.9E-07	1.9E-06	1.2E-06
Citrus/Nut Trees	5	40	5.2E-06	3.6E-06	3.2E-06	3.2E-06	2.2E-06	1.8E-06	1.7E-06	2.6E-07	1.2E-06	8.2E-07
Pome & Stone Fruit (max)	3	40	3.1E-06	2.2E-06	1.9E-06	1.9E-06	1.3E-06	1.1E-06	1.0E-06	1.5E-07	7.4E-07	4.9E-07
Grapes	2	40	2.1E-06	1.4E-06	1.3E-06	1.3E-06	8.6E-07	7.2E-07	7.0E-07	1.0E-07	4.9E-07	3.3E-07
Stone Fruit (avg.)	1.1	40	1.1E-06	7.9E-07	7.1E-07	7.0E-07	4.7E-07	3.9E-07	3.8E-07	5.7E-08	2.7E-07	1.8E-07

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Appendix C: Inputs For Carbaryl Occupational Postapplication Risk Assessment

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	06/29/2007
Assessor:	W. Britton

Applicable TC Groups:

Berry, Low
Bunch/Bundle
Field row crop, Low/Medium
Field row crop, Tall
Cut flowers
Sugarcane
Tree, "fruit", Deciduous
Tree, "fruit", Evergreen
Tree nuts
Turf/Sod
Vegetable, "root"
Vegetable, "cucurbit"
Vegetable, "fruiting"
Vegetable, "head and stem Brassica"
Vegetable, "leafy"
Vegetable, "stem/stalk"
Vine & trellis crops

[Note: Only applicable TC groups are included above.]

DFR/TTR Data Defaults:

Initial Percent of Rate as DFR (%):	20
Dissipation Rate per day (%):	10
Initial Percent of Rate as TTR (%):	5

Toxicology & Exposure Factor Inputs:

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Short-term Uncertainty Factor:	100
NOAEL (mg/kg/day):	85.56
Source of NOAEL:	21 day dermal - rat
Intermediate-Term NOAEL:	85.56
Intermediate-Term UF:	100
Source of NOAEL:	21 day dermal - rat
Chronic LOAEL:	85.56
Chronic UF:	100
Source of LOAEL:	1 Year Dog Feeding Study
Adult Exposure Duration (hrs/day):	8
Adult Body Weight (kg):	70
Short-/Inter.-term dermal absorption (%):	100
Chron/Canc dermal absorption. (%):	12.7
Source of Dermal Absorption Factor:	Rat Dermal Absorption Study
Q1* (mg/kg/day)-1:	0.000875
Professional Ag Worker (days/yr):	30
Private Grower (days.yr):	10
Years worked	35
Lifetime	70
Days/yr:	365

Note: If a dermal administration toxicity study is the source of the endpoint used for risk assessment, then the dermal absorption factor is set to 100 % to satisfy the calculations in this spreadsheet program.

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Appendix C: Carbaryl Occupational Postapplication Noncancer Risk Assessment For Low Berry Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Berry, Low
Specific Crop(s) Considered:	Lowbush blueberries, cranberries, strawberries
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application), MRID 451917-01
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	400	400 to 1800	Irrigation, scouting, weeding, pruning, thinning, rake harvest of cranberries, mulching
Medium	N/A	N/A	N/A
High	1500	400 to 1800	for blueberries or strawberries: harvesting, hand pruning, pinching, training
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)		MOES	
	Not Adjusted	Adjusted For Rate	Low Exposure	High Exposure	Low Exposure	High Exposure
0	2.460	2.377	0.10865	0.40745	787	210.0
1	2.034	1.965	0.08983	0.33687	952	254.0
2	1.682	1.625	0.07427	0.27851	1152	307
3	1.390	1.343	0.06140	0.23027	1393	372
4	1.149	1.111	0.05077	0.19038	1685	449
5	0.950	0.918	0.04197	0.15740	2038	544
6	0.786	0.759	0.03470	0.13013	2466	657
7	0.650	0.628	0.02869	0.10759	2982	795
8	0.537	0.519	0.02372	0.08895	3607	962
9	0.444	0.429	0.01961	0.07354	4363	1163
10	0.367	0.355	0.01621	0.06080	5277	1407
11	0.304	0.293	0.01341	0.05027	6383	1702
12	0.251	0.242	0.01108	0.04156	7720	2059
13	0.207	0.200	0.00916	0.03436	9337	2490
14	0.172	0.166	0.00758	0.02841	11294	3012
15	0.142	0.137	0.00626	0.02349	13660	3643

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16	0.117	0.113	0.00518	0.01942	16523	4406
17	0.097	0.094	0.00428	0.01605	19985	5329
18	0.080	0.077	0.00354	0.01327	24172	6446
19	0.066	0.064	0.00293	0.01097	29236	7796
20	0.055	0.053	0.00242	0.00907	35362	9430
21	0.045	0.044	0.00200	0.00750	42772	11406
22	0.037	0.036	0.00165	0.00620	51734	13796
23	0.031	0.030	0.00137	0.00513	62573	16686
24	0.026	0.025	0.00113	0.00424	75684	20182
25	0.021	0.020	0.00093	0.00350	91542	24411
26	0.017	0.017	0.00077	0.00290	110723	29526
27	0.014	0.014	0.00064	0.00240	133922	35713
28	0.012	0.012	0.00053	0.00198	161982	43195
29	0.010	0.010	0.00044	0.00164	195922	52246
30	0.008	0.008	0.00036	0.00135	236973	63193
Int-Term (30 day average)	0.457	0.441	0.02018	0.07567	4240	1131

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Appendix C: Carbaryl Occupational Postapplication Cancer Risk Assessment For Low Berry Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Berry, Low
Specific Crop(s) Considered:	Lowbush blueberries, cranberries, strawberries
Application Rate of Crop (lb ai/A)	2

DFR Data Summary:

Data Source (enter 1 if data available, 0 if detailed):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application), MRID 451917-01
Slope of Semilog Regression	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	400	400 to 1800	Irrigation, scouting, weeding, pruning, thinning, rake harvest of cranberries, mulching
Medium	N/A	N/A	N/A
High	1500	400 to 1800	for bluebernes or strawbernes: harvesting, hand pruning, pinching, training
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)		RISKS FOR PRIVATE GROWERS				RISKS FOR PROFESSIONAL FARMWORKERS			
					Low Exposure		High Exposure		Low Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.460	2.377	0.01380	0.05175	1.9E-04	1.7E-07	7.1E-04	6.2E-07	5.7E-04	5.0E-07	2.1E-03	1.9E-06
1	2.034	1.965	0.01141	0.04278	1.6E-04	1.4E-07	5.9E-04	5.1E-07	4.7E-04	4.1E-07	1.8E-03	1.5E-06
2	1.682	1.625	0.00943	0.03537	1.3E-04	1.1E-07	4.8E-04	4.2E-07	3.9E-04	3.4E-07	1.5E-03	1.3E-06
3	1.390	1.343	0.00780	0.02924	1.1E-04	9.3E-08	4.0E-04	3.5E-07	3.2E-04	2.8E-07	1.2E-03	1.1E-06
4	1.149	1.111	0.00645	0.02418	8.8E-05	7.7E-08	3.3E-04	2.9E-07	2.6E-04	2.3E-07	9.9E-04	8.7E-07
5	0.950	0.918	0.00533	0.01999	7.3E-05	6.4E-08	2.7E-04	2.4E-07	2.2E-04	1.9E-07	8.2E-04	7.2E-07
6	0.786	0.759	0.00441	0.01653	6.0E-05	5.3E-08	2.3E-04	2.0E-07	1.8E-04	1.6E-07	6.8E-04	5.9E-07
7	0.650	0.628	0.00364	0.01366	5.0E-05	4.4E-08	1.9E-04	1.6E-07	1.5E-04	1.3E-07	5.6E-04	4.9E-07
8	0.537	0.519	0.00301	0.01130	4.1E-05	3.6E-08	1.5E-04	1.4E-07	1.2E-04	1.1E-07	4.6E-04	4.1E-07
9	0.444	0.429	0.00249	0.00934	3.4E-05	3.0E-08	1.3E-04	1.1E-07	1.0E-04	9.0E-08	3.8E-04	3.4E-07
10	0.367	0.355	0.00206	0.00772	2.8E-05	2.5E-08	1.1E-04	9.3E-08	8.5E-05	7.4E-08	3.2E-04	2.8E-07
11	0.304	0.293	0.00170	0.00638	2.3E-05	2.0E-08	8.7E-05	7.7E-08	7.0E-05	6.1E-08	2.6E-04	2.3E-07
12	0.251	0.242	0.00141	0.00528	1.9E-05	1.7E-08	7.2E-05	6.3E-08	5.8E-05	5.1E-08	2.2E-04	1.9E-07
13	0.207	0.200	0.00116	0.00436	1.6E-05	1.4E-08	6.0E-05	5.2E-08	4.8E-05	4.2E-08	1.8E-04	1.6E-07
14	0.172	0.166	0.00096	0.00361	1.3E-05	1.2E-08	4.9E-05	4.3E-08	4.0E-05	3.5E-08	1.5E-04	1.3E-07
15	0.142	0.137	0.00080	0.00298	1.1E-05	9.5E-09	4.1E-05	3.6E-08	3.3E-05	2.9E-08	1.2E-04	1.1E-07
16	0.117	0.113	0.00066	0.00247	9.0E-06	7.9E-09	3.4E-05	3.0E-08	2.7E-05	2.4E-08	1.0E-04	8.9E-08
17	0.097	0.094	0.00054	0.00204	7.4E-06	6.5E-09	2.8E-05	2.4E-08	2.2E-05	2.0E-08	8.4E-05	7.3E-08
18	0.080	0.077	0.00045	0.00169	6.2E-06	5.4E-09	2.3E-05	2.0E-08	1.8E-05	1.6E-08	6.9E-05	6.1E-08
19	0.066	0.064	0.00037	0.00139	5.1E-06	4.5E-09	1.9E-05	1.7E-08	1.5E-05	1.3E-08	5.7E-05	5.0E-08
20	0.055	0.053	0.00031	0.00115	4.2E-06	3.7E-09	1.6E-05	1.4E-08	1.3E-05	1.1E-08	4.7E-05	4.1E-08
21	0.045	0.044	0.00025	0.00095	3.5E-06	3.0E-09	1.3E-05	1.1E-08	1.0E-05	9.1E-09	3.9E-05	3.4E-08
22	0.037	0.036	0.00021	0.00079	2.9E-06	2.5E-09	1.1E-05	9.4E-09	8.6E-06	7.6E-09	3.2E-05	2.8E-08
23	0.031	0.030	0.00017	0.00065	2.4E-06	2.1E-09	8.9E-06	7.8E-09	7.1E-06	6.2E-09	2.7E-05	2.3E-08
24	0.026	0.025	0.00014	0.00054	2.0E-06	1.7E-09	7.4E-06	6.5E-09	5.9E-06	5.2E-09	2.2E-05	1.9E-08
25	0.021	0.020	0.00012	0.00045	1.6E-06	1.4E-09	6.1E-06	5.3E-09	4.9E-06	4.3E-09	1.8E-05	1.6E-08
26	0.017	0.017	0.00010	0.00037	1.3E-06	1.2E-09	5.0E-06	4.4E-09	4.0E-06	3.5E-09	1.5E-05	1.3E-08
27	0.014	0.014	0.00008	0.00030	1.1E-06	9.7E-10	4.2E-06	3.6E-09	3.3E-06	2.9E-09	1.3E-05	1.1E-08
28	0.012	0.012	0.00007	0.00025	0.2E-07	8.0E-10	3.4E-06	3.0E-09	2.8E-06	2.4E-09	1.0E-05	9.0E-09
29	0.010	0.010	0.00006	0.00021	7.6E-07	6.6E-10	2.8E-06	2.5E-09	2.3E-06	2.0E-09	8.5E-06	7.5E-09
30	0.008	0.008	0.00005	0.00017	6.3E-07	5.5E-10	2.4E-06	2.1E-09	1.9E-06	1.6E-09	7.1E-06	6.2E-09

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Appendix C: Carbaryl Occupational Postapplication Noncancer Risk Assessment For Bunch/Bundle Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Bunch and bundle
Specific Crop(s) Considered:	hops, tobacco
Application Rate of Crop (lb ai/A)	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Tobacco Harvesting Study (Groundboom Application) MRID 45009959-11
Slope of Semilog Regression:	-0.20492
[Initial] (ug/cm2):	4.258
Study Application Rate (lb ai/A):	2
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	100	TBD	Irrigation, handweeding and scouting immature/low foliage plants
Medium	1300	1346 to 2308	Irrigation and scouting mature plants
High	2000	1346 to 2308	hand harvesting, stripping, training, thinning, topping, mechanical hop harvest
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	4.258	4.258	0.0487	0.6326	0.9733	1758	135	88
1	3.469	3.469	0.0396	0.5154	0.7929	2158	166	108
2	2.826	2.826	0.0323	0.4199	0.6460	2649	204	132
3	2.303	2.303	0.0263	0.3421	0.5263	3251	250	163
4	1.876	1.876	0.0214	0.2787	0.4288	3991	307	200
5	1.528	1.528	0.0175	0.2271	0.3493	4898	377	245
6	1.245	1.245	0.0142	0.1850	0.2846	6012	462	301
7	1.014	1.014	0.0116	0.1507	0.2319	7380	568	369
8	0.826	0.826	0.0094	0.1228	0.1889	9058	697	453
9	0.673	0.673	0.0077	0.1000	0.1539	11118	855	556
10	0.549	0.549	0.0063	0.0815	0.1254	13647	1050	682
11	0.447	0.447	0.0051	0.0664	0.1022	16750	1288	838
12	0.364	0.364	0.0042	0.0541	0.0832	20560	1582	1028
13	0.297	0.297	0.0034	0.0441	0.0678	25236	1941	1262
14	0.242	0.242	0.0028	0.0359	0.0552	30975	2383	1549
15	0.197	0.197	0.0023	0.0293	0.0450	38020	2925	1901
16	0.160	0.160	0.0018	0.0238	0.0367	46666	3590	2333
17	0.131	0.131	0.0015	0.0194	0.0299	57279	4406	2864
18	0.106	0.106	0.0012	0.0158	0.0243	70306	5408	3515
19	0.087	0.087	0.00099	0.0129	0.0198	86296	6638	4315
20	0.071	0.071	0.00081	0.0105	0.0162	105922	8148	5296
21	0.058	0.058	0.00066	0.0086	0.0132	130011	10001	6501
22	0.047	0.047	0.00054	0.0070	0.0107	159579	12275	7979
23	0.038	0.038	0.00044	0.0057	0.0087	195872	15067	9794
24	0.031	0.031	0.00036	0.0046	0.0071	240419	18494	12021
25	0.025	0.025	0.00029	0.0038	0.0058	295096	22700	14755
26	0.021	0.021	0.00024	0.0031	0.0047	362209	27862	18110
27	0.017	0.017	0.00019	0.0025	0.0038	444585	34199	22229
28	0.014	0.014	0.00016	0.0020	0.0031	545696	41977	27286
29	0.011	0.011	0.00013	0.0017	0.0026	669802	51523	33490
30	0.009	0.009	0.00010	0.0014	0.0021	822133	63241	41107
Int-Term (30 day average)	0.740	0.740	0.00846	0.10995	0.16915	10117	778	506

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D334881
Appendix C: Carbaryl Occupational Postapplication Cancer Risk Assessment For Bunch/Bundle Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Bunch and bundle
Specific Crop(s) Considered:	hops, tobacco
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if [illegible]):	1
Source:	ARTF Tobacco Harvesting Study (Late/Last Application), MRID 45000059-11
Slope of Semilog Regression:	-0.20492
[Initial] (ug/cm2):	4.258
Study Application Rate (lb ai/A):	2
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	100	TBD	irrigation, handweeding and scouting immature/low foliage plants
Medium	1300	1346 to 2308	irrigation and scouting mature plants
High	2000	1346 to 2308	hand harvesting, stripping, training, thinning, topping, mechanical hop harvest
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	4.2580	4.2580	0.006180	0.080342	0.123604	8.5E-05	7.4E-08	1.1E-03	9.6E-07	1.7E-03	1.5E-06	2.5E-04	2.2E-07	3.3E-03	2.9E-06	5.1E-03	4.4E-06
1	3.4690	3.4690	0.005035	0.065456	0.100701	6.9E-05	6.0E-08	9.0E-04	7.8E-07	1.4E-03	1.2E-06	2.1E-04	1.8E-07	2.7E-03	2.4E-06	4.1E-03	3.6E-06
2	2.8263	2.8263	0.004102	0.053328	0.082043	5.6E-05	4.9E-08	7.3E-04	6.4E-07	1.1E-03	9.8E-07	1.7E-04	1.5E-07	2.2E-03	1.9E-06	3.4E-03	3.0E-06
3	2.3026	2.3026	0.003342	0.043447	0.066841	4.6E-05	4.0E-08	6.0E-04	5.2E-07	9.2E-04	8.0E-07	1.4E-04	1.2E-07	1.8E-03	1.6E-06	2.7E-03	2.4E-06
4	1.8760	1.8760	0.002723	0.035397	0.054456	3.7E-05	3.3E-08	4.8E-04	4.2E-07	7.5E-04	6.5E-07	1.1E-04	9.8E-08	1.5E-03	1.3E-06	2.2E-03	2.0E-06
5	1.5284	1.5284	0.002218	0.028838	0.044366	3.0E-05	2.7E-08	4.0E-04	3.5E-07	6.1E-04	5.3E-07	9.1E-05	8.0E-08	1.2E-03	1.0E-06	1.8E-03	1.6E-06
6	1.2452	1.2452	0.001807	0.023495	0.036146	2.5E-05	2.2E-08	3.2E-04	2.8E-07	5.0E-04	4.3E-07	7.4E-05	6.5E-08	9.7E-04	8.4E-07	1.5E-03	1.3E-06
7	1.0145	1.0145	0.001472	0.019141	0.029448	2.0E-05	1.8E-08	2.6E-04	2.3E-07	4.0E-04	3.5E-07	6.1E-05	5.3E-08	7.9E-04	6.9E-07	1.2E-03	1.1E-06
8	0.8265	0.8265	0.001200	0.015595	0.023992	1.6E-05	1.4E-08	2.1E-04	1.9E-07	3.3E-04	2.9E-07	4.9E-05	4.3E-08	6.4E-04	5.6E-07	9.9E-04	8.6E-07
9	0.6734	0.6734	0.000977	0.012705	0.019547	1.3E-05	1.2E-08	1.7E-04	1.5E-07	2.7E-04	2.3E-07	4.0E-05	3.5E-08	5.2E-04	4.6E-07	8.0E-04	7.0E-07
10	0.5486	0.5486	0.000796	0.010351	0.015925	1.1E-05	9.5E-09	1.4E-04	1.2E-07	2.2E-04	1.9E-07	3.3E-05	2.9E-08	4.3E-04	3.7E-07	6.5E-04	5.7E-07
11	0.4469	0.4469	0.000649	0.008433	0.012974	8.9E-06	7.8E-09	1.2E-04	1.0E-07	1.8E-04	1.6E-07	2.7E-05	2.3E-08	3.5E-04	3.0E-07	5.3E-04	4.7E-07
12	0.3641	0.3641	0.000529	0.006871	0.010570	7.2E-06	6.3E-09	9.4E-05	8.2E-08	1.4E-04	1.3E-07	2.2E-05	1.9E-08	2.8E-04	2.5E-07	4.3E-04	3.8E-07
13	0.2967	0.2967	0.000431	0.005598	0.008612	5.9E-06	5.2E-09	7.7E-05	6.7E-08	1.2E-04	1.0E-07	1.8E-05	1.5E-08	2.3E-04	2.0E-07	3.5E-04	3.1E-07
14	0.2417	0.2417	0.000351	0.004560	0.007016	4.8E-06	4.2E-09	6.2E-05	5.5E-08	9.6E-05	8.4E-08	1.4E-05	1.3E-08	1.9E-04	1.6E-07	2.9E-04	2.5E-07
15	0.1969	0.1969	0.000286	0.003715	0.005716	3.9E-06	3.4E-09	5.1E-05	4.5E-08	7.8E-05	6.9E-08	1.2E-05	1.0E-08	1.5E-04	1.3E-07	2.3E-04	2.1E-07
16	0.1604	0.1604	0.000233	0.003027	0.004657	3.2E-06	2.8E-09	4.1E-05	3.6E-08	6.4E-05	5.6E-08	9.6E-06	8.4E-09	1.2E-04	1.1E-07	1.9E-04	1.7E-07
17	0.1307	0.1307	0.000190	0.002466	0.003794	2.6E-06	2.3E-09	3.4E-05	3.0E-08	5.2E-05	4.5E-08	7.8E-06	6.8E-09	1.0E-04	8.9E-08	1.6E-04	1.4E-07
18	0.1065	0.1065	0.000155	0.002009	0.003091	2.1E-06	1.9E-09	2.8E-05	2.4E-08	4.2E-05	3.7E-08	6.4E-06	5.6E-09	8.3E-05	7.2E-08	1.3E-04	1.1E-07
19	0.0868	0.0868	0.000126	0.001637	0.002518	1.7E-06	1.5E-09	2.2E-05	2.0E-08	3.4E-05	3.0E-08	5.2E-06	4.5E-09	6.7E-05	5.9E-08	1.0E-04	9.1E-08
20	0.0707	0.0707	0.000103	0.001334	0.002052	1.4E-06	1.2E-09	1.8E-05	1.6E-08	2.8E-05	2.5E-08	4.2E-06	3.7E-09	5.5E-05	4.8E-08	8.4E-05	7.4E-08
21	0.0576	0.0576	0.000084	0.001087	0.001672	1.1E-06	1.0E-09	1.5E-05	1.3E-08	2.3E-05	2.0E-08	3.4E-06	3.0E-09	4.5E-05	3.9E-08	6.9E-05	6.0E-08
22	0.0469	0.0469	0.000068	0.000885	0.001362	9.3E-07	8.2E-10	1.2E-05	1.1E-08	1.9E-05	1.6E-08	2.8E-06	2.4E-09	3.6E-05	3.2E-08	5.6E-05	4.9E-08
23	0.0382	0.0382	0.000055	0.000721	0.001110	7.6E-07	6.6E-10	9.9E-06	8.6E-09	1.5E-05	1.3E-08	2.3E-06	2.0E-09	3.0E-05	2.6E-08	4.6E-05	4.0E-08
24	0.0311	0.0311	0.000045	0.000588	0.000904	6.2E-07	5.4E-10	8.0E-06	7.0E-09	1.2E-05	1.1E-08	1.9E-06	1.6E-09	2.4E-05	2.1E-08	3.7E-05	3.3E-08
25	0.0254	0.0254	0.000037	0.000479	0.000736	5.0E-07	4.4E-10	6.6E-06	5.7E-09	1.0E-05	8.8E-09	1.5E-06	1.3E-09	2.0E-05	1.7E-08	3.0E-05	2.6E-08
26	0.0207	0.0207	0.000030	0.000390	0.000600	4.1E-07	3.6E-10	5.3E-06	4.7E-09	8.2E-06	7.2E-09	1.2E-06	1.1E-09	1.6E-05	1.4E-08	2.5E-05	2.2E-08
27	0.0168	0.0168	0.000024	0.000318	0.000489	3.3E-07	2.9E-10	4.4E-06	3.8E-09	6.7E-06	5.9E-09	1.0E-06	8.8E-10	1.3E-05	1.1E-08	2.0E-05	1.8E-08
28	0.0137	0.0137	0.000020	0.000259	0.000398	2.7E-07	2.4E-10	3.5E-06	3.1E-09	5.5E-06	4.8E-09	8.2E-07	7.2E-10	1.1E-05	9.3E-09	1.6E-05	1.4E-08
29	0.0112	0.0112	0.000016	0.000211	0.000324	2.2E-07	1.9E-10	2.9E-06	2.5E-09	4.4E-06	3.9E-09	6.7E-07	5.8E-10	8.7E-06	7.6E-09	1.3E-05	1.2E-08
30	0.0091	0.0091	0.000013	0.000172	0.000264	1.8E-07	1.6E-10	2.4E-06	2.1E-09	3.6E-06	3.2E-09	5.4E-07	4.8E-10	7.1E-06	6.2E-09	1.1E-05	9.5E-09

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Appendix C Carbaryl Occupational Postapplication: Noncancer Risk Assessment For Short/Medium Field Row Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Field/row crop, low/medium
Specific Crop(s) Considered:	Alfalfa, barley, stringbeans, dry beans and peas, canola, chick peas, cotton, flax, forage, mint, peanuts, green peas, rice safflower, sugarbeets, wheat
Application Rate of Crop (lb ai/A)	1.5

DFR Data Summary

Data Source (enter 1 if data available, 0 if not):	1
Source:	AHPP Cabbage Weeding Study (Groundboom Application) MRID 45191701
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	100	TBD	Irrigation, scouting, thinning, weeding immature/low foliage plants
Medium	1500	486 to 2760	Irrigation scouting weeding mature/high foliage plants
High	2500	486 to 2760	hand harvesting
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	2.460	1.783	0.0204	0.3056	0.5093	4200	280	168
1	2.034	1.474	0.0168	0.2527	0.4211	5080	339	203
2	1.682	1.218	0.0139	0.2089	0.3481	6144	410	246
3	1.390	1.007	0.0115	0.1727	0.2878	7431	495	297
4	1.149	0.833	0.0095	0.1428	0.2380	8988	599	360
5	0.950	0.689	0.0079	0.1180	0.1967	10872	725	435
6	0.786	0.569	0.0065	0.0976	0.1627	13150	877	526
7	0.650	0.471	0.0054	0.0807	0.1345	15905	1060	636
8	0.537	0.389	0.0044	0.0667	0.1112	19238	1283	770
9	0.444	0.322	0.0037	0.0552	0.0919	23268	1551	931
10	0.367	0.266	0.0030	0.0456	0.0760	28144	1876	1126
11	0.304	0.220	0.0025	0.0377	0.0628	34041	2269	1362
12	0.251	0.182	0.0021	0.0312	0.0520	41173	2745	1647
13	0.207	0.150	0.0017	0.0258	0.0430	49800	3320	1992
14	0.172	0.124	0.0014	0.0213	0.0355	60234	4016	2409
15	0.142	0.103	0.0012	0.0176	0.0294	72855	4857	2914
16	0.117	0.085	0.0010	0.0146	0.0243	88120	5875	3525
17	0.097	0.070	0.0008	0.0120	0.0201	106584	7106	4263
18	0.080	0.058	0.0007	0.0100	0.0166	128916	8594	5157
19	0.066	0.048	0.0005	0.0082	0.0137	155928	10395	6237
20	0.055	0.040	0.0005	0.0068	0.0113	188599	12573	7544
21	0.045	0.033	0.00038	0.0056	0.0094	228116	15208	9125
22	0.037	0.027	0.00031	0.0047	0.0078	275912	18394	11036
23	0.031	0.022	0.00026	0.0038	0.0064	333724	22248	13349
24	0.026	0.019	0.00021	0.0032	0.0053	403648	26910	16146
25	0.021	0.015	0.00018	0.0026	0.0044	488224	32548	19529
26	0.017	0.013	0.00014	0.0022	0.0036	590520	39368	23621
27	0.014	0.010	0.00012	0.0018	0.0030	714250	47617	28570
28	0.012	0.009	0.00010	0.0015	0.0025	863906	57594	34556
29	0.010	0.007	0.00008	0.0012	0.0020	1044918	69661	41797
30	0.008	0.006	0.00007	0.0010	0.0017	1263857	84257	50554
Int-Term (30 day average)	0.457	0.331	0.00378	0.05675	0.09458	22615	1508	905

D334881
Appendix C: Carbaryl Occupational Postapplication Cancer Risk Assessment For Low/Medium Row Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Field/row crop, low/medium
Specific Crop(s) Considered	Alfalfa, barley, stringbeans, dry beans and peas, canola, chick peas, cotton, flax, forage, mint, peanuts, green peas, rice safflower, sugarbeets, wheat
Application Rate of Crop (lb ai/A):	1.5

DFR Data Summary

Data Source (enter 1 if data available, 0 if default):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application, MRID 45191701)
Slope of Semilog Regression	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	100	TBD	Irrigation, scouting, thinning, weeding immature/low foliage plants
Medium	1500	486 to 2760	Irrigation, scouting, weeding mature/high foliage plants
High	2500	486 to 2760	hand harvesting
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.460	1.793	0.002587	0.038810	0.064683	3.5E-05	3.1E-08	5.3E-04	4.7E-07	8.9E-04	7.8E-07	1.1E-04	9.3E-08	1.6E-03	1.4E-06	2.7E-03	2.3E-06
1	2.034	1.474	0.002139	0.032087	0.053478	2.9E-05	2.6E-08	4.4E-04	3.8E-07	7.3E-04	6.4E-07	8.8E-05	7.7E-08	1.3E-03	1.2E-06	2.2E-03	1.9E-06
2	1.682	1.218	0.001769	0.026526	0.044214	2.4E-05	2.1E-08	3.6E-04	3.2E-07	6.1E-04	5.3E-07	7.3E-05	6.4E-08	1.1E-03	9.5E-07	1.8E-03	1.6E-06
3	1.390	1.007	0.001462	0.021933	0.036555	2.0E-05	1.8E-08	3.0E-04	2.6E-07	5.0E-04	4.4E-07	6.0E-05	5.3E-08	9.0E-04	7.9E-07	1.5E-03	1.3E-06
4	1.149	0.833	0.001209	0.018133	0.030222	1.7E-05	1.4E-08	2.5E-04	2.2E-07	4.1E-04	3.6E-07	5.0E-05	4.3E-08	7.5E-04	6.5E-07	1.2E-03	1.1E-06
5	0.950	0.689	0.000999	0.014992	0.024987	1.4E-05	1.2E-08	2.1E-04	1.8E-07	3.4E-04	3.0E-07	4.1E-05	3.6E-08	6.2E-04	5.4E-07	1.0E-03	9.0E-07
6	0.786	0.569	0.000826	0.012395	0.020658	1.1E-05	9.9E-09	1.7E-04	1.5E-07	2.8E-04	2.5E-07	3.4E-05	3.0E-08	5.1E-04	4.5E-07	8.5E-04	7.4E-07
7	0.650	0.471	0.000683	0.010248	0.017080	9.4E-06	8.2E-09	1.4E-04	1.2E-07	2.3E-04	2.0E-07	2.8E-05	2.5E-08	4.2E-04	3.7E-07	7.0E-04	6.1E-07
8	0.537	0.389	0.000565	0.008473	0.014121	7.7E-06	6.8E-09	1.2E-04	1.0E-07	1.9E-04	1.7E-07	2.3E-05	2.0E-08	3.5E-04	3.0E-07	5.8E-04	5.1E-07
9	0.444	0.322	0.000467	0.007005	0.011675	6.4E-06	5.6E-09	9.6E-05	8.4E-08	1.6E-04	1.4E-07	1.9E-05	1.7E-08	2.9E-04	2.5E-07	4.8E-04	4.2E-07
10	0.367	0.266	0.000386	0.005791	0.009652	5.3E-06	4.6E-09	7.9E-05	6.9E-08	1.3E-04	1.2E-07	1.6E-05	1.4E-08	2.4E-04	2.1E-07	4.0E-04	3.5E-07
11	0.304	0.220	0.000319	0.004788	0.007980	4.4E-06	3.8E-09	6.6E-05	5.7E-08	1.1E-04	9.6E-08	1.3E-05	1.1E-08	2.0E-04	1.7E-07	3.3E-04	2.9E-07
12	0.251	0.182	0.000264	0.003959	0.006598	3.6E-06	3.2E-09	5.4E-05	4.7E-08	9.0E-05	7.9E-08	1.1E-05	9.5E-09	1.6E-04	1.4E-07	2.7E-04	2.4E-07
13	0.207	0.150	0.000218	0.003273	0.005455	3.0E-06	2.6E-09	4.5E-05	3.9E-08	7.5E-05	6.5E-08	9.0E-06	7.8E-09	1.3E-04	1.2E-07	2.2E-04	2.0E-07
14	0.172	0.124	0.000180	0.002706	0.004510	2.5E-06	2.2E-09	3.7E-05	3.2E-08	6.2E-05	5.4E-08	7.4E-06	6.5E-09	1.1E-04	9.7E-08	1.9E-04	1.6E-07
15	0.142	0.103	0.000149	0.002237	0.003729	2.0E-06	1.8E-09	3.1E-05	2.7E-08	5.1E-05	4.5E-08	6.1E-06	5.4E-09	9.2E-05	8.0E-08	1.5E-04	1.3E-07
16	0.117	0.085	0.000123	0.001850	0.003083	1.7E-06	1.5E-09	2.5E-05	2.2E-08	4.2E-05	3.7E-08	5.1E-06	4.4E-09	7.6E-05	6.7E-08	1.3E-04	1.1E-07
17	0.097	0.070	0.000102	0.001529	0.002549	1.4E-06	1.2E-09	2.1E-05	1.8E-08	3.5E-05	3.1E-08	4.2E-06	3.7E-09	6.3E-05	5.5E-08	1.0E-04	9.2E-08
18	0.080	0.058	0.000084	0.001264	0.002107	1.2E-06	1.0E-09	1.7E-05	1.5E-08	2.9E-05	2.5E-08	3.5E-06	3.0E-09	5.2E-05	4.5E-08	8.7E-05	7.6E-08
19	0.066	0.048	0.000070	0.001045	0.001742	9.5E-07	8.4E-10	1.4E-05	1.3E-08	2.4E-05	2.1E-08	2.9E-06	2.5E-09	4.3E-05	3.8E-08	7.2E-05	6.3E-08
20	0.055	0.040	0.000058	0.000864	0.001440	7.9E-07	6.9E-10	1.2E-05	1.0E-08	2.0E-05	1.7E-08	2.4E-06	2.1E-09	3.6E-05	3.1E-08	5.9E-05	5.2E-08
21	0.045	0.033	0.000048	0.000715	0.001191	6.5E-07	5.7E-10	9.8E-06	8.6E-09	1.6E-05	1.4E-08	2.0E-06	1.7E-09	2.9E-05	2.6E-08	4.9E-05	4.3E-08
22	0.037	0.027	0.000039	0.000591	0.000985	5.4E-07	4.7E-10	8.1E-06	7.1E-09	1.3E-05	1.2E-08	1.6E-06	1.4E-09	2.4E-05	2.1E-08	4.0E-05	3.5E-08
23	0.031	0.022	0.000033	0.000488	0.000814	4.5E-07	3.9E-10	6.7E-06	5.9E-09	1.1E-05	9.8E-09	1.3E-06	1.2E-09	2.0E-05	1.8E-08	3.3E-05	2.9E-08
24	0.026	0.019	0.000027	0.000404	0.000673	3.7E-07	3.2E-10	5.5E-06	4.8E-09	9.2E-06	8.1E-09	1.1E-06	9.7E-10	1.7E-05	1.5E-08	2.8E-05	2.4E-08
25	0.021	0.015	0.000022	0.000334	0.000556	3.0E-07	2.7E-10	4.6E-06	4.0E-09	7.6E-06	6.7E-09	9.1E-07	8.0E-10	1.4E-05	1.2E-08	2.3E-05	2.0E-08
26	0.017	0.013	0.000018	0.000276	0.000460	2.5E-07	2.2E-10	3.8E-06	3.3E-09	6.3E-06	5.5E-09	7.6E-07	6.6E-10	1.1E-05	9.9E-09	1.9E-05	1.7E-08
27	0.014	0.010	0.000015	0.000228	0.000380	2.1E-07	1.8E-10	3.1E-06	2.7E-09	5.2E-06	4.6E-09	6.3E-07	5.5E-10	9.4E-06	8.2E-09	1.6E-05	1.4E-08
28	0.012	0.009	0.000013	0.000189	0.000314	1.7E-07	1.5E-10	2.6E-06	2.3E-09	4.3E-06	3.8E-09	5.2E-07	4.5E-10	7.8E-06	6.8E-09	1.3E-05	1.1E-08
29	0.010	0.007	0.000010	0.000156	0.000260	1.4E-07	1.2E-10	2.1E-06	1.9E-09	3.6E-06	3.1E-09	4.3E-07	3.7E-10	6.4E-06	5.6E-09	1.1E-05	9.3E-09
30	0.008	0.006	0.000009	0.000129	0.000215	1.2E-07	1.0E-10	1.8E-06	1.5E-09	2.9E-06	2.6E-09	3.5E-07	3.1E-10	5.3E-06	4.6E-09	8.8E-06	7.7E-09

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Appendix C: Carbaryl Occupational Postapplication Noncancer Risk Assessment For Tall Field Row Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Field/row crop, tall
Specific Crop(s) Considered:	Corn, sunflowers, sorghum, sweetcorn
Application Rate of Crop (lb ai/A)	2

DFR Data Summary

Data Source (enter 1 if data available, 2 if default):	1
Source	ARTF Sunflower Scouting Study (FW Aerial Applicator), MRID 450059-09
Slope of Semilog Regression	-0.13412
[Initial] (ug/cm2):	5.35
Study Application Rate (lb ai/A):	1.5
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	100	TBD	scouting, weeding immature/low foliage plants
Medium	400	418 to 1980	scouting, weeding more mature/foliaged plants
High	1000	418 to 1980	scouting, irrigation, weeding mature/full foliage plants
Very High	17000	6748 to 25254	sweetcorn hand harvest or detasseling

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)				MOES			
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Very High Exposure	Low Exposure	Medium Exposure	High Exposure	Very High Exposure
0	5.350	7.133	0.08152	0.32610	0.81524	13.85905	1050	262	105	6.2
1	4.678	6.238	0.07129	0.28517	0.71291	12.11953	1200	300	120	7.1
2	4.091	5.455	0.06234	0.24937	0.62343	10.59835	1372	343	137	8.1
3	3.578	4.770	0.05452	0.21807	0.54518	9.26810	1569	392	157	9.2
4	3.129	4.172	0.04768	0.19070	0.47675	8.10481	1795	449	179	10.6
5	2.736	3.648	0.04169	0.16677	0.41691	7.08754	2052	513	205	12.1
6	2.393	3.190	0.03646	0.14583	0.36459	6.19795	2347	587	235	13.8
7	2.092	2.790	0.03188	0.12753	0.31882	5.42001	2684	671	268	15.6
8	1.830	2.440	0.02788	0.11152	0.27881	4.73972	3069	767	307	18.1
9	1.600	2.133	0.02438	0.09753	0.24381	4.14482	3509	877	351	20.6
10	1.399	1.866	0.02132	0.08528	0.21321	3.62458	4013	1003	401	23.6
11	1.224	1.631	0.01864	0.07458	0.18645	3.16964	4589	1147	459	27.0
12	1.070	1.427	0.01630	0.06522	0.16305	2.77180	5248	1312	525	30.9
13	0.936	1.248	0.01426	0.05703	0.14258	2.42390	6001	1500	600	35.3
14	0.818	1.091	0.01247	0.04987	0.12469	2.11967	6862	1716	686	40.4
15	0.716	0.954	0.01090	0.04361	0.10904	1.85362	7847	1962	785	46.2
16	0.626	0.834	0.00954	0.03814	0.09535	1.62096	8973	2243	897	52.8
17	0.547	0.730	0.00834	0.03335	0.08338	1.41750	10261	2565	1026	60.4
18	0.479	0.638	0.00729	0.02917	0.07292	1.23959	11734	2933	1173	69.0
19	0.418	0.558	0.00638	0.02551	0.06376	1.08400	13418	3355	1342	78.9
20	0.366	0.488	0.00558	0.02230	0.05576	0.94794	15344	3836	1534	90.3
21	0.320	0.427	0.00488	0.01950	0.04876	0.82896	17546	4387	1755	103.2
22	0.280	0.373	0.00426	0.01706	0.04264	0.72491	20065	5016	2006	118.0
23	0.245	0.326	0.00373	0.01492	0.03729	0.63393	22945	5736	2294	135.0
24	0.214	0.285	0.00326	0.01304	0.03261	0.55436	26238	6559	2624	154.3
25	0.187	0.250	0.00285	0.01141	0.02852	0.48478	30004	7501	3000	176.5
26	0.164	0.218	0.00249	0.00997	0.02494	0.42393	34310	8578	3431	201.8
27	0.143	0.191	0.00218	0.00872	0.02181	0.37072	39235	9809	3923	230.8
28	0.125	0.167	0.00191	0.00763	0.01907	0.32419	44866	11217	4487	263.9
29	0.109	0.146	0.00167	0.00667	0.01668	0.28350	51306	12826	5131	301.6
30	0.096	0.128	0.00146	0.00583	0.01458	0.24792	58670	14667	5867	345.1
Int-Term (30 day average)	1.353	1.805	0.02062	0.08250	0.20624	3.50614	4148	1037	415	24.4

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Appendix C: Carbaryl Occupational Postapplication Cancer Risk Assessment For Tall Field Row Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Field/row crop, tall
Specific Crop(s) Considered:	Corn, sunflowers, sorghum, sweetcorn
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if dataglitch):	1
Source:	ARTF Sunflower Scouting Study (FW Aerial Application), MRID 46005B-09
Slope of Semilog Regression:	-0.13412
[initial] (ug/cm2):	5.35
Study Application Rate (lb ai/A):	1.5
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	100	TBD	scouting, weeding immature/low foliage plants
Medium	400	418 to 1980	scouting, weeding more mature/foliaged plants
High	1000	418 to 1980	scouting, irrigation, weeding mature/full foliage plants
Very High	17000	6748 to 25254	sweetcorn hand harvest or detasseling

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)				RISKS FOR PRIVATE GROWERS									
							Low Exposure		Medium Exposure		High Exposure		Very High Exposure		Low Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Very High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	5.350	7.133	0.01035	0.04141	0.10354	1.76010	1.4E-04	1.2E-07	5.7E-04	5.0E-07	1.4E-03	1.2E-06	2.4E-02	2.1E-05	4.3E-04	3.7E-07
1	4.678	6.238	0.00905	0.03622	0.09054	1.53918	1.2E-04	1.1E-07	5.0E-04	4.3E-07	1.2E-03	1.1E-06	2.1E-02	1.8E-05	3.7E-04	3.3E-07
2	4.091	5.455	0.00792	0.03167	0.07918	1.34599	1.1E-04	9.5E-08	4.3E-04	3.8E-07	1.1E-03	9.5E-07	1.8E-02	1.6E-05	3.3E-04	2.8E-07
3	3.578	4.770	0.00692	0.02770	0.06924	1.17705	9.5E-05	8.3E-08	3.8E-04	3.3E-07	9.5E-04	8.3E-07	1.6E-02	1.4E-05	2.8E-04	2.5E-07
4	3.129	4.172	0.00605	0.02422	0.06055	1.02931	8.3E-05	7.3E-08	3.3E-04	2.9E-07	8.3E-04	7.3E-07	1.4E-02	1.2E-05	2.5E-04	2.2E-07
5	2.736	3.648	0.00529	0.02118	0.05295	0.90012	7.3E-05	6.3E-08	2.9E-04	2.5E-07	7.3E-04	6.3E-07	1.2E-02	1.1E-05	2.2E-04	1.9E-07
6	2.393	3.190	0.00463	0.01852	0.04630	0.78714	6.3E-05	5.5E-08	2.5E-04	2.2E-07	6.3E-04	5.5E-07	1.1E-02	9.4E-06	1.9E-04	1.7E-07
7	2.092	2.790	0.00405	0.01620	0.04049	0.68834	5.5E-05	4.9E-08	2.2E-04	1.9E-07	5.5E-04	4.9E-07	9.4E-03	8.3E-06	1.7E-04	1.5E-07
8	1.830	2.440	0.00354	0.01416	0.03541	0.60194	4.9E-05	4.2E-08	1.9E-04	1.7E-07	4.9E-04	4.2E-07	8.2E-03	7.2E-06	1.5E-04	1.3E-07
9	1.600	2.133	0.00310	0.01239	0.03096	0.52639	4.2E-05	3.7E-08	1.7E-04	1.5E-07	4.2E-04	3.7E-07	7.2E-03	6.3E-06	1.3E-04	1.1E-07
10	1.399	1.866	0.00271	0.01083	0.02708	0.46032	3.7E-05	3.2E-08	1.5E-04	1.3E-07	3.7E-04	3.2E-07	6.3E-03	5.5E-06	1.1E-04	9.7E-08
11	1.224	1.631	0.00237	0.00947	0.02368	0.40254	3.2E-05	2.8E-08	1.3E-04	1.1E-07	3.2E-04	2.8E-07	5.5E-03	4.8E-06	9.7E-05	8.5E-08
12	1.070	1.427	0.00207	0.00828	0.02071	0.35202	2.8E-05	2.5E-08	1.1E-04	9.9E-08	2.8E-04	2.5E-07	4.8E-03	4.2E-06	8.5E-05	7.4E-08
13	0.936	1.248	0.00181	0.00724	0.01811	0.30784	2.5E-05	2.2E-08	9.9E-05	8.7E-08	2.5E-04	2.2E-07	4.2E-03	3.7E-06	7.4E-05	6.5E-08
14	0.818	1.091	0.00158	0.00633	0.01584	0.26920	2.2E-05	1.9E-08	8.7E-05	7.6E-08	2.2E-04	1.9E-07	3.7E-03	3.2E-06	6.5E-05	5.7E-08
15	0.716	0.954	0.00138	0.00554	0.01385	0.23541	1.9E-05	1.7E-08	7.6E-05	6.6E-08	1.9E-04	1.7E-07	3.2E-03	2.8E-06	5.7E-05	5.0E-08
16	0.626	0.834	0.00121	0.00484	0.01211	0.20586	1.7E-05	1.5E-08	6.6E-05	5.8E-08	1.7E-04	1.5E-07	2.8E-03	2.5E-06	5.0E-05	4.4E-08
17	0.547	0.730	0.00106	0.00424	0.01059	0.18002	1.5E-05	1.3E-08	5.8E-05	5.1E-08	1.5E-04	1.3E-07	2.5E-03	2.2E-06	4.4E-05	3.8E-08
18	0.479	0.638	0.00093	0.00370	0.00926	0.15743	1.3E-05	1.1E-08	5.1E-05	4.4E-08	1.3E-04	1.1E-07	2.2E-03	1.9E-06	3.8E-05	3.3E-08
19	0.418	0.558	0.00081	0.00324	0.00810	0.13767	1.1E-05	9.7E-09	4.4E-05	3.9E-08	1.1E-04	9.7E-08	1.9E-03	1.7E-06	3.3E-05	2.9E-08
20	0.366	0.488	0.00071	0.00283	0.00708	0.12039	9.7E-06	8.5E-09	3.9E-05	3.4E-08	9.7E-05	8.5E-08	1.6E-03	1.4E-06	2.9E-05	2.5E-08
21	0.320	0.427	0.00062	0.00248	0.00619	0.10528	8.5E-06	7.4E-09	3.4E-05	3.0E-08	8.5E-05	7.4E-08	1.4E-03	1.3E-06	2.5E-05	2.2E-08
22	0.280	0.373	0.00054	0.00217	0.00542	0.09206	7.4E-06	6.5E-09	3.0E-05	2.6E-08	7.4E-05	6.5E-08	1.3E-03	1.1E-06	2.2E-05	1.9E-08
23	0.245	0.326	0.00047	0.00189	0.00474	0.08051	6.5E-06	5.7E-09	2.6E-05	2.3E-08	6.5E-05	5.7E-08	1.1E-03	9.7E-07	1.9E-05	1.7E-08
24	0.214	0.285	0.00041	0.00166	0.00414	0.07040	5.7E-06	5.0E-09	2.3E-05	2.0E-08	5.7E-05	5.0E-08	9.6E-04	8.4E-07	1.7E-05	1.5E-08
25	0.187	0.250	0.00036	0.00145	0.00362	0.06157	5.0E-06	4.3E-09	2.0E-05	1.7E-08	5.0E-05	4.3E-08	8.4E-04	7.4E-07	1.5E-05	1.3E-08
26	0.164	0.218	0.00032	0.00127	0.00317	0.05384	4.3E-06	3.8E-09	1.7E-05	1.5E-08	4.3E-05	3.8E-08	7.4E-04	6.5E-07	1.3E-05	1.1E-08
27	0.143	0.191	0.00028	0.00111	0.00277	0.04708	3.8E-06	3.3E-09	1.5E-05	1.3E-08	3.8E-05	3.3E-08	6.4E-04	5.6E-07	1.1E-05	1.0E-08
28	0.125	0.167	0.00024	0.00097	0.00242	0.04117	3.3E-06	2.9E-09	1.3E-05	1.2E-08	3.3E-05	2.9E-08	5.6E-04	4.9E-07	1.0E-05	8.7E-09
29	0.109	0.146	0.00021	0.00085	0.00212	0.03600	2.9E-06	2.5E-09	1.2E-05	1.0E-08	2.9E-05	2.5E-08	4.9E-04	4.3E-07	8.7E-06	7.6E-09
30	0.096	0.128	0.00019	0.00074	0.00185	0.03149	2.5E-06	2.2E-09	1.0E-05	8.9E-09	2.5E-05	2.2E-08	4.3E-04	3.8E-07	7.6E-06	6.7E-09
31	0.084	0.112	0.00016	0.00065	0.00162	0.02753	2.2E-06	1.9E-09	8.9E-06	7.8E-09	2.2E-05	1.9E-08	3.8E-04	3.3E-07	6.7E-06	5.8E-09
32	0.073	0.098	0.00014	0.00057	0.00142	0.02408	1.9E-06	1.7E-09	7.8E-06	6.8E-09	1.9E-05	1.7E-08	3.3E-04	2.9E-07	5.8E-06	5.1E-09
33	0.064	0.085	0.00012	0.00050	0.00124	0.02106	1.7E-06	1.5E-09	6.8E-06	5.9E-09	1.7E-05	1.5E-08	2.9E-04	2.5E-07	5.1E-06	4.5E-09
34	0.056	0.075	0.00011	0.00043	0.00108	0.01841	1.5E-06	1.3E-09	5.9E-06	5.2E-09	1.5E-05	1.3E-08	2.5E-04	2.2E-07	4.5E-06	3.9E-09
35	0.049	0.065	0.00009	0.00038	0.00095	0.01610	1.3E-06	1.1E-09	5.2E-06	4.5E-09	1.3E-05	1.1E-08	2.2E-04	1.9E-07	3.9E-06	3.4E-09

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Appendix C: Carbaryl Occupational Postapplication Noncancer Risk Assessment For Tall Field Row Crop Group (Sunflower)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Fieldrow crop, tall
Specific Crop(s) Considered:	Corn, sunflowers, sorghum, sweetcorn
Application Rate of Crop (lb ai/A):	1.5

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Sunflower Scouting Study (FW Aerial Application), MRID 450059-09
Slope of Semilog Regression:	-0.13412
[Initial] (ug/cm2):	5.35
Study Application Rate (lb ai/A):	1.5
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	100	TBD	scouting, weeding immature/low foliage plants
Medium	400	418 to 1980	scouting, weeding more mature/foliaged plants
High	1000	418 to 1980	scouting, irrigation, weeding mature/full foliage plants
Very High	17000	6748 to 25254	sweetcorn hand harvest or detasseling

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)				MOES	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Very High Exposure	Low Exposure	Medium Exposure
0	5.350	5.350	0.06114	0.24457	0.61143	10.39429	1399	350
1	4.678	4.678	0.05347	0.21387	0.53469	9.08965	1600	400
2	4.091	4.091	0.04676	0.18703	0.46757	7.94876	1830	457
3	3.578	3.578	0.04089	0.16355	0.40889	6.95107	2093	523
4	3.129	3.129	0.03576	0.14303	0.35757	6.07861	2393	598
5	2.736	2.736	0.03127	0.12507	0.31269	5.31565	2736	684
6	2.393	2.393	0.02734	0.10938	0.27344	4.64846	3129	782
7	2.092	2.092	0.02391	0.09565	0.23912	4.06501	3578	895
8	1.830	1.830	0.02091	0.08364	0.20911	3.55479	4092	1023
9	1.600	1.600	0.01829	0.07314	0.18286	3.10861	4679	1170
10	1.399	1.399	0.01599	0.06396	0.15991	2.71843	5351	1338
11	1.224	1.224	0.01398	0.05593	0.13984	2.37723	6119	1530
12	1.070	1.070	0.01223	0.04891	0.12229	2.07885	6997	1749
13	0.936	0.936	0.01069	0.04277	0.10694	1.81793	8001	2000
14	0.818	0.818	0.00935	0.03741	0.09351	1.58975	9149	2287
15	0.716	0.716	0.00818	0.03271	0.08178	1.39021	10463	2616
16	0.626	0.626	0.00715	0.02861	0.07151	1.21572	11964	2991
17	0.547	0.547	0.00625	0.02501	0.06254	1.06313	13682	3420
18	0.479	0.479	0.00547	0.02188	0.05469	0.92969	15645	3911
19	0.418	0.418	0.00478	0.01913	0.04782	0.81300	17891	4473
20	0.366	0.366	0.00418	0.01673	0.04182	0.71096	20459	5115
21	0.320	0.320	0.00366	0.01463	0.03657	0.62172	23395	5849
22	0.280	0.280	0.00320	0.01279	0.03198	0.54369	26753	6688
23	0.245	0.245	0.00280	0.01119	0.02797	0.47545	30593	7648
24	0.214	0.214	0.00245	0.00978	0.02446	0.41577	34984	8746
25	0.187	0.187	0.00214	0.00855	0.02139	0.36358	40005	10001
26	0.164	0.164	0.00187	0.00748	0.01870	0.31795	45747	11437
27	0.143	0.143	0.00164	0.00654	0.01636	0.27804	52313	13078

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28	0.125	0.125	0.00143	0.00572	0.01430	0.24314	59821	14955
29	0.109	0.109	0.00125	0.00500	0.01251	0.21263	68408	17102
30	0.096	0.096	0.00109	0.00438	0.01094	0.18594	78226	19557
Int-Term (30 day average)	1.353	1.353	0.01547	0.06187	0.15468	2.62960	5531	1383

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Appendix C: Carbaryl Occupational Postapplication Cancer Risk Assessment For Tall Field Row Crop Group (Sunflower)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group	Field/row crop, tall
Specific Crop(s) Considered	Corn, sunflowers, sorghum, sweetcorn
Application Rate of Crop (lb ai/A)	1.5

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Sunflower Scouting Study (FW Aerial Application), MRID 450059-09
Slope of Semilog Regression:	-0.13412
[Initial] (ug/cm2):	5.35
Study Application Rate (lb ai/A):	1.5
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	100	TBD	scouting, weeding immature/low foliage plants
Medium	400	418 to 1980	scouting, weeding more mature/foliaged plants
High	1000	418 to 1980	scouting, irrigation, weeding mature/full foliage plants
Very High	17000	6748 to 25254	sweetcorn hand harvest or detasseling

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)				RISKS FOR PRIVATE GROWERS				RISKS FOR PROFESSIONAL FARMWORKERS			
							Low Exposure		Medium Exposure		Low Exposure		Medium Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Very High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	5.350	5.350	0.00777	0.03106	0.07765	1.32007	1.1E-04	9.3E-08	4.3E-04	3.7E-07	3.2E-04	2.8E-07	1.3E-03	1.1E-06
1	4.678	4.678	0.00679	0.02716	0.06791	1.15439	9.3E-05	8.1E-08	3.7E-04	3.3E-07	2.8E-04	2.4E-07	1.1E-03	9.8E-07
2	4.091	4.091	0.00594	0.02375	0.05938	1.00949	8.1E-05	7.1E-08	3.3E-04	2.8E-07	2.4E-04	2.1E-07	9.8E-04	8.5E-07
3	3.578	3.578	0.00519	0.02077	0.05193	0.88279	7.1E-05	6.2E-08	2.8E-04	2.5E-07	2.1E-04	1.9E-07	8.5E-04	7.5E-07
4	3.129	3.129	0.00454	0.01816	0.04541	0.77198	6.2E-05	5.4E-08	2.5E-04	2.2E-07	1.9E-04	1.6E-07	7.5E-04	6.5E-07
5	2.736	2.736	0.00397	0.01588	0.03971	0.67509	5.4E-05	4.8E-08	2.2E-04	1.9E-07	1.6E-04	1.4E-07	6.5E-04	5.7E-07
6	2.393	2.393	0.00347	0.01389	0.03473	0.59035	4.8E-05	4.2E-08	1.9E-04	1.7E-07	1.4E-04	1.2E-07	5.7E-04	5.0E-07
7	2.092	2.092	0.00304	0.01215	0.03037	0.51626	4.2E-05	3.6E-08	1.7E-04	1.5E-07	1.2E-04	1.1E-07	5.0E-04	4.4E-07
8	1.830	1.830	0.00266	0.01062	0.02656	0.45146	3.6E-05	3.2E-08	1.5E-04	1.3E-07	1.1E-04	9.5E-08	4.4E-04	3.8E-07
9	1.600	1.600	0.00232	0.00929	0.02322	0.39479	3.2E-05	2.8E-08	1.3E-04	1.1E-07	9.5E-05	8.4E-08	3.8E-04	3.3E-07
10	1.399	1.399	0.00203	0.00812	0.02031	0.34524	2.8E-05	2.4E-08	1.1E-04	9.7E-08	8.3E-05	7.3E-08	3.3E-04	2.9E-07
11	1.224	1.224	0.00178	0.00710	0.01776	0.30191	2.4E-05	2.1E-08	9.7E-05	8.5E-08	7.3E-05	6.4E-08	2.9E-04	2.6E-07
12	1.070	1.070	0.00155	0.00621	0.01553	0.26401	2.1E-05	1.9E-08	8.5E-05	7.4E-08	6.4E-05	5.6E-08	2.6E-04	2.2E-07
13	0.936	0.936	0.00136	0.00543	0.01358	0.23088	1.9E-05	1.6E-08	7.4E-05	6.5E-08	5.6E-05	4.9E-08	2.2E-04	2.0E-07
14	0.818	0.818	0.00119	0.00475	0.01188	0.20190	1.6E-05	1.4E-08	6.5E-05	5.7E-08	4.9E-05	4.3E-08	2.0E-04	1.7E-07
15	0.716	0.716	0.00104	0.00415	0.01039	0.17656	1.4E-05	1.2E-08	5.7E-05	5.0E-08	4.3E-05	3.7E-08	1.7E-04	1.5E-07
16	0.626	0.626	0.00091	0.00363	0.00908	0.15440	1.2E-05	1.1E-08	5.0E-05	4.4E-08	3.7E-05	3.3E-08	1.5E-04	1.3E-07
17	0.547	0.547	0.00079	0.00318	0.00794	0.13502	1.1E-05	9.5E-09	4.4E-05	3.8E-08	3.3E-05	2.9E-08	1.3E-04	1.1E-07
18	0.479	0.479	0.00069	0.00278	0.00695	0.11807	9.5E-06	8.3E-09	3.8E-05	3.3E-08	2.9E-05	2.5E-08	1.1E-04	1.0E-07
19	0.418	0.418	0.00061	0.00243	0.00607	0.10325	8.3E-06	7.3E-09	3.3E-05	2.9E-08	2.5E-05	2.2E-08	1.0E-04	8.7E-08
20	0.366	0.366	0.00053	0.00212	0.00531	0.09029	7.3E-06	6.4E-09	2.9E-05	2.5E-08	2.2E-05	1.9E-08	8.7E-05	7.6E-08
21	0.320	0.320	0.00046	0.00186	0.00464	0.07896	6.4E-06	5.6E-09	2.5E-05	2.2E-08	1.9E-05	1.7E-08	7.6E-05	6.7E-08
22	0.280	0.280	0.00041	0.00162	0.00406	0.06905	5.6E-06	4.9E-09	2.2E-05	1.9E-08	1.7E-05	1.5E-08	6.7E-05	5.8E-08
23	0.245	0.245	0.00036	0.00142	0.00355	0.06038	4.9E-06	4.3E-09	1.9E-05	1.7E-08	1.5E-05	1.3E-08	5.8E-05	5.1E-08
24	0.214	0.214	0.00031	0.00124	0.00311	0.05280	4.3E-06	3.7E-09	1.7E-05	1.5E-08	1.3E-05	1.1E-08	5.1E-05	4.5E-08
25	0.187	0.187	0.00027	0.00109	0.00272	0.04618	3.7E-06	3.3E-09	1.5E-05	1.3E-08	1.1E-05	9.8E-09	4.5E-05	3.9E-08
26	0.164	0.164	0.00024	0.00095	0.00238	0.04038	3.3E-06	2.8E-09	1.3E-05	1.1E-08	9.8E-06	8.5E-09	3.9E-05	3.4E-08
27	0.143	0.143	0.00021	0.00083	0.00208	0.03531	2.8E-06	2.5E-09	1.1E-05	1.0E-08	8.5E-06	7.5E-09	3.4E-05	3.0E-08

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28	0.125	0.125	0.00018	0.00073	0.00182	0.03088	2.5E-06	2.2E-09	1.0E-05	8.7E-09	7.5E-06	6.5E-09	3.0E-05	2.6E-08
29	0.109	0.109	0.00016	0.00064	0.00159	0.02700	2.2E-06	1.9E-09	8.7E-06	7.6E-09	6.5E-06	5.7E-09	2.6E-05	2.3E-08
30	0.096	0.096	0.00014	0.00056	0.00139	0.02361	1.9E-06	1.7E-09	7.6E-06	6.7E-09	5.7E-06	5.0E-09	2.3E-05	2.0E-08
31	0.084	0.084	0.00012	0.00049	0.00121	0.02065	1.7E-06	1.5E-09	6.7E-06	5.8E-09	5.0E-06	4.4E-09	2.0E-05	1.7E-08
32	0.073	0.073	0.00011	0.00042	0.00106	0.01806	1.5E-06	1.3E-09	5.8E-06	5.1E-09	4.4E-06	3.8E-09	1.7E-05	1.5E-08
33	0.064	0.064	0.00009	0.00037	0.00093	0.01579	1.3E-06	1.1E-09	5.1E-06	4.5E-09	3.8E-06	3.3E-09	1.5E-05	1.3E-08
34	0.056	0.056	0.00008	0.00032	0.00081	0.01381	1.1E-06	9.7E-10	4.5E-06	3.9E-09	3.3E-06	2.9E-09	1.3E-05	1.2E-08
35	0.049	0.049	0.00007	0.00028	0.00071	0.01208	9.7E-07	8.5E-10	3.9E-06	3.4E-09	2.9E-06	2.5E-09	1.2E-05	1.0E-08

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Appendix C Carbaryl Occupational Postapplication Noncancer Risk Assessment For The Cut Flower Crop Group (GA Data)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR and Updated Hazard Data
Date:	39262
Transfer Coefficient Group	Cut Flowers
Specific Crop(s) Considered	Floriculture Crops
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	IR4 Chrysanthemum Study (MRID 468928-01) - GA Data
Slope of Semilog Regression:	-0.2349
[Initial] (ug/cm2):	0.782
Study Application Rate (lb ai/A):	1.02
Limit of Quantification (ug/cm2):	0.003

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	2500	2400 to 13000	Irrigation, scouting, thinning, weeding immature/low foliage plants
Medium	4000	2400 to 13000	Irrigation, scouting mature/high foliage plants
High	5100	2400 to 13000	hand harvesting, pruning, thinning, pinching
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	0.782	1.533	0.43810	0.70095	0.89371	195.3	122.1	95.7
1	0.618	1.212	0.34638	0.55421	0.70662	247.0	154.4	121.1
2	0.489	0.959	0.27387	0.43818	0.55869	312.4	195.3	153.1
3	0.387	0.758	0.21653	0.34645	0.44172	395.1	247.0	193.7
4	0.306	0.599	0.17120	0.27392	0.34925	499.8	312.4	245.0
5	0.242	0.474	0.13536	0.21658	0.27613	632.1	395.1	309.8
6	0.191	0.375	0.10702	0.17124	0.21833	799.5	499.7	391.9
7	0.151	0.296	0.08462	0.13539	0.17262	1011.1	632.0	495.7
8	0.119	0.234	0.06690	0.10704	0.13648	1278.9	799.3	626.9
9	0.094	0.185	0.05290	0.08463	0.10791	1617.5	1010.9	792.9
10	0.075	0.146	0.04182	0.06692	0.08532	2045.8	1278.6	1002.8
11	0.059	0.116	0.03307	0.05291	0.06746	2587.5	1617.2	1268.4
12	0.047	0.092	0.02614	0.04183	0.05333	3272.6	2045.4	1604.2
13	0.037	0.072	0.02067	0.03307	0.04217	4139.1	2586.9	2029.0
14	0.029	0.057	0.01634	0.02615	0.03334	5235.1	3271.9	2566.2
15	0.023	0.045	0.01292	0.02068	0.02636	6621.2	4138.3	3245.7
16	0.018	0.036	0.01022	0.01635	0.02084	8374.4	5234.0	4105.1
17	0.014	0.028	0.00808	0.01292	0.01648	10591.8	6619.9	5192.1
18	0.011	0.022	0.00639	0.01022	0.01303	13396.3	8372.7	6566.8
19	0.009	0.018	0.00505	0.00808	0.01030	16943.5	10589.7	8305.6
20	0.007	0.014	0.00399	0.00639	0.00814	21429.8	13393.6	10504.8
21	0.006	0.011	0.00316	0.00505	0.00644	27104.0	16940.0	13286.3
22	0.004	0.009	0.00250	0.00399	0.00509	34280.7	21425.4	16804.2
23	0.004	0.007	0.00197	0.00316	0.00403	43357.6	27098.5	21253.7
24	0.003	0.005	0.00156	0.00250	0.00318	54837.9	34273.7	26881.3
25	0.002	0.004	0.00123	0.00197	0.00252	69358.0	43348.8	33999.0
26	0.002	0.003	0.00098	0.00156	0.00199	87722.8	54826.7	43001.4
27	0.001	0.003	0.00077	0.00123	0.00157	110950.2	69343.9	54387.4

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28	0.001	0.002	0.00061	0.00098	0.00124	140327.9	87704.9	68786.2
29	0.001	0.002	0.00048	0.00077	0.00098	177484.2	110927.6	87002.1
30	0.001	0.001	0.00030	0.00061	0.00078	224478.9	140299.3	110038.7
Int-Term	0.120	0.236	0.06746	0.10793	0.13761	1268	793	622
0 day average)								
Chronic	0.120	0.236	0.00857	0.01371	0.01748	9986.9	6241.8	4895.6

D334881
Appendix C: Carbaryl Occupational Postapplication Cancer Risk Assessment For The Cut Flower Crop Group (GA Data)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)
Chemical: Carbaryl
Reason: TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date: 39262
Transfer Coefficient Group: Cut Flowers
Specific Crop(s) Considered: Floriculture Crops
Application Rate of Crop (lb 2

DFR Data Summary
Data Source (enter 1 if data available): 0 or 1
Source: IR4 Chrysanthemum Study (MRID 468928-01) - GA Data
Slope of Semilog Regression: -0.2349
[Initial] (ug/cm2): 0.782
Study Application Rate (lb ai/A): 1.02
Limit of Quantification (ug/cm2): 0.003
[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/ho		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	2500	2400 to 13000	Irrigation, scouting, thinning, weeding: immature/low foliage plants
Medium	4000	2400 to 13000	Irrigation, scouting mature/high foliage plants
High	5100	2400 to 13000	hand harvesting, pruning, thinning, pinching
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	justed For Ra	Low Exposure	edium Exposu	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	0.782	1.533	0.0556	0.0890	0.1135	7.6E-04	6.7E-07	1.2E-03	1.1E-06	1.6E-03	1.4E-06	2.3E-03	2.0E-06	3.7E-03	3.2E-06	4.7E-03	4.1E-06
1	0.618	1.212	0.0440	0.0704	0.0897	6.0E-04	5.3E-07	9.6E-04	8.4E-07	1.2E-03	1.1E-06	1.8E-03	1.6E-06	2.9E-03	2.5E-06	3.7E-03	3.2E-06
2	0.489	0.959	0.0348	0.0556	0.0710	4.8E-04	4.2E-07	7.6E-04	6.7E-07	9.7E-04	8.5E-07	1.4E-03	1.3E-06	2.3E-03	2.0E-06	2.9E-03	2.6E-06
3	0.387	0.758	0.0275	0.0440	0.0561	3.8E-04	3.3E-07	6.0E-04	5.3E-07	7.7E-04	6.7E-07	1.1E-03	9.9E-07	1.8E-03	1.6E-06	2.3E-03	2.0E-06
4	0.306	0.599	0.0217	0.0348	0.0444	3.0E-04	2.6E-07	4.8E-04	4.2E-07	6.1E-04	5.3E-07	8.9E-04	7.8E-07	1.4E-03	1.3E-06	1.8E-03	1.6E-06
5	0.242	0.474	0.0172	0.0275	0.0351	2.4E-04	2.1E-07	3.8E-04	3.3E-07	4.8E-04	4.2E-07	7.1E-04	6.2E-07	1.1E-03	9.9E-07	1.4E-03	1.3E-06
6	0.191	0.375	0.0136	0.0217	0.0277	1.9E-04	1.6E-07	3.0E-04	2.6E-07	3.8E-04	3.3E-07	5.6E-04	4.9E-07	8.9E-04	7.8E-07	1.1E-03	1.0E-06
7	0.151	0.296	0.0107	0.0172	0.0219	1.5E-04	1.3E-07	2.4E-04	2.1E-07	3.0E-04	2.6E-07	4.4E-04	3.9E-07	7.1E-04	6.2E-07	9.0E-04	7.9E-07
8	0.119	0.234	0.0085	0.0136	0.0173	1.2E-04	1.0E-07	1.9E-04	1.6E-07	2.4E-04	2.1E-07	3.5E-04	3.1E-07	5.6E-04	4.9E-07	7.1E-04	6.2E-07
9	0.094	0.185	0.0067	0.0107	0.0137	9.2E-05	8.1E-08	1.5E-04	1.3E-07	1.9E-04	1.6E-07	2.8E-04	2.4E-07	4.4E-04	3.9E-07	5.6E-04	4.9E-07
10	0.075	0.146	0.0053	0.0085	0.0108	7.3E-05	6.4E-08	1.2E-04	1.0E-07	1.5E-04	1.3E-07	2.2E-04	1.9E-07	3.5E-04	3.1E-07	4.5E-04	3.9E-07
11	0.059	0.116	0.0042	0.0067	0.0086	5.8E-05	5.0E-08	9.2E-05	8.1E-08	1.2E-04	1.0E-07	1.7E-04	1.5E-07	2.8E-04	2.4E-07	3.5E-04	3.1E-07
12	0.047	0.092	0.0033	0.0053	0.0068	4.5E-05	4.0E-08	7.3E-05	6.4E-08	9.3E-05	8.1E-08	1.4E-04	1.2E-07	2.2E-04	1.9E-07	2.8E-04	2.4E-07
13	0.037	0.072	0.0026	0.0042	0.0054	3.6E-05	3.1E-08	5.8E-05	5.0E-08	7.3E-05	6.4E-08	1.1E-04	9.4E-08	1.7E-04	1.5E-07	2.2E-04	1.9E-07
14	0.029	0.057	0.0021	0.0033	0.0042	2.8E-05	2.5E-08	4.5E-05	4.0E-08	5.8E-05	5.1E-08	8.5E-05	7.5E-08	1.4E-04	1.2E-07	1.7E-04	1.5E-07
15	0.023	0.045	0.0016	0.0026	0.0033	2.2E-05	2.0E-08	3.6E-05	3.1E-08	4.6E-05	4.0E-08	6.7E-05	5.9E-08	1.1E-04	9.4E-08	1.4E-04	1.2E-07
16	0.018	0.036	0.0013	0.0021	0.0026	1.8E-05	1.6E-08	2.8E-05	2.5E-08	3.6E-05	3.2E-08	5.3E-05	4.7E-08	8.5E-05	7.5E-08	1.1E-04	9.5E-08
17	0.014	0.028	0.0010	0.0016	0.0021	1.4E-05	1.2E-08	2.2E-05	2.0E-08	2.9E-05	2.5E-08	4.2E-05	3.7E-08	6.7E-05	5.9E-08	8.6E-05	7.5E-08
18	0.011	0.022	0.0008	0.0013	0.0017	1.1E-05	9.7E-09	1.8E-05	1.6E-08	2.3E-05	2.0E-08	3.3E-05	2.9E-08	5.3E-05	4.7E-08	6.8E-05	6.0E-08
19	0.009	0.018	0.0006	0.0010	0.0013	8.8E-06	7.7E-09	1.4E-05	1.2E-08	1.8E-05	1.6E-08	2.6E-05	2.3E-08	4.2E-05	3.7E-08	5.4E-05	4.7E-08
20	0.007	0.014	0.0005	0.0008	0.0010	6.9E-06	6.1E-09	1.1E-05	9.7E-09	1.4E-05	1.2E-08	2.1E-05	1.8E-08	3.3E-05	2.9E-08	4.3E-05	3.7E-08
21	0.006	0.011	0.0004	0.0006	0.0008	5.5E-06	4.8E-09	8.8E-06	7.7E-09	1.1E-05	9.8E-09	1.6E-05	1.4E-08	2.6E-05	2.3E-08	3.4E-05	2.9E-08
22	0.004	0.009	0.0003	0.0005	0.0006	4.3E-06	3.8E-09	6.9E-06	6.1E-09	8.9E-06	7.8E-09	1.3E-05	1.1E-08	2.1E-05	1.8E-08	2.7E-05	2.3E-08
23	0.004	0.007	0.0003	0.0004	0.0005	3.4E-06	3.0E-09	5.5E-06	4.8E-09	7.0E-06	6.1E-09	1.0E-05	9.0E-09	1.6E-05	1.4E-08	2.1E-05	1.8E-08
24	0.003	0.005	0.0002	0.0003	0.0004	2.7E-06	2.4E-09	4.3E-06	3.8E-09	5.5E-06	4.8E-09	8.1E-06	7.1E-09	1.3E-05	1.1E-08	1.7E-05	1.5E-08
25	0.002	0.004	0.0002	0.0003	0.0003	2.1E-06	1.9E-09	3.4E-06	3.0E-09	4.4E-06	3.8E-09	6.4E-06	5.6E-09	1.0E-05	9.0E-09	1.3E-05	1.1E-08
26	0.002	0.003	0.0001	0.0002	0.0003	1.7E-06	1.5E-09	2.7E-06	2.4E-09	3.5E-06	3.0E-09	5.1E-06	4.5E-09	8.1E-06	7.1E-09	1.0E-05	9.1E-09
27	0.001	0.003	0.0001	0.0002	0.0002	1.3E-06	1.2E-09	2.1E-06	1.9E-09	2.7E-06	2.4E-09	4.0E-06	3.5E-09	6.4E-06	5.6E-09	8.2E-06	7.2E-09
28	0.001	0.002	0.0001	0.0001	0.0002	1.1E-06	9.3E-10	1.7E-06	1.5E-09	2.2E-06	1.9E-09	3.2E-06	2.8E-09	5.1E-06	4.5E-09	6.5E-06	5.7E-09
29	0.001	0.002	0.0001	0.0001	0.0001	8.4E-07	7.3E-10	1.3E-06	1.2E-09	1.7E-06	1.5E-09	2.5E-06	2.2E-09	4.0E-06	3.5E-09	5.1E-06	4.5E-09
30	0.001	0.001	0.0000	0.0001	0.0001	6.6E-07	5.8E-10	1.1E-06	9.3E-10	1.4E-06	1.2E-09	2.0E-06	1.7E-09	3.2E-06	2.8E-09	4.1E-06	3.6E-09

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Appendix C: Carbaryl Occupational Postapplication Noncancer Risk Assessment For The Cut Flower Crop Group (WA Data)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1 Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Cut Flowers
Specific Crop(s) Considered:	Floriculture Crops
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	iR4 Chrysanthemum Study (MRID 468928-01) - WA Data
Slope of Semilog Regression:	-0.0829
[Initial] (ug/cm2):	3.34
Study Application Rate (lb ai/A):	1.06
Limit of Quantification (ug/cm2):	0.003

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	2500	2400 to 13000	Irrigation, scouting, thinning, weeding immature/low foliage plants
Medium	4000	2400 to 13000	Irrigation, scouting mature/high foliage plants
High	5100	2400 to 13000	hand harvesting, pruning, thinning, pinching
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	3.340	6.302	1.80054	2.88086	3.67310	47.5	29.7	23.3
1	3.074	5.801	1.65729	2.65167	3.38088	51.6	32.3	25.3
2	2.830	5.339	1.52544	2.44071	3.11191	56.1	35.1	27.5
3	2.605	4.914	1.40409	2.24654	2.86433	60.9	38.1	29.9
4	2.397	4.523	1.29238	2.06781	2.63646	66.2	41.4	32.5
5	2.207	4.163	1.18956	1.90330	2.42671	71.9	45.0	35.3
6	2.031	3.832	1.09493	1.75188	2.23365	78.1	48.8	38.3
7	1.869	3.527	1.00782	1.61251	2.05595	84.9	53.1	41.6
8	1.721	3.247	0.92764	1.48422	1.89238	92.2	57.6	45.2
9	1.584	2.988	0.85384	1.36614	1.74183	100.2	62.6	49.1
10	1.458	2.751	0.78591	1.25745	1.60325	108.9	68.0	53.4
11	1.342	2.532	0.72338	1.15742	1.47571	118.3	73.9	58.0
12	1.235	2.330	0.66583	1.06534	1.35830	128.5	80.3	63.0
13	1.137	2.145	0.61286	0.98058	1.25024	139.6	87.3	68.4
14	1.046	1.974	0.56411	0.90257	1.15078	151.7	94.8	74.3
15	0.963	1.817	0.51923	0.83076	1.05922	164.8	103.0	80.8
16	0.887	1.673	0.47792	0.76467	0.97495	179.0	111.9	87.8
17	0.816	1.540	0.43990	0.70384	0.89739	194.5	121.6	95.3
18	0.751	1.417	0.40490	0.64784	0.82600	211.3	132.1	103.6
19	0.691	1.304	0.37269	0.59630	0.76028	229.6	143.5	112.5
20	0.636	1.201	0.34304	0.54886	0.69980	249.4	155.9	122.3
21	0.586	1.105	0.31575	0.50520	0.64412	271.0	169.4	132.8
22	0.539	1.017	0.29063	0.46500	0.59288	294.4	184.0	144.3
23	0.496	0.936	0.26751	0.42801	0.54571	319.8	199.9	156.8
24	0.457	0.862	0.24622	0.39396	0.50230	347.5	217.2	170.3
25	0.420	0.793	0.22664	0.36262	0.46234	377.5	236.0	185.1
26	0.387	0.730	0.20860	0.33377	0.42555	410.2	256.3	201.1
27	0.356	0.672	0.19201	0.30721	0.39170	445.6	278.5	218.4

28	0.328	0.619	0.17673	0.28277	0.36054	484.1	302.6	237.3
29	0.302	0.569	0.16267	0.26028	0.33185	526.0	328.7	257.8
30	0.278	0.524	0.14973	0.23957	0.30545	571.4	357.1	280.1
Int-Term (day average)	1.251	2.360	0.67419	1.07870	1.37534	127	79	62
Chronic	1.251	2.360	0.08562	0.13699	0.17467	999.3	624.6	489.8

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Appendix C: Carbaryl Occupational Postapplication Cancer Risk Assessment For The Cut Flower Crop Group (WA Data)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason	TC Policy 3.1. Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Cut Flowers
Specific Crop(s) Considered:	Floriculture Crops
Application Rate of Crop (lb ai/A):	

DFR Data Summary

Data Source (enter 1 if data available, 0 if defa 1

Source:	IR4 Chrysanthemum Study (MRID 468928-01) - WA Data
Slope of Semilog Regression:	-0.0829
[Initial] (ug/cm2):	1.945
Study Application Rate (lb ai/A):	1.06
Limit of Quantification (ug/cm2):	0.003

(Note: Enter application rate of crop if no data available in study rate cell.)

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	2500	2400 to 13000	Irrigation, scouting, thinning, weeding immature/low foliage plants
Medium	4000	2400 to 13000	Irrigation, scouting mature/high foliage plants
High	5100	2400 to 13000	hand harvesting, pruning, thinning, pinching
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	djusted For Rat	Low Exposure	edium Exposu	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	1.945	3.670	0.1332	0.2131	0.2716	1.8E-03	1.6E-06	2.9E-03	2.6E-06	3.7E-03	3.3E-06	5.5E-03	4.8E-06	8.8E-03	7.7E-06	1.1E-02	9.8E-06
1	1.790	3.378	0.1226	0.1961	0.2500	1.7E-03	1.5E-06	2.7E-03	2.4E-06	3.4E-03	3.0E-06	5.0E-03	4.4E-06	8.1E-03	7.1E-06	1.0E-02	9.0E-06
2	1.648	3.109	0.1128	0.1805	0.2301	1.5E-03	1.4E-06	2.5E-03	2.2E-06	3.2E-03	2.8E-06	4.6E-03	4.1E-06	7.4E-03	6.5E-06	9.5E-03	8.3E-06
3	1.517	2.862	0.1038	0.1661	0.2118	1.4E-03	1.2E-06	2.3E-03	2.0E-06	2.9E-03	2.5E-06	4.3E-03	3.7E-06	6.8E-03	6.0E-06	8.7E-03	7.6E-06
4	1.396	2.634	0.0956	0.1529	0.1950	1.3E-03	1.1E-06	2.1E-03	1.8E-06	2.7E-03	2.3E-06	3.9E-03	3.4E-06	6.3E-03	5.5E-06	8.0E-03	7.0E-06
5	1.285	2.425	0.0880	0.1408	0.1795	1.2E-03	1.1E-06	1.9E-03	1.7E-06	2.5E-03	2.2E-06	3.6E-03	3.2E-06	5.8E-03	5.1E-06	7.4E-03	6.5E-06
6	1.183	2.232	0.0810	0.1296	0.1652	1.1E-03	9.7E-07	1.8E-03	1.6E-06	2.3E-03	2.0E-06	3.3E-03	2.9E-06	5.3E-03	4.7E-06	6.8E-03	5.9E-06
7	1.089	2.054	0.0745	0.1193	0.1521	1.0E-03	8.9E-07	1.6E-03	1.4E-06	2.1E-03	1.8E-06	3.1E-03	2.7E-06	4.9E-03	4.3E-06	6.2E-03	5.5E-06
8	1.002	1.891	0.0686	0.1098	0.1400	9.4E-04	8.2E-07	1.5E-03	1.3E-06	1.9E-03	1.7E-06	2.8E-03	2.5E-06	4.5E-03	3.9E-06	5.8E-03	5.0E-06
9	0.922	1.740	0.0631	0.1010	0.1288	8.7E-04	7.6E-07	1.4E-03	1.2E-06	1.8E-03	1.5E-06	2.6E-03	2.3E-06	4.2E-03	3.6E-06	5.3E-03	4.6E-06
10	0.849	1.602	0.0581	0.0930	0.1186	8.0E-04	7.0E-07	1.3E-03	1.1E-06	1.6E-03	1.4E-06	2.4E-03	2.1E-06	3.8E-03	3.3E-06	4.9E-03	4.3E-06
11	0.781	1.474	0.0535	0.0856	0.1091	7.3E-04	6.4E-07	1.2E-03	1.0E-06	1.5E-03	1.3E-06	2.2E-03	1.9E-06	3.5E-03	3.1E-06	4.5E-03	3.9E-06
12	0.719	1.357	0.0492	0.0788	0.1005	6.7E-04	5.9E-07	1.1E-03	9.4E-07	1.4E-03	1.2E-06	2.0E-03	1.8E-06	3.2E-03	2.8E-06	4.1E-03	3.6E-06
13	0.662	1.249	0.0453	0.0725	0.0925	6.2E-04	5.4E-07	9.9E-04	8.7E-07	1.3E-03	1.1E-06	1.9E-03	1.6E-06	3.0E-03	2.6E-06	3.8E-03	3.3E-06
14	0.609	1.150	0.0417	0.0668	0.0851	5.7E-04	5.0E-07	9.1E-04	8.0E-07	1.2E-03	1.0E-06	1.7E-03	1.5E-06	2.7E-03	2.4E-06	3.5E-03	3.1E-06
15	0.561	1.058	0.0384	0.0614	0.0783	5.3E-04	4.6E-07	8.4E-04	7.4E-07	1.1E-03	9.4E-07	1.6E-03	1.4E-06	2.5E-03	2.2E-06	3.2E-03	2.8E-06
16	0.516	0.974	0.0353	0.0566	0.0721	4.8E-04	4.2E-07	7.7E-04	6.8E-07	9.9E-04	8.6E-07	1.5E-03	1.3E-06	2.3E-03	2.0E-06	3.0E-03	2.6E-06
17	0.475	0.897	0.0325	0.0521	0.0664	4.5E-04	3.9E-07	7.1E-04	6.2E-07	9.1E-04	8.0E-07	1.3E-03	1.2E-06	2.1E-03	1.9E-06	2.7E-03	2.4E-06
18	0.437	0.825	0.0299	0.0479	0.0611	4.1E-04	3.6E-07	6.6E-04	5.7E-07	8.4E-04	7.3E-07	1.2E-03	1.1E-06	2.0E-03	1.7E-06	2.5E-03	2.2E-06
19	0.403	0.760	0.0276	0.0441	0.0562	3.8E-04	3.3E-07	6.0E-04	5.3E-07	7.7E-04	6.7E-07	1.1E-03	9.9E-07	1.8E-03	1.6E-06	2.3E-03	2.0E-06
20	0.371	0.699	0.0254	0.0406	0.0518	3.5E-04	3.0E-07	5.6E-04	4.9E-07	7.1E-04	6.2E-07	1.0E-03	9.1E-07	1.7E-03	1.5E-06	2.1E-03	1.9E-06
21	0.341	0.644	0.0234	0.0374	0.0476	3.2E-04	2.8E-07	5.1E-04	4.5E-07	6.5E-04	5.7E-07	9.6E-04	8.4E-07	1.5E-03	1.3E-06	2.0E-03	1.7E-06
22	0.314	0.592	0.0215	0.0344	0.0438	2.9E-04	2.6E-07	4.7E-04	4.1E-07	6.0E-04	5.3E-07	8.8E-04	7.7E-07	1.4E-03	1.2E-06	1.8E-03	1.6E-06
23	0.289	0.545	0.0198	0.0317	0.0404	2.7E-04	2.4E-07	4.3E-04	3.8E-07	5.5E-04	4.8E-07	8.1E-04	7.1E-07	1.3E-03	1.1E-06	1.7E-03	1.5E-06
24	0.266	0.502	0.0182	0.0291	0.0371	2.5E-04	2.2E-07	4.0E-04	3.5E-07	5.1E-04	4.5E-07	7.5E-04	6.5E-07	1.2E-03	1.0E-06	1.5E-03	1.3E-06
25	0.245	0.462	0.0168	0.0268	0.0342	2.3E-04	2.0E-07	3.7E-04	3.2E-07	4.7E-04	4.1E-07	6.9E-04	6.0E-07	1.1E-03	9.6E-07	1.4E-03	1.2E-06
26	0.225	0.425	0.0154	0.0247	0.0315	2.1E-04	1.8E-07	3.4E-04	3.0E-07	4.3E-04	3.8E-07	6.3E-04	5.5E-07	1.0E-03	8.9E-07	1.3E-03	1.1E-06
27	0.207	0.391	0.0142	0.0227	0.0290	1.9E-04	1.7E-07	3.1E-04	2.7E-07	4.0E-04	3.5E-07	5.8E-04	5.1E-07	9.3E-04	8.2E-07	1.2E-03	1.0E-06
28	0.191	0.361	0.0131	0.0209	0.0267	1.8E-04	1.6E-07	2.9E-04	2.5E-07	3.7E-04	3.2E-07	5.4E-04	4.7E-07	8.6E-04	7.5E-07	1.1E-03	9.6E-07
29	0.176	0.332	0.0120	0.0192	0.0245	1.6E-04	1.4E-07	2.6E-04	2.3E-07	3.4E-04	2.9E-07	4.9E-04	4.3E-07	7.9E-04	6.9E-07	1.0E-03	8.8E-07
30	0.162	0.305	0.0111	0.0177	0.0226	1.5E-04	1.3E-07	2.4E-04	2.1E-07	3.1E-04	2.7E-07	4.6E-04	4.0E-07	7.3E-04	6.4E-07	9.3E-04	8.1E-07

D334881
Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Sugarcane Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Sugarcane
Specific Crop(s) Considered:	Sugarcane
Application Rate of Crop (lb ai/A):	1.5

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source	ARTF Tobacco Harvesting Study (Groundboom Application), MRID 4600059-11
Slope of Semilog Regression:	-0.20492
[Initial] (ug/cm2):	4.258
Study Application Rate (lb ai/A):	2
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	N/A	N/A	N/A
Medium	1000	418 to 1980	Scouting immature plants
High	2000	418 to 1980	Scouting mature plants
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)		MOEs	
	Not Adjusted	Adjusted For Rate	Medium Exposure	High Exposure	Medium Exposure	High Exposure
0	4.2580	3.1935	0.36497	0.72994	234	117
1	3.4690	2.6018	0.29735	0.59469	288	144
2	2.8263	2.1197	0.24225	0.48450	353	177
3	2.3026	1.7270	0.19737	0.39473	434	217
4	1.8760	1.4070	0.16080	0.32159	532	266
5	1.5284	1.1463	0.13100	0.26201	653	327
6	1.2452	0.9339	0.10673	0.21346	802	401
7	1.0145	0.7608	0.08695	0.17391	984	492
8	0.8265	0.6199	0.07084	0.14168	1208	604
9	0.6734	0.5050	0.05772	0.11543	1482	741
10	0.5486	0.4114	0.04702	0.09404	1820	910
11	0.4469	0.3352	0.03831	0.07662	2233	1117
12	0.3641	0.2731	0.03121	0.06242	2741	1371
13	0.2967	0.2225	0.02543	0.05086	3365	1682
14	0.2417	0.1813	0.02072	0.04143	4130	2065
15	0.1969	0.1477	0.01688	0.03376	5069	2535
16	0.1604	0.1203	0.01375	0.02750	6222	3111
17	0.1307	0.0980	0.01120	0.02241	7637	3819
18	0.1065	0.0799	0.00913	0.01825	9374	4687
19	0.0868	0.0651	0.00744	0.01487	11506	5753
20	0.0707	0.0530	0.00606	0.01212	14123	7061
21	0.0576	0.0432	0.00494	0.00987	17335	8667
22	0.0469	0.0352	0.00402	0.00804	21277	10639
23	0.0382	0.0287	0.00328	0.00655	26116	13058
24	0.0311	0.0234	0.00267	0.00534	32056	16028
25	0.0254	0.0190	0.00217	0.00435	39346	19673
26	0.0207	0.0155	0.00177	0.00354	48295	24147
27	0.0168	0.0126	0.00144	0.00289	59278	29639
28	0.0137	0.0103	0.00118	0.00235	72759	36380
29	0.0112	0.0084	0.00096	0.00192	89307	44653
30	0.0091	0.0068	0.00078	0.00156	109618	54809
Int-Term (30 day average)	0.7400	0.5550	0.06343	0.12686	1349	674

D334881
Appendix C. Carbaryl Postapplication Cancer Risk Assessment For Sugarcane Crop Group

Occupational Post Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Sugarcane
Specific Crop(s) Considered:	Sugarcane
Application Rate of Crop (lb ai/A):	1.5

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	AR [illegible] Tobacco Harvesting Study (Groundboom Application), MRID [illegible]
Slope of Semilog Regression:	-0.20492
[Initial] (ug/cm2):	4.258
Study Application Rate (lb ai/A):	2
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	N/A	N/A	N/A
Medium	1000	418 to 1980	Scouting immature plants
High	2000	418 to 1980	Scouting mature plants
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)		RISKS FOR PRIVATE GROWERS				RISKS FOR PROFESSIONAL FARMWORKERS			
					Medium Exposure		High Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	4.2580	3.1935	0.04635	0.09270	6.3E-04	5.6E-07	1.3E-03	1.1E-06	1.9E-03	1.7E-06	3.8E-03	3.3E-06
1	3.4690	2.6018	0.03776	0.07553	5.2E-04	4.5E-07	1.0E-03	9.1E-07	1.6E-03	1.4E-06	3.1E-03	2.7E-06
2	2.8263	2.1197	0.03077	0.06153	4.2E-04	3.7E-07	8.4E-04	7.4E-07	1.3E-03	1.1E-06	2.5E-03	2.2E-06
3	2.3026	1.7270	0.02507	0.05013	3.4E-04	3.0E-07	6.9E-04	6.0E-07	1.0E-03	9.0E-07	2.1E-03	1.8E-06
4	1.8760	1.4070	0.02042	0.04084	2.8E-04	2.4E-07	5.6E-04	4.9E-07	8.4E-04	7.3E-07	1.7E-03	1.5E-06
5	1.5284	1.1463	0.01664	0.03327	2.3E-04	2.0E-07	4.6E-04	4.0E-07	6.8E-04	6.0E-07	1.4E-03	1.2E-06
6	1.2452	0.9339	0.01355	0.02711	1.9E-04	1.6E-07	3.7E-04	3.2E-07	5.6E-04	4.9E-07	1.1E-03	9.7E-07
7	1.0145	0.7608	0.01104	0.02209	1.5E-04	1.3E-07	3.0E-04	2.6E-07	4.5E-04	4.0E-07	9.1E-04	7.9E-07
8	0.8265	0.6199	0.00900	0.01799	1.2E-04	1.1E-07	2.5E-04	2.2E-07	3.7E-04	3.2E-07	7.4E-04	6.5E-07
9	0.6734	0.5050	0.00733	0.01466	1.0E-04	8.8E-08	2.0E-04	1.8E-07	3.0E-04	2.6E-07	6.0E-04	5.3E-07
10	0.5486	0.4114	0.00597	0.01194	8.2E-05	7.2E-08	1.6E-04	1.4E-07	2.5E-04	2.1E-07	4.9E-04	4.3E-07
11	0.4469	0.3352	0.00487	0.00973	6.7E-05	5.8E-08	1.3E-04	1.2E-07	2.0E-04	1.7E-07	4.0E-04	3.5E-07
12	0.3641	0.2731	0.00396	0.00793	5.4E-05	4.8E-08	1.1E-04	9.5E-08	1.6E-04	1.4E-07	3.3E-04	2.9E-07
13	0.2967	0.2225	0.00323	0.00646	4.4E-05	3.9E-08	8.8E-05	7.7E-08	1.3E-04	1.2E-07	2.7E-04	2.3E-07
14	0.2417	0.1813	0.00263	0.00526	3.6E-05	3.2E-08	7.2E-05	6.3E-08	1.1E-04	9.5E-08	2.2E-04	1.9E-07
15	0.1969	0.1477	0.00214	0.00429	2.9E-05	2.6E-08	5.9E-05	5.1E-08	8.8E-05	7.7E-08	1.8E-04	1.5E-07
16	0.1604	0.1203	0.00175	0.00349	2.4E-05	2.1E-08	4.8E-05	4.2E-08	7.2E-05	6.3E-08	1.4E-04	1.3E-07
17	0.1307	0.0980	0.00142	0.00285	1.9E-05	1.7E-08	3.9E-05	3.4E-08	5.8E-05	5.1E-08	1.2E-04	1.0E-07
18	0.1065	0.0799	0.00116	0.00232	1.6E-05	1.4E-08	3.2E-05	2.8E-08	4.8E-05	4.2E-08	9.5E-05	8.3E-08
19	0.0868	0.0651	0.00094	0.00189	1.3E-05	1.1E-08	2.6E-05	2.3E-08	3.9E-05	3.4E-08	7.8E-05	6.8E-08
20	0.0707	0.0530	0.00077	0.00154	1.1E-05	9.2E-09	2.1E-05	1.8E-08	3.2E-05	2.8E-08	6.3E-05	5.5E-08
21	0.0576	0.0432	0.00063	0.00125	8.6E-06	7.5E-09	1.7E-05	1.5E-08	2.6E-05	2.3E-08	5.2E-05	4.5E-08
22	0.0469	0.0352	0.00051	0.00102	7.0E-06	6.1E-09	1.4E-05	1.2E-08	2.1E-05	1.8E-08	4.2E-05	3.7E-08
23	0.0382	0.0287	0.00042	0.00083	5.7E-06	5.0E-09	1.1E-05	1.0E-08	1.7E-05	1.5E-08	3.4E-05	3.0E-08
24	0.0311	0.0234	0.00034	0.00068	4.6E-06	4.1E-09	9.3E-06	8.1E-09	1.4E-05	1.2E-08	2.8E-05	2.4E-08
25	0.0254	0.0190	0.00028	0.00055	3.8E-06	3.3E-09	7.6E-06	6.6E-09	1.1E-05	9.9E-09	2.3E-05	2.0E-08
26	0.0207	0.0155	0.00022	0.00045	3.1E-06	2.7E-09	6.2E-06	5.4E-09	9.2E-06	8.1E-09	1.8E-05	1.6E-08
27	0.0168	0.0126	0.00018	0.00037	2.5E-06	2.2E-09	5.0E-06	4.4E-09	7.5E-06	6.6E-09	1.5E-05	1.3E-08
28	0.0137	0.0103	0.00015	0.00030	2.0E-06	1.8E-09	4.1E-06	3.6E-09	6.1E-06	5.4E-09	1.2E-05	1.1E-08
29	0.0112	0.0084	0.00012	0.00024	1.7E-06	1.5E-09	3.3E-06	2.9E-09	5.0E-06	4.4E-09	1.0E-05	8.8E-09
30	0.0091	0.0068	0.00010	0.00020	1.4E-06	1.2E-09	2.7E-06	2.4E-09	4.1E-06	3.6E-09	8.1E-06	7.1E-09

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Appendix C. Carbaryl Postapplication Noncancer Risk Assessment For Deciduous Tree Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Upoated Hazard Data
Date:	39262
Transfer Coefficient Group	Deciduous Tree Fruit
Specific Crop(s) Considered	Apples, apricots, cherries, figs, nectarines, peaches, pears, plums/prunes, pomegranates
Application Rate of Crop (lb ai/A):	3

DFR Data Summary

Data Source (enter 1 if data available, 0 if default)	
Source	ARTF Olive Pruning Study (A [illegible] Application), MRID 45[illegible]
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2)	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	propping
Low	1000	197 to 2302	irrigation, scouting, weeding
Medium	N/A	N/A	N/A
High	1500	360 to 4000	harvesting, pruning, training, tying
Very High	3000	1400 to 4000	thinning

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)				MOFs			
	Not Adjusted	Adjusted For Rate	Very Low Exposure	Low Exposure	High Exposure	Very High Expo.	Very Low Exposure	Low Exposure	High Exposure	Very High Expo.
0	3.067	1.203	0.0137	0.1375	0.2062	0.4124	6225	622	415	207
1	2.779	1.090	0.0125	0.1245	0.1868	0.3736	6871	687	458	229
2	2.517	0.987	0.0113	0.1128	0.1692	0.3385	7584	758	506	253
3	2.280	0.894	0.0102	0.1022	0.1533	0.3066	8371	837	558	279
4	2.066	0.810	0.0093	0.0926	0.1389	0.2778	9240	924	616	308
5	1.872	0.734	0.0084	0.0839	0.1258	0.2517	10200	1020	680	340
6	1.696	0.665	0.0076	0.0760	0.1140	0.2280	11258	1126	751	375
7	1.536	0.602	0.0069	0.0688	0.1033	0.2065	12427	1243	828	414
8	1.392	0.546	0.0062	0.0624	0.0936	0.1871	13717	1372	914	457
9	1.261	0.494	0.0057	0.0565	0.0848	0.1695	15141	1514	1009	505
10	1.142	0.448	0.0051	0.0512	0.0768	0.1536	16713	1671	1114	557
11	1.035	0.406	0.0046	0.0464	0.0696	0.1391	18448	1845	1230	615
12	0.937	0.368	0.0042	0.0420	0.0630	0.1261	20363	2036	1358	679
13	0.849	0.333	0.0038	0.0381	0.0571	0.1142	22477	2248	1498	749
14	0.769	0.302	0.0034	0.0345	0.0517	0.1035	24811	2481	1654	827
15	0.697	0.273	0.0031	0.0312	0.0469	0.0937	27386	2739	1826	913
16	0.632	0.248	0.0028	0.0283	0.0425	0.0849	30229	3023	2015	1008
17	0.572	0.224	0.0026	0.0256	0.0385	0.0769	33368	3337	2225	1112
18	0.518	0.203	0.0023	0.0232	0.0348	0.0697	36832	3683	2455	1228
19	0.470	0.184	0.0021	0.0210	0.0316	0.0631	40655	4066	2710	1355
20	0.425	0.167	0.0019	0.0191	0.0286	0.0572	44876	4488	2992	1496
21	0.385	0.151	0.0017	0.0173	0.0259	0.0518	49534	4953	3302	1651
22	0.349	0.137	0.0016	0.0156	0.0235	0.0469	54677	5468	3645	1823
23	0.316	0.124	0.0014	0.0142	0.0213	0.0425	60353	6035	4024	2012
24	0.287	0.112	0.0013	0.0128	0.0193	0.0385	66618	6662	4441	2221
25	0.260	0.102	0.0012	0.0116	0.0175	0.0349	73534	7353	4902	2451
26	0.235	0.092	0.0011	0.0105	0.0158	0.0316	81167	8117	5411	2706
27	0.213	0.084	0.0010	0.0095	0.0143	0.0286	89594	8959	5973	2986
28	0.193	0.076	0.0009	0.0087	0.0130	0.0260	98895	9889	6593	3296
29	0.175	0.069	0.0008	0.0078	0.0118	0.0235	109161	10916	7277	3639
30	0.158	0.062	0.0007	0.0071	0.0107	0.0213	120493	12049	8033	4016
Int-Term	1.003	0.393	0.00449	0.04494	0.06741	0.13482	19039	1904	1269	635

0 day average)

D33488:
Appendix C: Carbaryl Postapplication Cancer Risk Assessment For Deciduous Tree Crop Group

Occupational Risk Application Risk Assessment Calculation Version 1.0 (4/4/01)

Chemical:	Carbaryl
Reason:	TC Policy 3.1 Updated DFR and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Deciduous Tree Fruit
Specific Crop(s) Considered:	Apples, apricots, cherries, figs, nectarines, peaches, pears, plums/prunes, pomegranates
Application Rate or Crop (lb a/A)	3

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Olive Pruning Study (Airblast Application) MRID 45[illegible]
Slope of Semilog Regression:	-0.09877
DFR(0) (ug/cm2):	3.067
Study Application Rate (lb a/A):	7.65
DFR Consideration Calculated:	0.0025
Note: From application rate of crop [illegible] study [illegible]	

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	propping
Low	1000	197 to 2302	irrigation, scouting, weeding
Medium	N/A	N/A	N/A
High	1500	360 to 4000	harvesting, pruning, training, tying
Very High	3000	1400 to 4000	thinning

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)				RISKS FOR PRIVATE GROWERS								RISKS FOR PROFESSIONAL FARMWORKERS							
							Very Low Expo.		Low Exposure		High Exposure		Very High Expo.		Very Low Expo.		Low Exposure		High Exposure		Very High Expo.	
	Not Adjusted	Adjusted For Rate	Very Low Expo.	Low Exposure	High Exposure	Very High Expo.	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	3.067	1.203	0.00175	0.01746	0.02619	0.05237	2.4E-05	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.1E-07	7.2E-04	6.3E-07	7.2E-04	6.3E-07	1.1E-03	9.4E-07	2.2E-03	1.9E-06		
1	2.779	1.090	0.00158	0.01582	0.02372	0.04745	2.2E-05	1.9E-08	2.2E-04	1.9E-07	3.2E-04	2.8E-07	6.5E-04	5.7E-07	6.5E-04	5.7E-07	9.7E-04	8.5E-07	1.9E-03	1.7E-06		
2	2.517	0.987	0.00143	0.01432	0.02149	0.04296	2.0E-05	1.7E-08	2.0E-04	1.7E-07	2.9E-04	2.6E-07	5.9E-04	5.2E-07	5.9E-04	5.2E-07	8.8E-04	7.7E-07	1.8E-03	1.5E-06		
3	2.280	0.894	0.00130	0.01298	0.01947	0.03894	1.8E-05	1.6E-08	1.8E-04	1.6E-07	2.7E-04	2.3E-07	5.3E-04	4.7E-07	5.3E-04	4.7E-08	8.3E-04	4.7E-07	8.0E-04	7.0E-07	1.6E-03	1.4E-06
4	2.066	0.810	0.00118	0.01176	0.01764	0.03528	1.6E-05	1.4E-08	1.6E-04	1.4E-07	2.4E-04	2.1E-07	4.8E-04	4.2E-07	4.8E-04	4.2E-08	4.8E-04	4.2E-07	7.2E-04	6.3E-07	1.4E-03	1.3E-06
5	1.872	0.734	0.00107	0.01065	0.01598	0.03195	1.5E-05	1.3E-08	1.5E-04	1.3E-07	2.2E-04	1.9E-07	4.4E-04	3.8E-07	4.4E-04	3.8E-08	4.4E-04	3.8E-07	6.6E-04	5.7E-07	1.3E-03	1.1E-06
6	1.696	0.665	0.00097	0.00965	0.01448	0.02895	1.3E-05	1.2E-08	1.3E-04	1.2E-07	2.0E-04	1.7E-07	4.0E-04	3.5E-07	4.0E-04	3.5E-08	4.0E-04	3.5E-07	5.9E-04	5.2E-07	1.2E-03	1.0E-06
7	1.536	0.602	0.00087	0.00874	0.01312	0.02623	1.2E-05	1.0E-08	1.2E-04	1.0E-07	1.8E-04	1.6E-07	3.6E-04	3.1E-07	3.6E-04	3.1E-08	3.6E-04	3.1E-07	5.4E-04	4.7E-07	1.1E-03	9.4E-07
8	1.392	0.546	0.00079	0.00792	0.01188	0.02376	1.1E-05	9.5E-09	1.1E-04	9.5E-08	1.6E-04	1.4E-07	3.3E-04	2.8E-07	3.3E-04	2.8E-08	3.3E-04	2.8E-07	4.9E-04	4.3E-07	9.8E-04	8.5E-07
9	1.261	0.494	0.00071	0.00718	0.01076	0.02153	9.8E-06	8.6E-09	9.8E-05	8.6E-08	1.5E-04	1.3E-07	2.9E-04	2.6E-07	2.9E-04	2.6E-08	2.9E-04	2.6E-07	4.4E-04	3.9E-07	8.8E-04	7.7E-07
10	1.142	0.448	0.00065	0.00650	0.00975	0.01950	8.9E-06	7.8E-09	8.9E-05	7.8E-08	1.3E-04	1.2E-07	2.7E-04	2.3E-07	2.7E-04	2.3E-08	2.7E-04	2.3E-07	4.0E-04	3.5E-07	8.0E-04	7.0E-07
11	1.035	0.406	0.00059	0.00589	0.00884	0.01767	8.1E-06	7.1E-09	8.1E-05	7.1E-08	1.2E-04	1.1E-07	2.4E-04	2.1E-07	2.4E-04	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.2E-07	7.3E-04	6.4E-07
12	0.937	0.368	0.00053	0.00534	0.00800	0.01601	7.3E-06	6.4E-09	7.3E-05	6.4E-08	1.1E-04	9.6E-08	2.2E-04	1.9E-07	2.2E-04	1.9E-08	2.2E-04	1.9E-07	3.3E-04	2.9E-07	6.6E-04	5.8E-07
13	0.849	0.333	0.00048	0.00483	0.00725	0.01450	6.6E-06	5.8E-09	6.6E-05	5.8E-08	9.9E-05	8.7E-08	2.0E-04	1.7E-07	2.0E-04	1.7E-08	2.0E-04	1.7E-07	3.0E-04	2.6E-07	5.9E-04	5.2E-07
14	0.769	0.302	0.00044	0.00438	0.00657	0.01314	6.0E-06	5.2E-09	6.0E-05	5.2E-08	9.0E-05	7.9E-08	1.8E-04	1.6E-07	1.8E-04	1.6E-08	1.8E-04	1.6E-07	2.7E-04	2.4E-07	5.4E-04	4.7E-07
15	0.697	0.273	0.00040	0.00397	0.00595	0.01190	5.4E-06	4.8E-09	5.4E-05	4.8E-08	8.2E-05	7.1E-08	1.6E-04	1.4E-07	1.6E-04	1.4E-08	1.6E-04	1.4E-07	2.4E-04	2.1E-07	4.9E-04	4.3E-07
16	0.632	0.248	0.00036	0.00359	0.00539	0.01078	4.9E-06	4.3E-09	4.9E-05	4.3E-08	7.4E-05	6.5E-08	1.5E-04	1.3E-07	1.5E-04	1.3E-08	1.5E-04	1.3E-07	2.2E-04	1.9E-07	4.4E-04	3.9E-07
17	0.572	0.224	0.00033	0.00326	0.00489	0.00977	4.5E-06	3.9E-09	4.5E-05	3.9E-08	6.7E-05	5.9E-08	1.3E-04	1.2E-07	1.3E-04	1.2E-08	1.3E-04	1.2E-07	2.0E-04	1.8E-07	4.0E-04	3.5E-07
18	0.518	0.203	0.00030	0.00295	0.00443	0.00885	4.0E-06	3.5E-09	4.0E-05	3.5E-08	6.1E-05	5.3E-08	1.2E-04	1.1E-07	1.2E-04	1.1E-08	1.2E-04	1.1E-07	1.8E-04	1.6E-07	3.6E-04	3.2E-07
19	0.470	0.184	0.00027	0.00267	0.00401	0.00802	3.7E-06	3.2E-09	3.7E-05	3.2E-08	5.5E-05	4.8E-08	1.1E-04	9.6E-08	1.1E-04	9.6E-09	1.1E-04	9.6E-08	1.6E-04	1.4E-07	3.3E-04	2.9E-07
20	0.425	0.167	0.00024	0.00242	0.00363	0.00726	3.3E-06	2.9E-09	3.3E-05	2.9E-08	5.0E-05	4.4E-08	1.0E-04	8.7E-08	1.0E-04	8.7E-09	1.0E-04	8.7E-08	1.5E-04	1.3E-07	3.0E-04	2.6E-07
21	0.385	0.151	0.00022	0.00219	0.00329	0.00658	3.0E-06	2.6E-09	3.0E-05	2.6E-08	4.5E-05	3.9E-08	9.0E-05	7.9E-08	9.0E-05	7.9E-09	9.0E-05	7.9E-08	1.4E-04	1.2E-07	2.7E-04	2.4E-07
22	0.349	0.137	0.00020	0.00199	0.00298	0.00596	2.7E-06	2.4E-09	2.7E-05	2.4E-08	4.1E-05	3.6E-08	8.2E-05	7.1E-08	8.2E-05	7.1E-09	8.2E-05	7.1E-08	1.2E-04	1.1E-07	2.5E-04	2.1E-07
23	0.316	0.124	0.00018	0.00180	0.00270	0.00540	2.5E-06	2.2E-09	2.5E-05	2.2E-08	3.7E-05	3.2E-08	7.4E-05	6.5E-08	7.4E-05	6.5E-09	7.4E-05	6.5E-08	1.1E-04	9.7E-08	2.2E-04	1.9E-07
24	0.287	0.112	0.00016	0.00163	0.00245	0.00489	2.2E-06	2.0E-09	2.2E-05	2.0E-08	3.4E-05	2.9E-08	6.7E-05	5.9E-08	6.7E-05	5.9E-09	6.7E-05	5.9E-08	1.0E-04	8.8E-08	2.0E-04	1.8E-07
25	0.260	0.102	0.00015	0.00148	0.00222	0.00443	2.0E-06	1.8E-09	2.0E-05	1.8E-08	3.0E-05	2.7E-08	6.1E-05	5.3E-08	6.1E-05	5.3E-09	6.1E-05	5.3E-08	9.1E-05	8.0E-08	1.8E-04	1.6E-07
26	0.235	0.092	0.00013	0.00134	0.00201	0.00402	1.8E-06	1.6E-09	1.8E-05	1.6E-08	2.8E-05	2.4E-08	5.5E-05	4.8E-08	5.5E-05	4.8E-09	5.5E-05	4.8E-08	8.3E-05	7.2E-08	1.7E-04	1.4E-07
27	0.213	0.084	0.00012	0.00121	0.00182	0.00364	1.7E-06	1.5E-09	1.7E-05	1.5E-08	2.5E-05	2.2E-08	5.0E-05	4.4E-08	5.0E-05	4.4E-09	5.0E-05	4.4E-08	7.5E-05	6.5E-08	1.5E-04	1.3E-07
28	0.193	0.076	0.00011	0.00110	0.00165	0.00330	1.5E-06	1.3E-09	1.5E-05	1.3E-08	2.3E-05	2.0E-08	4.5E-05	4.0E-08	4.5E-05	4.0E-09	4.5E-05	4.0E-08	6.8E-05	5.9E-08	1.4E-04	1.2E-07
29	0.175	0.069	0.00010	0.00100	0.00149	0.00299	1.4E-06	1.2E-09	1.4E-05	1.2E-08	2.0E-05	1.8E-08	4.1E-05	3.6E-08	4.1E-05	3.6E-09	4.1E-05	3.6E-08	6.1E-05	5.4E-08	1.2E-04	1.1E-07
30	0.158	0.062	0.00009	0.00090	0.00135	0.00271	1.2E-06	1.1E-09	1.2E-05	1.1E-08	1.9E-05	1.5E-08	3.7E-05	3.2E-08	3.7E-05	3.2E-09	3.7E-05	3.2E-08	5.5E-05	4.8E-08	1.1E-04	9.7E-08

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Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Deciduous Tree Crop Group (CA)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Deciduous Tree Fruit
Specific Crop(s) Considered:	Apples, apricots, cherries, figs, nectarines, peaches, pears, plums-prunes, pomegranates
Application Rate of Crop (lb ai/A):	4

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Olive Pruning Study (Airblast Application), MRID 451751-02
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	propping
Low	1000	197 to 2302	irrigation, scouting, weeding
Medium	N/A	N/A	N/A
High	1500	360 to 4000	harvesting, pruning, training, tying
Very High	3000	1400 to 4000	thinning

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)				MOEs			
	Not Adjusted	Adjusted For Rate	Very Low Exposure	Low Exposure	High Exposure	Very High Expo.	Very Low Exposure	Low Exposure	High Exposure	Very High Expo.
0	3.067	1.604	0.0183	0.1833	0.2749	0.5498	4668	467	311	156
1	2.779	1.453	0.0166	0.1660	0.2491	0.4981	5153	515	344	172
2	2.517	1.316	0.0150	0.1504	0.2256	0.4513	5688	569	379	190
3	2.280	1.192	0.0136	0.1363	0.2044	0.4088	6278	628	419	209
4	2.066	1.080	0.0123	0.1235	0.1852	0.3704	6930	693	462	231
5	1.872	0.979	0.0112	0.1118	0.1678	0.3355	7650	765	510	255
6	1.696	0.887	0.0101	0.1013	0.1520	0.3040	8444	844	563	281
7	1.536	0.803	0.0092	0.0918	0.1377	0.2754	9320	932	621	311
8	1.392	0.728	0.0083	0.0832	0.1247	0.2495	10288	1029	686	343
9	1.261	0.659	0.0075	0.0753	0.1130	0.2260	11356	1136	757	379
10	1.142	0.597	0.0068	0.0683	0.1024	0.2048	12535	1253	836	418
11	1.035	0.541	0.0062	0.0618	0.0928	0.1855	13836	1384	922	461
12	0.937	0.490	0.0056	0.0560	0.0840	0.1681	15272	1527	1018	509
13	0.849	0.444	0.0051	0.0508	0.0761	0.1523	16858	1686	1124	562
14	0.769	0.402	0.0046	0.0460	0.0690	0.1379	18608	1861	1241	620
15	0.697	0.364	0.0042	0.0417	0.0625	0.1250	20540	2054	1369	685
16	0.632	0.330	0.0038	0.0377	0.0566	0.1132	22672	2267	1511	756
17	0.572	0.299	0.0034	0.0342	0.0513	0.1026	25026	2503	1668	834
18	0.518	0.271	0.0031	0.0310	0.0465	0.0929	27624	2762	1842	921
19	0.470	0.246	0.0028	0.0281	0.0421	0.0842	30491	3049	2033	1016
20	0.425	0.222	0.0025	0.0254	0.0381	0.0763	33657	3366	2244	1122
21	0.385	0.202	0.0023	0.0230	0.0345	0.0691	37151	3715	2477	1238
22	0.349	0.183	0.0021	0.0209	0.0313	0.0626	41007	4101	2734	1367
23	0.316	0.165	0.0019	0.0189	0.0284	0.0567	45264	4526	3018	1509
24	0.287	0.150	0.0017	0.0171	0.0257	0.0514	49964	4996	3331	1665
25	0.260	0.136	0.0016	0.0155	0.0233	0.0465	55150	5515	3677	1838
26	0.235	0.123	0.0014	0.0141	0.0211	0.0422	60876	6088	4058	2029
27	0.213	0.111	0.0013	0.0127	0.0191	0.0382	67195	6720	4480	2240

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28	0.193	0.101	0.0012	0.0115	0.0173	0.0346	74171	7417	4945	2472
29	0.175	0.091	0.0010	0.0105	0.0157	0.0314	81871	8187	5458	2729
30	0.158	0.083	0.0009	0.0095	0.0142	0.0284	90370	9037	6025	3012
Int Term (30 day average)	1.003	0.524	0.00599	0.05992	0.08988	0.17976	14279	1428	952	476

D334881
Appendix C: Carbaryl Postapplication Cancer Risk Assessment For Deciduous Tree Crop Group (CA)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1. Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Deciduous Tree Fruit
Specific Crop(s) Considered:	Apples, apricots, cherries, figs, nectarines, peaches, pears, persimmons, plums, prunes
Application Rate of Crop (lb ai/A):	7

DFR Data Summary

Data Source (enter 1 if data available):	1
Source:	ARTF Olive Pruning Study (Airblast Application); MRID 451751-02
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	propping
Low	1000	197 to 2302	irrigation, scouting, weeding
Medium	N/A	N/A	N/A
High	1500	360 to 4000	harvesting, pruning, training, tying
Very High	3000	1400 to 4000	thinning

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)				RISKS FOR PRIVATE GROWERS								RISKS FOR PROFESSIONAL FARMWORKERS							
							Very Low Expo.		Low Exposure		High Exposure		Very High Expo.		Very Low Expo.		Low Exposure		High Exposure		Very High Expo	
	Not Adjusted	Adjusted For Rate	Very Low Expo.	Low Exposure	High Exposure	Very High Expo.	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	3.067	1.604	0.00233	0.02328	0.03491	0.06983	3.2E-05	2.8E-08	3.2E-04	2.8E-07	4.8E-04	4.2E-07	9.6E-04	8.4E-07	9.6E-05	8.4E-08	9.6E-04	8.4E-07	1.4E-03	1.3E-06	2.9E-03	2.5E-06
1	2.779	1.453	0.00211	0.02109	0.03163	0.06326	2.9E-05	2.5E-08	2.9E-04	2.5E-07	4.3E-04	3.8E-07	8.7E-04	7.6E-07	8.7E-05	7.6E-08	8.7E-04	7.6E-07	1.3E-03	1.1E-06	2.6E-03	2.3E-06
2	2.517	1.316	0.00191	0.01910	0.02866	0.05731	2.6E-05	2.3E-08	2.6E-04	2.3E-07	3.9E-04	3.4E-07	7.9E-04	6.9E-07	7.9E-05	6.9E-08	7.9E-04	6.9E-07	1.2E-03	1.0E-06	2.4E-03	2.1E-06
3	2.280	1.192	0.00173	0.01731	0.02596	0.05192	2.4E-05	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.1E-07	7.1E-04	6.2E-07	7.1E-05	6.2E-08	7.1E-04	6.2E-07	1.1E-03	9.3E-07	2.1E-03	1.9E-06
4	2.066	1.080	0.00157	0.01568	0.02352	0.04704	2.1E-05	1.9E-08	2.1E-04	1.9E-07	3.2E-04	2.8E-07	6.4E-04	5.6E-07	6.4E-05	5.6E-08	6.4E-04	5.6E-07	9.7E-04	8.5E-07	1.9E-03	1.7E-06
5	1.872	0.979	0.00142	0.01420	0.02131	0.04261	1.9E-05	1.7E-08	1.9E-04	1.7E-07	2.9E-04	2.6E-07	5.8E-04	5.1E-07	5.8E-05	5.1E-08	5.8E-04	5.1E-07	8.8E-04	7.7E-07	1.8E-03	1.5E-06
6	1.696	0.887	0.00129	0.01287	0.01930	0.03861	1.8E-05	1.5E-08	1.8E-04	1.5E-07	2.6E-04	2.3E-07	5.3E-04	4.6E-07	5.3E-05	4.6E-08	5.3E-04	4.6E-07	7.9E-04	6.9E-07	1.6E-03	1.4E-06
7	1.536	0.803	0.00117	0.01166	0.01749	0.03498	1.6E-05	1.4E-08	1.6E-04	1.4E-07	2.4E-04	2.1E-07	4.8E-04	4.2E-07	4.8E-05	4.2E-08	4.8E-04	4.2E-07	7.2E-04	6.3E-07	1.4E-03	1.3E-06
8	1.392	0.728	0.00106	0.01056	0.01584	0.03169	1.4E-05	1.3E-08	1.4E-04	1.3E-07	2.2E-04	1.9E-07	4.3E-04	3.8E-07	4.3E-05	3.8E-08	4.3E-04	3.8E-07	6.5E-04	5.7E-07	1.3E-03	1.1E-06
9	1.261	0.659	0.00096	0.00957	0.01435	0.02871	1.3E-05	1.1E-08	1.3E-04	1.1E-07	2.0E-04	1.7E-07	3.9E-04	3.4E-07	3.9E-05	3.4E-08	3.9E-04	3.4E-07	5.9E-04	5.2E-07	1.2E-03	1.0E-06
10	1.142	0.597	0.00087	0.00867	0.01300	0.02601	1.2E-05	1.0E-08	1.2E-04	1.0E-07	1.8E-04	1.6E-07	3.6E-04	3.1E-07	3.6E-05	3.1E-08	3.6E-04	3.1E-07	5.3E-04	4.7E-07	1.1E-03	9.4E-07
11	1.035	0.541	0.00079	0.00785	0.01178	0.02356	1.1E-05	9.4E-09	1.1E-04	9.4E-08	1.6E-04	1.4E-07	3.2E-04	2.8E-07	3.2E-05	2.8E-08	3.2E-04	2.8E-07	4.8E-04	4.2E-07	9.7E-04	8.5E-07
12	0.937	0.490	0.00071	0.00711	0.01067	0.02134	9.7E-06	8.5E-09	9.7E-05	8.5E-08	1.5E-04	1.3E-07	2.9E-04	2.6E-07	2.9E-05	2.6E-08	2.9E-04	2.6E-07	4.4E-04	3.8E-07	8.8E-04	7.7E-07
13	0.849	0.444	0.00064	0.00645	0.00967	0.01934	8.8E-06	7.7E-09	8.8E-05	7.7E-08	1.3E-04	1.2E-07	2.6E-04	2.3E-07	2.6E-05	2.3E-08	2.6E-04	2.3E-07	4.0E-04	3.5E-07	7.9E-04	7.0E-07
14	0.769	0.402	0.00058	0.00584	0.00876	0.01752	8.0E-06	7.0E-09	8.0E-05	7.0E-08	1.2E-04	1.0E-07	2.4E-04	2.1E-07	2.4E-05	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.1E-07	7.2E-04	6.3E-07
15	0.697	0.364	0.00053	0.00529	0.00794	0.01587	7.2E-06	6.3E-09	7.2E-05	6.3E-08	1.1E-04	9.5E-08	2.2E-04	1.9E-07	2.2E-05	1.9E-08	2.2E-04	1.9E-07	3.3E-04	2.9E-07	6.5E-04	5.7E-07
16	0.632	0.330	0.00048	0.00479	0.00719	0.01438	6.6E-06	5.7E-09	6.6E-05	5.7E-08	9.8E-05	8.6E-08	2.0E-04	1.7E-07	2.0E-05	1.7E-08	2.0E-04	1.7E-07	3.0E-04	2.6E-07	5.9E-04	5.2E-07
17	0.572	0.299	0.00043	0.00434	0.00651	0.01303	5.9E-06	5.2E-09	5.9E-05	5.2E-08	8.9E-05	7.8E-08	1.8E-04	1.6E-07	1.8E-05	1.6E-08	1.8E-04	1.6E-07	2.7E-04	2.3E-07	5.4E-04	4.7E-07
18	0.518	0.271	0.00039	0.00393	0.00590	0.01180	5.4E-06	4.7E-09	5.4E-05	4.7E-08	8.1E-05	7.1E-08	1.6E-04	1.4E-07	1.6E-05	1.4E-08	1.6E-04	1.4E-07	2.4E-04	2.1E-07	4.8E-04	4.2E-07
19	0.470	0.246	0.00036	0.00356	0.00535	0.01069	4.9E-06	4.3E-09	4.9E-05	4.3E-08	7.3E-05	6.4E-08	1.5E-04	1.3E-07	1.5E-05	1.3E-08	1.5E-04	1.3E-07	2.2E-04	1.9E-07	4.4E-04	3.8E-07
20	0.425	0.222	0.00032	0.00323	0.00484	0.00969	4.4E-06	3.9E-09	4.4E-05	3.9E-08	6.6E-05	5.8E-08	1.3E-04	1.2E-07	1.3E-05	1.2E-08	1.3E-04	1.2E-07	2.0E-04	1.7E-07	4.0E-04	3.5E-07
21	0.385	0.202	0.00029	0.00292	0.00439	0.00877	4.0E-06	3.5E-09	4.0E-05	3.5E-08	6.0E-05	5.3E-08	1.2E-04	1.1E-07	1.2E-05	1.1E-08	1.2E-04	1.1E-07	1.8E-04	1.6E-07	3.6E-04	3.2E-07
22	0.349	0.183	0.00026	0.00265	0.00397	0.00795	3.6E-06	3.2E-09	3.6E-05	3.2E-08	5.4E-05	4.8E-08	1.1E-04	9.5E-08	1.1E-05	9.5E-09	1.1E-04	9.5E-08	1.6E-04	1.4E-07	3.3E-04	2.9E-07
23	0.316	0.165	0.00024	0.00240	0.00360	0.00720	3.3E-06	2.9E-09	3.3E-05	2.9E-08	4.9E-05	4.3E-08	9.9E-05	8.6E-08	9.9E-06	8.6E-09	9.9E-05	8.6E-08	1.5E-04	1.3E-07	3.0E-04	2.6E-07
24	0.287	0.150	0.00022	0.00217	0.00326	0.00652	3.0E-06	2.6E-09	3.0E-05	2.6E-08	4.5E-05	3.9E-08	8.9E-05	7.8E-08	8.9E-06	7.8E-09	8.9E-05	7.8E-08	1.3E-04	1.2E-07	2.7E-04	2.3E-07
25	0.260	0.136	0.00020	0.00197	0.00296	0.00591	2.7E-06	2.4E-09	2.7E-05	2.4E-08	4.0E-05	3.5E-08	8.1E-05	7.1E-08	8.1E-06	7.1E-09	8.1E-05	7.1E-08	1.2E-04	1.1E-07	2.4E-04	2.1E-07
26	0.235	0.123	0.00018	0.00178	0.00268	0.00535	2.4E-06	2.1E-09	2.4E-05	2.1E-08	3.7E-05	3.2E-08	7.3E-05	6.4E-08	7.3E-06	6.4E-09	7.3E-05	6.4E-08	1.1E-04	9.6E-08	2.2E-04	1.9E-07
27	0.213	0.111	0.00016	0.00162	0.00243	0.00485	2.2E-06	1.9E-09	2.2E-05	1.9E-08	3.3E-05	2.9E-08	6.6E-05	5.8E-08	6.6E-06	5.8E-09	6.6E-05	5.8E-08	1.0E-04	8.7E-08	2.0E-04	1.7E-07
28	0.193	0.101	0.00015	0.00147	0.00220	0.00440	2.0E-06	1.8E-09	2.0E-05	1.8E-08	3.0E-05	2.6E-08	6.0E-05	5.3E-08	6.0E-06	5.3E-09	6.0E-05	5.3E-08	9.0E-05	7.9E-08	1.8E-04	1.6E-07
29	0.175	0.091	0.00013	0.00133	0.00199	0.00398	1.8E-06	1.6E-09	1.8E-05	1.6E-08	2.7E-05	2.4E-08	5.5E-05	4.8E-08	5.5E-06	4.8E-09	5.5E-05	4.8E-08	8.2E-05	7.2E-08	1.6E-04	1.4E-07
30	0.158	0.083	0.00012	0.00120	0.00180	0.00361	1.6E-06	1.4E-09	1.6E-05	1.4E-08	2.5E-05	2.2E-08	4.9E-05	4.3E-08	4.9E-06	4.3E-09	4.9E-05	4.3E-08	7.4E-05	6.5E-08	1.5E-04	1.3E-07

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Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Evergreen Tree Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Evergreen Tree Fruit
Specific Crop(s) Considered:	Avocados, conifers, dates, grapefruit, lemons, mangoes, oranges, papaya
Application Rate of Crop (lb ai/A):	5

DFR Data Summary

Data Source (enter 1 if data available, 0 if unavailable): 1

Source:	ARTF Olive Pruning Study (Airblast Application) MRID 45175102
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	propping
Low	1000	197 to 2302	irrigation, scouting, hand weeding, thinning Christmas trees, pruning
Medium	1500	360 to 4000	harvesting, pollination, bagging, tying, misc. hand labor, staking, topping, training
High	3000	1400 to 4000	thinning
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)				MOEs			
	Not Adjusted	Adjusted For Rate	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure
0	3.067	2.005	0.0229	0.2291	0.3436	0.6873	3735	373	249	124
1	2.779	1.816	0.0208	0.2075	0.3113	0.6226	4122	412	275	137
2	2.517	1.645	0.0188	0.1880	0.2820	0.5641	4550	455	303	152
3	2.280	1.491	0.0170	0.1703	0.2555	0.5110	5023	502	335	167
4	2.066	1.350	0.0154	0.1543	0.2315	0.4630	5544	554	370	185
5	1.872	1.223	0.0140	0.1398	0.2097	0.4194	6120	612	408	204
6	1.696	1.108	0.0127	0.1267	0.1900	0.3800	6755	676	450	225
7	1.536	1.004	0.0115	0.1147	0.1721	0.3442	7456	746	497	249
8	1.392	0.910	0.0104	0.1040	0.1559	0.3119	8230	823	549	274
9	1.261	0.824	0.0094	0.0942	0.1413	0.2825	9085	908	606	303
10	1.142	0.747	0.0085	0.0853	0.1280	0.2560	10028	1003	669	334
11	1.035	0.676	0.0077	0.0773	0.1159	0.2319	11069	1107	738	369
12	0.937	0.613	0.0070	0.0700	0.1050	0.2101	12218	1222	815	407
13	0.849	0.555	0.0063	0.0634	0.0952	0.1903	13486	1349	899	450
14	0.769	0.503	0.0057	0.0575	0.0862	0.1724	14886	1489	992	496
15	0.697	0.456	0.0052	0.0521	0.0781	0.1562	16432	1643	1095	548
16	0.632	0.413	0.0047	0.0472	0.0708	0.1415	18138	1814	1209	605
17	0.572	0.374	0.0043	0.0427	0.0641	0.1282	20021	2002	1335	667
18	0.518	0.339	0.0039	0.0387	0.0581	0.1162	22099	2210	1473	737
19	0.470	0.307	0.0035	0.0351	0.0526	0.1052	24393	2439	1626	813
20	0.425	0.278	0.0032	0.0318	0.0477	0.0953	26925	2693	1795	898
21	0.385	0.252	0.0029	0.0288	0.0432	0.0864	29721	2972	1981	991
22	0.349	0.228	0.0026	0.0261	0.0391	0.0782	32806	3281	2187	1094
23	0.316	0.207	0.0024	0.0236	0.0354	0.0709	36212	3621	2414	1207
24	0.287	0.187	0.0021	0.0214	0.0321	0.0642	39971	3997	2665	1332
25	0.260	0.170	0.0019	0.0194	0.0291	0.0582	44120	4412	2941	1471
26	0.235	0.154	0.0018	0.0176	0.0264	0.0527	48700	4870	3247	1623
27	0.213	0.139	0.0016	0.0159	0.0239	0.0477	53756	5376	3584	1792
28	0.193	0.126	0.0014	0.0144	0.0216	0.0433	59337	5934	3956	1978
29	0.175	0.114	0.0013	0.0131	0.0196	0.0392	65497	6550	4366	2183
30	0.158	0.104	0.0012	0.0118	0.0178	0.0355	72296	7230	4820	2410
Int-Term (30 day average)	1.003	0.655	0.0075	0.0749	0.1124	0.2247	11423	1142	762	381

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Appendix C Carbaryl Postapplication Cancer Risk Assessment For Evergreen Tree Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Evergreen Tree Fruit
Specific Crop(s) Considered:	Avocados, conifers, dates, grapefruit, lemons, mangoes, oranges, papaya
Application Rate of Crop (lb ai/A):	5

DFR Data Summary

Data Source (Enter 1 if data available):	1
Source:	AHTF Olive Farming Study (Aerial Application, Table 45, 7/31/97)
Slope of Semilog Regression:	0.0087
(Initial) (ug/cm2):	5.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

(Note: Enter application rate of crop if no data available in study rate cell.)

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	propping
Low	1000	197 to 2302	irrigation, scouting, hand weeding, thinning Christmas trees, pruning
Medium	1500	360 to 4000	harvesting, pollination, bagging, tying, misc. hand labor, staking, topping, training
High	3000	1400 to 4000	thinning
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)				RISKS FOR PRIVATE GROWERS								RISKS FOR PROFESSIONAL FARMWORKERS							
							Very Low Exposure		Low Exposure		Medium Exposure		High Exposure		Very Low Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	3.0670	2.0046	2.9E-03	0.0291	0.044	0.087	4.0E-05	3.5E-08	4.0E-04	3.5E-07	6.0E-04	5.2E-07	1.2E-03	1.0E-06	1.2E-04	1.0E-07	1.2E-03	1.0E-06	1.8E-03	1.6E-06	3.6E-03	3.1E-06
1	2.7786	1.8160	2.6E-03	0.0264	0.040	0.079	3.6E-05	3.2E-08	3.6E-04	3.2E-07	5.4E-04	4.7E-07	1.1E-03	9.5E-07	1.1E-04	9.5E-08	1.1E-03	9.5E-07	1.6E-03	1.4E-06	3.2E-03	2.8E-06
2	2.5179	1.6452	2.4E-03	0.0239	0.036	0.072	3.3E-05	2.9E-08	3.3E-04	2.9E-07	4.9E-04	4.3E-07	9.8E-04	8.6E-07	9.8E-05	8.6E-08	9.8E-04	8.6E-07	1.5E-03	1.3E-06	2.9E-03	2.6E-06
3	2.2805	1.4905	2.2E-03	0.0216	0.032	0.065	3.0E-05	2.6E-08	3.0E-04	2.6E-07	4.4E-04	3.9E-07	8.9E-04	7.8E-07	8.9E-05	7.8E-08	8.9E-04	7.8E-07	1.3E-03	1.2E-06	2.7E-03	2.3E-06
4	2.0660	1.3503	2.0E-03	0.0196	0.029	0.059	2.7E-05	2.3E-08	2.7E-04	2.3E-07	4.0E-04	3.5E-07	8.1E-04	7.0E-07	8.1E-05	7.0E-08	8.1E-04	7.0E-07	1.2E-03	1.1E-06	2.4E-03	2.1E-06
5	1.8717	1.2233	1.8E-03	0.0178	0.027	0.053	2.4E-05	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.2E-07	7.3E-04	6.4E-07	7.3E-05	6.4E-08	7.3E-04	6.4E-07	1.1E-03	9.6E-07	2.2E-03	1.9E-06
6	1.6957	1.1083	1.6E-03	0.0161	0.024	0.048	2.2E-05	1.9E-08	2.2E-04	1.9E-07	3.3E-04	2.9E-07	6.6E-04	5.8E-07	6.6E-05	5.8E-08	6.6E-04	5.8E-07	9.9E-04	8.7E-07	2.0E-03	1.7E-06
7	1.5362	1.0041	1.5E-03	0.0146	0.022	0.044	2.0E-05	1.7E-08	2.0E-04	1.7E-07	3.0E-04	2.6E-07	6.0E-04	5.2E-07	6.0E-05	5.2E-08	6.0E-04	5.2E-07	9.0E-04	7.9E-07	1.8E-03	1.6E-06
8	1.3917	0.9096	1.3E-03	0.0132	0.020	0.040	1.8E-05	1.6E-08	1.8E-04	1.6E-07	2.7E-04	2.4E-07	5.4E-04	4.7E-07	5.4E-05	4.7E-08	5.4E-04	4.7E-07	8.1E-04	7.1E-07	1.6E-03	1.4E-06
9	1.2608	0.8241	1.2E-03	0.0120	0.018	0.036	1.6E-05	1.4E-08	1.6E-04	1.4E-07	2.5E-04	2.2E-07	4.9E-04	4.3E-07	4.9E-05	4.3E-08	4.9E-04	4.3E-07	7.4E-04	6.5E-07	1.5E-03	1.3E-06
10	1.1422	0.7466	1.1E-03	0.0108	0.016	0.032	1.5E-05	1.3E-08	1.5E-04	1.3E-07	2.2E-04	1.9E-07	4.5E-04	3.9E-07	4.5E-05	3.9E-08	4.5E-04	3.9E-07	6.7E-04	5.8E-07	1.3E-03	1.2E-06
11	1.0348	0.6764	9.8E-04	0.0098	0.015	0.029	1.3E-05	1.2E-08	1.3E-04	1.2E-07	2.0E-04	1.8E-07	4.0E-04	3.5E-07	4.0E-05	3.5E-08	4.0E-04	3.5E-07	6.1E-04	5.3E-07	1.2E-03	1.1E-06
12	0.9375	0.6127	8.9E-04	0.0089	0.013	0.027	1.2E-05	1.1E-08	1.2E-04	1.1E-07	1.8E-04	1.6E-07	3.7E-04	3.2E-07	3.7E-05	3.2E-08	3.7E-04	3.2E-07	5.5E-04	4.8E-07	1.1E-03	9.6E-07
13	0.8493	0.5551	8.1E-04	0.0081	0.012	0.024	1.1E-05	9.7E-09	1.1E-04	9.7E-08	1.7E-04	1.4E-07	3.3E-04	2.9E-07	3.3E-05	2.9E-08	3.3E-04	2.9E-07	5.0E-04	4.3E-07	9.9E-04	8.7E-07
14	0.7694	0.5029	7.3E-04	0.0073	0.011	0.022	1.0E-05	8.7E-09	1.0E-04	8.7E-08	1.5E-04	1.3E-07	3.0E-04	2.6E-07	3.0E-05	2.6E-08	3.0E-04	2.6E-07	4.5E-04	3.9E-07	9.0E-04	7.9E-07
15	0.6971	0.4556	6.6E-04	0.0066	0.010	0.020	9.1E-06	7.9E-09	9.1E-05	7.9E-08	1.4E-04	1.2E-07	2.7E-04	2.4E-07	2.7E-05	2.4E-08	2.7E-04	2.4E-07	4.1E-04	3.6E-07	8.2E-04	7.1E-07
16	0.6315	0.4128	6.0E-04	0.0060	0.009	0.018	8.2E-06	7.2E-09	8.2E-05	7.2E-08	1.2E-04	1.1E-07	2.5E-04	2.2E-07	2.5E-05	2.2E-08	2.5E-04	2.2E-07	3.7E-04	3.2E-07	7.4E-04	6.5E-07
17	0.5721	0.3739	5.4E-04	0.0054	0.008	0.016	7.4E-06	6.5E-09	7.4E-05	6.5E-08	1.1E-04	9.8E-08	2.2E-04	2.0E-07	2.2E-05	2.0E-08	2.2E-04	2.0E-07	3.3E-04	2.9E-07	6.7E-04	5.9E-07
18	0.5183	0.3388	4.9E-04	0.0049	0.007	0.015	6.7E-06	5.9E-09	6.7E-05	5.9E-08	1.0E-04	8.8E-08	2.0E-04	1.8E-07	2.0E-05	1.8E-08	2.0E-04	1.8E-07	3.0E-04	2.7E-07	6.1E-04	5.3E-07
19	0.4696	0.3069	4.5E-04	0.0045	0.007	0.013	6.1E-06	5.3E-09	6.1E-05	5.3E-08	9.2E-05	8.0E-08	1.8E-04	1.6E-07	1.8E-05	1.6E-08	1.8E-04	1.6E-07	2.7E-04	2.4E-07	5.5E-04	4.8E-07
20	0.4254	0.2780	4.0E-04	0.0040	0.006	0.012	5.5E-06	4.8E-09	5.5E-05	4.8E-08	8.3E-05	7.3E-08	1.7E-04	1.5E-07	1.7E-05	1.5E-08	1.7E-04	1.5E-07	2.5E-04	2.2E-07	5.0E-04	4.4E-07
21	0.3854	0.2519	3.7E-04	0.0037	0.005	0.011	5.0E-06	4.4E-09	5.0E-05	4.4E-08	7.5E-05	6.6E-08	1.5E-04	1.3E-07	1.5E-05	1.3E-08	1.5E-04	1.3E-07	2.3E-04	2.0E-07	4.5E-04	3.9E-07
22	0.3492	0.2282	3.3E-04	0.0033	0.005	0.010	4.5E-06	4.0E-09	4.5E-05	4.0E-08	6.8E-05	6.0E-08	1.4E-04	1.2E-07	1.4E-05	1.2E-08	1.4E-04	1.2E-07	2.0E-04	1.8E-07	4.1E-04	3.6E-07
23	0.3163	0.2067	3.0E-04	0.0030	0.005	0.009	4.1E-06	3.6E-09	4.1E-05	3.6E-08	6.2E-05	5.4E-08	1.2E-04	1.1E-07	1.2E-05	1.1E-08	1.2E-04	1.1E-07	1.8E-04	1.6E-07	3.7E-04	3.2E-07
24	0.2866	0.1873	2.7E-04	0.0027	0.004	0.008	3.7E-06	3.3E-09	3.7E-05	3.3E-08	5.6E-05	4.9E-08	1.1E-04	9.8E-08	1.1E-05	9.8E-09	1.1E-04	9.8E-08	1.7E-04	1.5E-07	3.4E-04	2.9E-07
25	0.2596	0.1697	2.5E-04	0.0025	0.004	0.007	3.4E-06	3.0E-09	3.4E-05	3.0E-08	5.1E-05	4.4E-08	1.0E-04	8.9E-08	1.0E-05	8.9E-09	1.0E-04	8.9E-08	1.5E-04	1.3E-07	3.0E-04	2.7E-07
26	0.2352	0.1537	2.2E-04	0.0022	0.003	0.007	3.1E-06	2.7E-09	3.1E-05	2.7E-08	4.6E-05	4.0E-08	9.2E-05	8.0E-08	9.2E-06	8.0E-09	9.2E-05	8.0E-08	1.4E-04	1.2E-07	2.8E-04	2.4E-07
27	0.2131	0.1393	2.0E-04	0.0020	0.003	0.006	2.8E-06	2.4E-09	2.8E-05	2.4E-08	4.2E-05	3.6E-08	8.3E-05	7.3E-08	8.3E-06	7.3E-09	8.3E-05	7.3E-08	1.2E-04	1.1E-07	2.5E-04	2.2E-07
28	0.1930	0.1262	1.8E-04	0.0018	0.003	0.005	2.5E-06	2.2E-09	2.5E-05	2.2E-08	3.8E-05	3.3E-08	7.5E-05	6.6E-08	7.5E-06	6.6E-09	7.5E-05	6.6E-08	1.1E-04	9.9E-08	2.3E-04	2.0E-07
29	0.1749	0.1143	1.7E-04	0.0017	0.002	0.005	2.3E-06	2.0E-09	2.3E-05	2.0E-08	3.4E-05	3.0E-08	6.8E-05	6.0E-08	6.8E-06	6.0E-09	6.8E-05	6.0E-08	1.0E-04	8.9E-08	2.0E-04	1.8E-07
30	0.1584	0.1036	1.5E-04	0.0015	0.002	0.005	2.1E-06	1.8E-09	2.1E-05	1.8E-08	3.1E-05	2.7E-08	6.2E-05	5.4E-08	6.2E-06	5.4E-09	6.2E-05	5.4E-08	9.3E-05	8.1E-08	1.9E-04	1.6E-07

D334881
Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Evergreen Tree Crop Group (FL)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Evergreen Tree Fruit
Specific Crop(s) Considered:	Avocados, conifers, dates, grapefruit, lemons, mangoes, oranges, papaya
Application Rate of Crop (lb ai/A):	8

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Olive Pruning Study (Airblast Application), MRID 451751-02
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	propping
Low	1000	197 to 2302	irrigation, scouting, hand weeding, thinning Christmas trees, pruning
Medium	1500	360 to 4000	harvesting, pollination, bagging, tying, misc. hand labor, staking, topping, training
High	3000	1400 to 4000	thinning
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)				MOEs			
	Not Adjusted	Adjusted For Rate	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure
0	3.067	3.207	0.0367	0.3666	0.5498	1.0997	2334	233	156	78
1	2.779	2.906	0.0332	0.3321	0.4981	0.9962	2577	258	172	86
2	2.517	2.632	0.0301	0.3008	0.4513	0.9025	2844	284	190	95
3	2.280	2.385	0.0273	0.2726	0.4088	0.8177	3139	314	209	105
4	2.066	2.161	0.0247	0.2469	0.3704	0.7408	3465	347	231	116
5	1.872	1.957	0.0224	0.2237	0.3355	0.6711	3825	382	255	127
6	1.696	1.773	0.0203	0.2027	0.3040	0.6080	4222	422	281	141
7	1.536	1.606	0.0184	0.1836	0.2754	0.5508	4660	466	311	155
8	1.392	1.455	0.0166	0.1663	0.2495	0.4990	5144	514	343	171
9	1.261	1.319	0.0151	0.1507	0.2260	0.4521	5678	568	379	189
10	1.142	1.195	0.0137	0.1365	0.2048	0.4095	6267	627	418	209
11	1.035	1.082	0.0124	0.1237	0.1855	0.3710	6918	692	461	231
12	0.937	0.980	0.0112	0.1120	0.1681	0.3361	7636	764	509	255
13	0.849	0.888	0.0102	0.1015	0.1523	0.3045	8429	843	562	281
14	0.769	0.805	0.0092	0.0920	0.1379	0.2759	9304	930	620	310
15	0.697	0.729	0.0083	0.0833	0.1250	0.2499	10270	1027	685	342
16	0.632	0.660	0.0075	0.0755	0.1132	0.2264	11336	1134	756	378
17	0.572	0.598	0.0068	0.0684	0.1026	0.2051	12513	1251	834	417
18	0.518	0.542	0.0062	0.0619	0.0929	0.1858	13812	1381	921	460
19	0.470	0.491	0.0056	0.0561	0.0842	0.1684	15246	1525	1016	508
20	0.425	0.445	0.0051	0.0508	0.0763	0.1525	16828	1683	1122	561
21	0.385	0.403	0.0046	0.0461	0.0691	0.1382	18575	1858	1238	619
22	0.349	0.365	0.0042	0.0417	0.0626	0.1252	20504	2050	1367	683
23	0.316	0.331	0.0038	0.0378	0.0567	0.1134	22632	2263	1509	754
24	0.287	0.300	0.0034	0.0342	0.0514	0.1027	24982	2498	1665	833
25	0.260	0.271	0.0031	0.0310	0.0465	0.0931	27575	2758	1838	919
26	0.235	0.246	0.0028	0.0281	0.0422	0.0843	30438	3044	2029	1015
27	0.213	0.223	0.0025	0.0255	0.0382	0.0764	33598	3360	2240	1120

28	0.193	0.202	0.0023	0.0231	0.0346	0.0692	37085	3709	2472	1236
29	0.175	0.183	0.0021	0.0209	0.0314	0.0627	40935	4094	2729	1365
30	0.158	0.166	0.0019	0.0189	0.0284	0.0568	45185	4519	3012	1506
Int-Term (30 day average)	1.003	1.049	0.0120	0.1198	0.1798	0.3595	7140	714	476	238

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D334681
Appendix C: Carbaryl Postapplication Cancer Risk Assessment For Evergreen Tree Crop Group (FL)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	10/2/2
Transfer Coefficient Group	Evergreen Tree Fruit
Specific Crop(s) Considered:	Arcadian, conifers, Douglas, grandfir, [illegible], mangrove, [illegible], [illegible]
Application Rate of Crop (lb ai/A)	7.

DFR Data Summary

Data Source (enter 1 if data available, 0 if)	1
Source:	ARTF Olive Pruning Study (Airblast Application). MRID 451751-02
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025
[Note: Enter application rate of crop if no data available in study rate cell.]	

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	dropping
Low	1000	197 to 2302	irrigation, scouting, hand weeding, thinning Christmas trees, pruning
Medium	1500	360 to 4000	harvesting, pollination, bagging, tying, misc. hand labor, staking, topping, training
High	3000	1400 to 4000	thinning
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)				RISKS FOR PRIVATE GROWERS								RISKS FOR PROFESSIONAL FARMWORKERS							
							Very Low Exposure		Low Exposure		Medium Exposure		High Exposure		Very Low Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	3.0670	3.2073	4.7E-03	0.0466	0.070	0.140	6.4E-05	5.6E-08	6.4E-04	5.6E-07	9.6E-04	8.4E-07	1.9E-03	1.7E-06	1.9E-04	1.7E-07	1.9E-03	1.7E-06	2.9E-03	2.5E-06	5.7E-03	5.0E-06
1	2.7766	2.9057	4.2E-03	0.0422	0.063	0.127	5.8E-05	5.1E-08	5.8E-04	5.1E-07	8.7E-04	7.6E-07	1.7E-03	1.5E-06	1.7E-04	1.5E-07	1.7E-03	1.5E-06	2.6E-03	2.3E-06	5.2E-03	4.5E-06
2	2.5172	2.6324	3.8E-03	0.0382	0.057	0.115	5.2E-05	4.6E-08	5.2E-04	4.6E-07	7.9E-04	6.9E-07	1.6E-03	1.4E-06	1.6E-04	1.4E-07	1.6E-03	1.4E-06	2.4E-03	2.1E-06	4.7E-03	4.1E-06
3	2.2805	2.3848	3.5E-03	0.0346	0.052	0.104	4.7E-05	4.1E-08	4.7E-04	4.1E-07	7.1E-04	6.2E-07	1.4E-03	1.2E-06	1.4E-04	1.2E-07	1.4E-03	1.2E-06	2.1E-03	1.9E-06	4.3E-03	3.7E-06
4	2.0660	2.1605	3.1E-03	0.0314	0.047	0.094	4.3E-05	3.8E-08	4.3E-04	3.8E-07	6.4E-04	5.6E-07	1.3E-03	1.1E-06	1.3E-04	1.1E-07	1.3E-03	1.1E-06	1.9E-03	1.7E-06	3.9E-03	3.4E-06
5	1.8717	1.9573	2.8E-03	0.0284	0.043	0.085	3.9E-05	3.4E-08	3.9E-04	3.4E-07	5.8E-04	5.1E-07	1.2E-03	1.0E-06	1.2E-04	1.0E-07	1.2E-03	1.0E-06	1.8E-03	1.5E-06	3.5E-03	3.1E-06
6	1.6957	1.7733	2.6E-03	0.0257	0.039	0.077	3.5E-05	3.1E-08	3.5E-04	3.1E-07	5.3E-04	4.6E-07	1.1E-03	9.3E-07	1.1E-04	9.3E-08	1.1E-03	9.3E-07	1.6E-03	1.4E-06	3.2E-03	2.8E-06
7	1.5362	1.6065	2.3E-03	0.0233	0.035	0.070	3.2E-05	2.8E-08	3.2E-04	2.8E-07	4.8E-04	4.2E-07	9.6E-04	8.4E-07	9.6E-05	8.4E-08	9.6E-04	8.4E-07	1.4E-03	1.3E-06	2.9E-03	2.5E-06
8	1.3917	1.4554	2.1E-03	0.0211	0.032	0.063	2.9E-05	2.5E-08	2.9E-04	2.5E-07	4.3E-04	3.8E-07	8.7E-04	7.6E-07	8.7E-05	7.6E-08	8.7E-04	7.6E-07	1.3E-03	1.1E-06	2.6E-03	2.3E-06
9	1.2608	1.3185	1.9E-03	0.0191	0.029	0.057	2.6E-05	2.3E-08	2.6E-04	2.3E-07	3.9E-04	3.4E-07	7.9E-04	6.9E-07	7.9E-05	6.9E-08	7.9E-04	6.9E-07	1.2E-03	1.0E-06	2.4E-03	2.1E-06
10	1.1422	1.1945	1.7E-03	0.0173	0.026	0.052	2.4E-05	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.1E-07	7.1E-04	6.2E-07	7.1E-05	6.2E-08	7.1E-04	6.2E-07	1.1E-03	9.4E-07	2.1E-03	1.9E-06
11	1.0348	1.0822	1.6E-03	0.0157	0.024	0.047	2.2E-05	1.9E-08	2.2E-04	1.9E-07	3.2E-04	2.8E-07	6.5E-04	5.6E-07	6.5E-05	5.6E-08	6.5E-04	5.6E-07	9.7E-04	8.5E-07	1.9E-03	1.7E-06
12	0.9375	0.9804	1.4E-03	0.0142	0.021	0.043	1.9E-05	1.7E-08	1.9E-04	1.7E-07	2.9E-04	2.6E-07	5.8E-04	5.1E-07	5.8E-05	5.1E-08	5.8E-04	5.1E-07	8.8E-04	7.7E-07	1.8E-03	1.5E-06
13	0.8493	0.8882	1.3E-03	0.0129	0.019	0.039	1.8E-05	1.5E-08	1.8E-04	1.5E-07	2.6E-04	2.3E-07	5.3E-04	4.6E-07	5.3E-05	4.6E-08	5.3E-04	4.6E-07	7.9E-04	7.0E-07	1.6E-03	1.4E-06
14	0.7694	0.8047	1.2E-03	0.0117	0.018	0.035	1.6E-05	1.4E-08	1.6E-04	1.4E-07	2.4E-04	2.1E-07	4.8E-04	4.2E-07	4.8E-05	4.2E-08	4.8E-04	4.2E-07	7.2E-04	6.3E-07	1.4E-03	1.3E-06
15	0.6971	0.7290	1.1E-03	0.0106	0.016	0.032	1.4E-05	1.3E-08	1.4E-04	1.3E-07	2.2E-04	1.9E-07	4.3E-04	3.8E-07	4.3E-05	3.8E-08	4.3E-04	3.8E-07	6.5E-04	5.7E-07	1.3E-03	1.1E-06
16	0.6315	0.6604	9.6E-04	0.0096	0.014	0.029	1.3E-05	1.1E-08	1.3E-04	1.1E-07	2.0E-04	1.7E-07	3.9E-04	3.4E-07	3.9E-05	3.4E-08	3.9E-04	3.4E-07	5.9E-04	5.2E-07	1.2E-03	1.0E-06
17	0.5721	0.5983	8.7E-04	0.0087	0.013	0.026	1.2E-05	1.0E-08	1.2E-04	1.0E-07	1.8E-04	1.6E-07	3.6E-04	3.1E-07	3.6E-05	3.1E-08	3.6E-04	3.1E-07	5.4E-04	4.7E-07	1.1E-03	9.4E-07
18	0.5183	0.5420	7.9E-04	0.0079	0.012	0.024	1.1E-05	9.4E-09	1.1E-04	9.4E-08	1.6E-04	1.4E-07	3.2E-04	2.8E-07	3.2E-05	2.8E-08	3.2E-04	2.8E-07	4.8E-04	4.2E-07	9.7E-04	8.5E-07
19	0.4696	0.4911	7.1E-04	0.0071	0.011	0.021	9.8E-06	8.5E-09	9.8E-05	8.5E-08	1.5E-04	1.3E-07	2.9E-04	2.6E-07	2.9E-05	2.6E-08	2.9E-04	2.6E-07	4.4E-04	3.8E-07	8.8E-04	7.7E-07
20	0.4254	0.4449	6.5E-04	0.0065	0.010	0.019	8.8E-06	7.7E-09	8.8E-05	7.7E-08	1.3E-04	1.2E-07	2.7E-04	2.3E-07	2.7E-05	2.3E-08	2.7E-04	2.3E-07	4.0E-04	3.5E-07	8.0E-04	7.0E-07
21	0.3854	0.4030	5.8E-04	0.0058	0.009	0.018	8.0E-06	7.0E-09	8.0E-05	7.0E-08	1.2E-04	1.1E-07	2.4E-04	2.1E-07	2.4E-05	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.2E-07	7.2E-04	6.3E-07
22	0.3492	0.3651	5.3E-04	0.0053	0.008	0.016	7.3E-06	6.4E-09	7.3E-05	6.4E-08	1.1E-04	9.5E-08	2.2E-04	1.9E-07	2.2E-05	1.9E-08	2.2E-04	1.9E-07	3.3E-04	2.9E-07	6.5E-04	5.7E-07
23	0.3163	0.3308	4.8E-04	0.0048	0.007	0.014	6.6E-06	5.8E-09	6.6E-05	5.8E-08	9.9E-05	8.6E-08	2.0E-04	1.7E-07	2.0E-05	1.7E-08	2.0E-04	1.7E-07	3.0E-04	2.6E-07	5.9E-04	5.2E-07
24	0.2866	0.2997	4.3E-04	0.0043	0.007	0.013	6.0E-06	5.2E-09	6.0E-05	5.2E-08	8.9E-05	7.8E-08	1.8E-04	1.6E-07	1.8E-05	1.6E-08	1.8E-04	1.6E-07	2.7E-04	2.3E-07	5.4E-04	4.7E-07
25	0.2596	0.2715	3.9E-04	0.0039	0.006	0.012	5.4E-06	4.7E-09	5.4E-05	4.7E-08	8.1E-05	7.1E-08	1.6E-04	1.4E-07	1.6E-05	1.4E-08	1.6E-04	1.4E-07	2.4E-04	2.1E-07	4.9E-04	4.3E-07
26	0.2352	0.2460	3.6E-04	0.0036	0.005	0.011	4.9E-06	4.3E-09	4.9E-05	4.3E-08	7.3E-05	6.4E-08	1.5E-04	1.3E-07	1.5E-05	1.3E-08	1.5E-04	1.3E-07	2.2E-04	1.9E-07	4.4E-04	3.9E-07
27	0.2131	0.2228	3.2E-04	0.0032	0.005	0.010	4.4E-06	3.9E-09	4.4E-05	3.9E-08	6.6E-05	5.8E-08	1.3E-04	1.2E-07	1.3E-05	1.2E-08	1.3E-04	1.2E-07	2.0E-04	1.7E-07	4.0E-04	3.5E-07
28	0.1930	0.2019	2.9E-04	0.0029	0.004	0.009	4.0E-06	3.5E-09	4.0E-05	3.5E-08	6.0E-05	5.3E-08	1.2E-04	1.1E-07	1.2E-05	1.1E-08	1.2E-04	1.1E-07	1.8E-04	1.6E-07	3.6E-04	3.2E-07
29	0.1749	0.1829	2.7E-04	0.0027	0.004	0.008	3.6E-06	3.2E-09	3.6E-05	3.2E-08	5.5E-05	4.8E-08	1.1E-04	9.5E-08	1.1E-05	9.5E-09	1.1E-04	9.5E-08	1.6E-04	1.4E-07	3.3E-04	2.9E-07
30	0.1584	0.1657	2.4E-04	0.0024	0.004	0.007	3.3E-06	2.9E-09	3.3E-05	2.9E-08	4.9E-05	4.3E-08	9.9E-05	8.6E-08	9.9E-06	8.6E-09	9.9E-05	8.6E-08	1.5E-04	1.3E-07	3.0E-04	2.6E-07

D334881
Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Evergreen Tree Crop Group (CA)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1: Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Evergreen Tree Fruit
Specific Crop(s) Considered:	Avocados, conifers, dates, grapefruit, lemons, mangoes, oranges, papaya
Application Rate of Crop (lb ai/A):	12

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Olive Pruning Study (Airblast Application), MRID 451751-02
Slope of Semilog Regression:	-0.09877
(Initial) (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	propping
Low	1000	197 to 2302	Irrigation, scouting, hand weeding, thinning Christmas trees, pruning
Medium	1500	360 to 4000	harvesting, pollination, bagging, tying, misc. hand labor, staking, topping, training
High	3000	1400 to 4000	thinning
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)				MOEs			
	Not Adjusted	Adjusted For Rate	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure
0	3.067	4.811	0.0550	0.5498	0.8247	1.6495	1556	156	104	52
1	2.779	4.359	0.0498	0.4981	0.7472	1.4943	1718	172	115	57
2	2.517	3.949	0.0451	0.4513	0.6769	1.3538	1896	190	126	63
3	2.280	3.577	0.0409	0.4088	0.6132	1.2265	2093	209	140	70
4	2.066	3.241	0.0370	0.3704	0.5556	1.1111	2310	231	154	77
5	1.872	2.936	0.0336	0.3355	0.5033	1.0066	2550	255	170	85
6	1.696	2.660	0.0304	0.3040	0.4560	0.9120	2815	281	188	94
7	1.536	2.410	0.0275	0.2754	0.4131	0.8262	3107	311	207	104
8	1.392	2.183	0.0249	0.2495	0.3742	0.7485	3429	343	229	114
9	1.261	1.978	0.0226	0.2260	0.3390	0.6781	3785	379	252	126
10	1.142	1.792	0.0205	0.2048	0.3072	0.6143	4178	418	279	139
11	1.035	1.623	0.0186	0.1855	0.2783	0.5565	4612	461	307	154
12	0.937	1.471	0.0168	0.1681	0.2521	0.5042	5091	509	339	170
13	0.849	1.332	0.0152	0.1523	0.2284	0.4568	5619	562	375	187
14	0.769	1.207	0.0138	0.1379	0.2069	0.4138	6203	620	414	207
15	0.697	1.093	0.0125	0.1250	0.1875	0.3749	6847	685	456	228
16	0.632	0.991	0.0113	0.1132	0.1698	0.3396	7557	756	504	252
17	0.572	0.897	0.0103	0.1026	0.1538	0.3077	8342	834	556	278
18	0.518	0.813	0.0093	0.0929	0.1394	0.2788	9208	921	614	307
19	0.470	0.737	0.0084	0.0842	0.1263	0.2525	10164	1016	678	339
20	0.425	0.667	0.0076	0.0763	0.1144	0.2288	11219	1122	748	374
21	0.385	0.605	0.0069	0.0691	0.1036	0.2073	12384	1238	826	413
22	0.349	0.548	0.0063	0.0626	0.0939	0.1878	13669	1367	911	456
23	0.316	0.496	0.0057	0.0567	0.0851	0.1701	15088	1509	1006	503
24	0.287	0.450	0.0051	0.0514	0.0771	0.1541	16655	1665	1110	555
25	0.260	0.407	0.0047	0.0465	0.0698	0.1396	18383	1838	1226	613
26	0.235	0.369	0.0042	0.0422	0.0632	0.1265	20292	2029	1353	676
27	0.213	0.334	0.0038	0.0382	0.0573	0.1146	22398	2240	1493	747

28	0.190	0.303	0.0035	0.0346	0.0519	0.1038	24724	2472	1648	824
29	0.175	0.274	0.0031	0.0314	0.0470	0.0941	27290	2729	1819	910
30	0.158	0.249	0.0028	0.0284	0.0426	0.0852	30123	3012	2008	1004
Int-Term (30 day average)	1.003	1.573	0.0180	0.1798	0.2696	0.5393	4760	476	317	159

D334881
Appendix C. Carbaryl Postapplication Cancer Risk Assessment For Evergreen Tree Crop Group (CA)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3 1, Updated DFR, and Updated Hazard Data
[illegible]	29765
Transfer Coefficient Group:	Evergreen Tree Crop
[illegible]	[illegible]
Application Rate of Crop (lb a.i./A):	12

DFR Data Summary

Data Source (enter 1 if data available	1
Source:	ARTF Olive Pruning Study (Airblast Application) MRID 451751-02
Slope of Semilog Regression	-0.09877
(Initial) (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.05
Limit of Quantification (ug/cm2):	0.0025
(Note: Enter application rate of crop if no data available in study rate cell.)	

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	100	100	dropping
Low	1000	197 to 2302	irrigation, scouting, hand weeding, thinning Christmas trees, pruning
Medium	1500	360 to 4000	harvesting, pollination, bagging, tying, misc. hand labor, staking, topping, training
High	3000	1400 to 4000	thinning
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)				RISKS FOR PRIVATE GROWERS								RISKS FOR PROFESSIONAL FARMWORKERS							
							Very Low Exposure		Low Exposure		Medium Exposure		High Exposure		Very Low Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Very Low Exposure	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	3.0670	4.8110	7.0E-03	0.0698	0.105	0.209	9.6E-05	8.4E-08	9.6E-04	8.4E-07	1.4E-03	1.3E-06	2.9E-03	2.5E-06	2.9E-04	2.5E-07	2.9E-03	2.5E-06	4.3E-03	3.8E-06	8.6E-03	7.5E-06
1	2.7786	4.3585	6.3E-03	0.0633	0.095	0.190	8.7E-05	7.6E-08	8.7E-04	7.6E-07	1.3E-03	1.1E-06	2.6E-03	2.3E-06	2.6E-04	2.3E-07	2.6E-03	2.3E-06	3.9E-03	3.4E-06	7.8E-03	6.8E-06
2	2.5172	3.9486	5.7E-03	0.0573	0.086	0.172	7.9E-05	6.9E-08	7.9E-04	6.9E-07	1.2E-03	1.0E-06	2.4E-03	2.1E-06	2.4E-04	2.1E-07	2.4E-03	2.1E-06	3.5E-03	3.1E-06	7.1E-03	6.2E-06
3	2.2805	3.5772	5.2E-03	0.0519	0.078	0.156	7.1E-05	6.2E-08	7.1E-04	6.2E-07	1.1E-03	9.3E-07	2.1E-03	1.9E-06	2.1E-04	1.9E-07	2.1E-03	1.9E-06	3.2E-03	2.8E-06	6.4E-03	5.6E-06
4	2.0660	3.2408	4.7E-03	0.0470	0.071	0.141	6.4E-05	5.6E-08	6.4E-04	5.6E-07	9.7E-04	8.5E-07	1.9E-03	1.7E-06	1.9E-04	1.7E-07	1.9E-03	1.7E-06	2.9E-03	2.5E-06	5.8E-03	5.1E-06
5	1.8717	2.9360	4.3E-03	0.0426	0.064	0.128	5.8E-05	5.1E-08	5.8E-04	5.1E-07	8.8E-04	7.7E-07	1.8E-03	1.6E-06	1.8E-04	1.5E-07	1.8E-03	1.6E-06	2.6E-03	2.3E-06	5.3E-03	4.6E-06
6	1.6957	2.6599	3.9E-03	0.0386	0.058	0.116	5.3E-05	4.6E-08	5.3E-04	4.6E-07	7.9E-04	6.9E-07	1.6E-03	1.4E-06	1.6E-04	1.4E-07	1.6E-03	1.4E-06	2.4E-03	2.1E-06	4.8E-03	4.2E-06
7	1.5362	2.4097	3.5E-03	0.0350	0.052	0.105	4.8E-05	4.2E-08	4.8E-04	4.2E-07	7.2E-04	6.3E-07	1.4E-03	1.3E-06	1.4E-04	1.3E-07	1.4E-03	1.3E-06	2.2E-03	1.9E-06	4.3E-03	3.8E-06
8	1.3917	2.1831	3.2E-03	0.0317	0.048	0.095	4.3E-05	3.8E-08	4.3E-04	3.8E-07	6.5E-04	5.7E-07	1.3E-03	1.1E-06	1.3E-04	1.1E-07	1.3E-03	1.1E-06	2.0E-03	1.7E-06	3.9E-03	3.4E-06
9	1.2608	1.9778	2.9E-03	0.0287	0.043	0.086	3.9E-05	3.4E-08	3.9E-04	3.4E-07	5.9E-04	5.2E-07	1.2E-03	1.0E-06	1.2E-04	1.0E-07	1.2E-03	1.0E-06	1.8E-03	1.5E-06	3.5E-03	3.1E-06
10	1.1422	1.7918	2.6E-03	0.0260	0.039	0.078	3.6E-05	3.1E-08	3.6E-04	3.1E-07	5.3E-04	4.7E-07	1.1E-03	9.4E-07	1.1E-04	9.4E-08	1.1E-03	9.4E-07	1.6E-03	1.4E-06	3.2E-03	2.8E-06
11	1.0346	1.6233	2.4E-03	0.0236	0.035	0.071	3.2E-05	2.8E-08	3.2E-04	2.8E-07	4.8E-04	4.2E-07	9.7E-04	8.5E-07	9.7E-05	8.5E-08	9.7E-04	8.5E-07	1.5E-03	1.3E-06	2.9E-03	2.5E-06
12	0.9375	1.4706	2.1E-03	0.0213	0.032	0.064	2.9E-05	2.6E-08	2.9E-04	2.6E-07	4.4E-04	3.8E-07	8.8E-04	7.7E-07	8.8E-05	7.7E-08	8.8E-04	7.7E-07	1.3E-03	1.2E-06	2.6E-03	2.3E-06
13	0.8493	1.3323	1.9E-03	0.0193	0.029	0.058	2.6E-05	2.3E-08	2.6E-04	2.3E-07	4.0E-04	3.5E-07	7.9E-04	7.0E-07	7.9E-05	7.0E-08	7.9E-04	7.0E-07	1.2E-03	1.0E-06	2.4E-03	2.1E-06
14	0.7694	1.2070	1.8E-03	0.0175	0.026	0.053	2.4E-05	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.1E-07	7.2E-04	6.3E-07	7.2E-05	6.3E-08	7.2E-04	6.3E-07	1.1E-03	9.4E-07	2.2E-03	1.9E-06
15	0.6971	1.0935	1.6E-03	0.0159	0.024	0.048	2.2E-05	1.9E-08	2.2E-04	1.9E-07	3.3E-04	2.9E-07	6.5E-04	5.7E-07	6.5E-05	5.7E-08	6.5E-04	5.7E-07	9.8E-04	8.6E-07	2.0E-03	1.7E-06
16	0.6315	0.9906	1.4E-03	0.0144	0.022	0.043	2.0E-05	1.7E-08	2.0E-04	1.7E-07	3.0E-04	2.6E-07	5.9E-04	5.2E-07	5.9E-05	5.2E-08	5.9E-04	5.2E-07	8.9E-04	7.8E-07	1.8E-03	1.6E-06
17	0.5721	0.8975	1.3E-03	0.0130	0.020	0.039	1.8E-05	1.6E-08	1.8E-04	1.6E-07	2.7E-04	2.3E-07	5.4E-04	4.7E-07	5.4E-05	4.7E-08	5.4E-04	4.7E-07	8.0E-04	7.0E-07	1.6E-03	1.4E-06
18	0.5183	0.8131	1.2E-03	0.0118	0.018	0.035	1.6E-05	1.4E-08	1.6E-04	1.4E-07	2.4E-04	2.1E-07	4.8E-04	4.2E-07	4.8E-05	4.2E-08	4.8E-04	4.2E-07	7.3E-04	6.4E-07	1.5E-03	1.3E-06
19	0.4696	0.7366	1.1E-03	0.0107	0.016	0.032	1.5E-05	1.3E-08	1.5E-04	1.3E-07	2.2E-04	1.9E-07	4.4E-04	3.8E-07	4.4E-05	3.8E-08	4.4E-04	3.8E-07	6.6E-04	5.8E-07	1.3E-03	1.2E-06
20	0.4254	0.6673	9.7E-04	0.0097	0.015	0.029	1.3E-05	1.2E-08	1.3E-04	1.2E-07	2.0E-04	1.7E-07	4.0E-04	3.5E-07	4.0E-05	3.5E-08	4.0E-04	3.5E-07	6.0E-04	5.2E-07	1.2E-03	1.0E-06
21	0.3854	0.6046	8.8E-04	0.0088	0.013	0.026	1.2E-05	1.1E-08	1.2E-04	1.1E-07	1.8E-04	1.6E-07	3.6E-04	3.2E-07	3.6E-05	3.2E-08	3.6E-04	3.2E-07	5.4E-04	4.7E-07	1.1E-03	9.5E-07
22	0.3492	0.5477	7.9E-04	0.0079	0.012	0.024	1.1E-05	9.5E-09	1.1E-04	9.5E-08	1.6E-04	1.4E-07	3.3E-04	2.9E-07	3.3E-05	2.9E-08	3.3E-04	2.9E-07	4.9E-04	4.3E-07	9.8E-04	8.6E-07
23	0.3163	0.4962	7.2E-04	0.0072	0.011	0.022	9.9E-06	8.6E-09	9.9E-05	8.6E-08	1.5E-04	1.3E-07	3.0E-04	2.6E-07	3.0E-05	2.6E-08	3.0E-04	2.6E-07	4.4E-04	3.9E-07	8.9E-04	7.8E-07
24	0.2866	0.4495	6.5E-04	0.0065	0.010	0.020	9.9E-06	7.8E-09	8.9E-05	7.8E-08	1.3E-04	1.2E-07	2.7E-04	2.3E-07	2.7E-05	2.3E-08	2.7E-04	2.3E-07	4.0E-04	3.5E-07	8.0E-04	7.0E-07
25	0.2596	0.4072	5.9E-04	0.0059	0.009	0.018	8.1E-06	7.1E-09	8.1E-05	7.1E-08	1.2E-04	1.1E-07	2.4E-04	2.1E-07	2.4E-05	2.1E-08	2.4E-04	2.1E-07	3.6E-04	3.2E-07	7.3E-04	6.4E-07
26	0.2352	0.3689	5.4E-04	0.0054	0.008	0.016	7.3E-06	6.4E-09	7.3E-05	6.4E-08	1.1E-04	9.6E-08	2.2E-04	1.9E-07	2.2E-05	1.9E-08	2.2E-04	1.9E-07	3.3E-04	2.9E-07	6.6E-04	5.8E-07
27	0.2131	0.3342	4.9E-04	0.0049	0.007	0.015	6.6E-06	5.8E-09	6.6E-05	5.8E-08	1.0E-04	8.7E-08	2.0E-04	1.7E-07	2.0E-05	1.7E-08	2.0E-04	1.7E-07	3.0E-04	2.6E-07	6.0E-04	5.2E-07
28	0.1930	0.3028	4.4E-04	0.0044	0.007	0.013	6.0E-06	5.3E-09	6.0E-05	5.3E-08	9.0E-05	7.9E-08	1.8E-04	1.6E-07	1.8E-05	1.6E-08	1.8E-04	1.6E-07	2.7E-04	2.4E-07	5.4E-04	4.7E-07
29	0.1749	0.2743	4.0E-04	0.0040	0.006	0.012	5.5E-06	4.8E-09	5.5E-05	4.8E-08	8.2E-05	7.2E-08	1.6E-04	1.4E-07	1.6E-05	1.4E-08	1.6E-04	1.4E-07	2.5E-04	2.1E-07	4.9E-04	4.3E-07
30	0.1584	0.2485	3.6E-04	0.0036	0.005	0.011	4.9E-06	4.3E-09	4.9E-05	4.3E-08	7.4E-05	6.5E-08	1.5E-04	1.3E-07	1.5E-05	1.3E-08	1.5E-04	1.3E-07	2.2E-04	1.9E-07	4.4E-04	3.9E-07

D334881
Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Tree Nut Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date	39262
Transfer Coefficient Group:	Tree Nut
Specific Crop(s) Considered:	Almonds, hazelnuts, macadamia, olives, walnuts, pistachios, pecans
Application Rate of Crop (lb ai/A):	5

DFR Data Summary

Data Source (enter 1 if data available, 0 if missing):	1
Source:	ARTF Olive Pruning Study (Airblast Application), MRID 451751-02
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	197 to 2302	Irrigation, scouting, thinning, weeding
Medium	N/A	N/A	N/A
High	2500	1121 to 4929	harvesting/poling, pruning, thinning
Very High	N/A	N/A	N/A

[Note: Mechanical shaking, rowing/sweeping, and vacuuming are a special concern and are not addressed with TCs.]

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)		MOEs	
	Not Adjusted	Adjusted For Rate	Low Exposure	High Exposure	Low Exposure	High Exposure
0	3.067	2.00	0.1145	0.573	747	149
1	2.779	1.82	0.1038	0.519	824	165
2	2.517	1.65	0.0940	0.470	910	182
3	2.280	1.49	0.0852	0.426	1005	201
4	2.066	1.35	0.0772	0.386	1109	222
5	1.872	1.22	0.0699	0.350	1224	245
6	1.696	1.11	0.0633	0.317	1351	270
7	1.536	1.00	0.0574	0.287	1491	298
8	1.392	0.91	0.0520	0.260	1646	329
9	1.261	0.82	0.0471	0.235	1817	363
10	1.142	0.75	0.0427	0.213	2006	401
11	1.035	0.68	0.0386	0.193	2214	443
12	0.937	0.61	0.0350	0.175	2444	489
13	0.849	0.56	0.0317	0.159	2697	539
14	0.769	0.50	0.0287	0.144	2977	595
15	0.697	0.46	0.0260	0.130	3286	657
16	0.632	0.41	0.0236	0.118	3628	726
17	0.572	0.37	0.0214	0.107	4004	801
18	0.518	0.34	0.0194	0.097	4420	884
19	0.470	0.31	0.0175	0.088	4879	976
20	0.425	0.28	0.0159	0.079	5385	1077
21	0.385	0.25	0.0144	0.072	5944	1189
22	0.349	0.23	0.0130	0.065	6561	1312
23	0.316	0.21	0.0118	0.0591	7242	1448
24	0.287	0.19	0.0107	0.0535	7994	1599
25	0.260	0.17	0.0097	0.0485	8824	1765
26	0.235	0.15	0.0088	0.0439	9740	1948
27	0.213	0.14	0.0080	0.0398	10751	2150
28	0.193	0.13	0.0072	0.0360	11867	2373
29	0.175	0.11	0.0065	0.0327	13099	2620
30	0.158	0.10	0.0059	0.0296	14459	2892
Int-Term (30 day average)	1.003	0.655	0.03745	0.18725	2285	457

D334881
Appendix C: Carbaryl Postapplication Cancer Risk Assessment For Tree Nut Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Tree Nut
Specific Crop(s) Considered:	Almonds, hazelnuts, macadamia, olives, walnuts, pistachios, pecans
Application Rate of Crop (lb ai/A):	5

DFR Data Summary

Data Source (enter 1 if data available in DFR database)	
Source:	ARTF Olive Pruning Study (Airblast Application), MRID 461751-02
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A)	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	197 to 2302	Irrigation, scouting, thinning, weeding
Medium	N/A	N/A	N/A
High	2500	1121 to 4929	harvesting/poling, pruning, thinning
Very High	N/A	N/A	N/A

[Note: Mechanical shaking, rowing/sweeping, and vacuuming are a special concern and are not addressed with TCs.]

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)		RISKS FOR PRIVATE GROWERS				RISKS FOR PROFESSIONAL FARMWORKERS			
					Low Exposure		High Exposure		Low Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	3.0670	2.0046	0.0145	0.0727	2.0E-04	1.7E-07	1.0E-03	8.7E-07	6.0E-04	5.2E-07	3.0E-03	2.6E-06
1	2.7786	1.8160	0.0132	0.0659	1.8E-04	1.6E-07	9.0E-04	7.9E-07	5.4E-04	4.7E-07	2.7E-03	2.4E-06
2	2.5172	1.6452	0.0119	0.0597	1.6E-04	1.4E-07	8.2E-04	7.2E-07	4.9E-04	4.3E-07	2.5E-03	2.1E-06
3	2.2805	1.4905	0.0108	0.0541	1.5E-04	1.3E-07	7.4E-04	6.5E-07	4.4E-04	3.9E-07	2.2E-03	1.9E-06
4	2.0660	1.3503	0.0098	0.0490	1.3E-04	1.2E-07	6.7E-04	5.9E-07	4.0E-04	3.5E-07	2.0E-03	1.8E-06
5	1.8717	1.2233	0.0089	0.0444	1.2E-04	1.1E-07	6.1E-04	5.3E-07	3.6E-04	3.2E-07	1.8E-03	1.6E-06
6	1.6957	1.1083	0.0080	0.0402	1.1E-04	9.6E-08	5.5E-04	4.8E-07	3.3E-04	2.9E-07	1.7E-03	1.4E-06
7	1.5362	1.0041	0.0073	0.0364	1.0E-04	8.7E-08	5.0E-04	4.4E-07	3.0E-04	2.6E-07	1.5E-03	1.3E-06
8	1.3917	0.9096	0.0066	0.0330	9.0E-05	7.9E-08	4.5E-04	4.0E-07	2.7E-04	2.4E-07	1.4E-03	1.2E-06
9	1.2608	0.8241	0.0060	0.0299	8.2E-05	7.2E-08	4.1E-04	3.6E-07	2.5E-04	2.2E-07	1.2E-03	1.1E-06
10	1.1422	0.7466	0.0054	0.0271	7.4E-05	6.5E-08	3.7E-04	3.2E-07	2.2E-04	1.9E-07	1.1E-03	9.7E-07
11	1.0348	0.6764	0.0049	0.0245	6.7E-05	5.9E-08	3.4E-04	2.9E-07	2.0E-04	1.8E-07	1.0E-03	8.8E-07
12	0.9375	0.6127	0.0044	0.0222	6.1E-05	5.3E-08	3.0E-04	2.7E-07	1.8E-04	1.6E-07	9.1E-04	8.0E-07
13	0.8493	0.5551	0.0040	0.0201	5.5E-05	4.8E-08	2.8E-04	2.4E-07	1.7E-04	1.4E-07	8.3E-04	7.2E-07
14	0.7694	0.5029	0.0036	0.0182	5.0E-05	4.4E-08	2.5E-04	2.2E-07	1.5E-04	1.3E-07	7.5E-04	6.6E-07
15	0.6971	0.4556	0.0033	0.0165	4.5E-05	4.0E-08	2.3E-04	2.0E-07	1.4E-04	1.2E-07	6.8E-04	5.9E-07
16	0.6315	0.4128	0.0030	0.0150	4.1E-05	3.6E-08	2.1E-04	1.8E-07	1.2E-04	1.1E-07	6.2E-04	5.4E-07
17	0.5721	0.3739	0.0027	0.0136	3.7E-05	3.3E-08	1.9E-04	1.6E-07	1.1E-04	9.8E-08	5.6E-04	4.9E-07
18	0.5183	0.3388	0.0025	0.0123	3.4E-05	2.9E-08	1.7E-04	1.5E-07	1.0E-04	8.8E-08	5.1E-04	4.4E-07
19	0.4696	0.3069	0.0022	0.0111	3.1E-05	2.7E-08	1.5E-04	1.3E-07	9.2E-05	8.0E-08	4.6E-04	4.0E-07
20	0.4254	0.2780	0.0020	0.0101	2.8E-05	2.4E-08	1.4E-04	1.2E-07	8.3E-05	7.3E-08	4.1E-04	3.6E-07
21	0.3854	0.2519	0.0018	0.0091	2.5E-05	2.2E-08	1.3E-04	1.1E-07	7.5E-05	6.6E-08	3.8E-04	3.3E-07
22	0.3492	0.2282	0.0017	0.0083	2.3E-05	2.0E-08	1.1E-04	9.9E-08	6.8E-05	6.0E-08	3.4E-04	3.0E-07
23	0.3163	0.2067	0.0015	0.0075	2.1E-05	1.8E-08	1.0E-04	9.0E-08	6.2E-05	5.4E-08	3.1E-04	2.7E-07
24	0.2866	0.1873	0.0014	0.0068	1.9E-05	1.6E-08	9.3E-05	8.1E-08	5.6E-05	4.9E-08	2.8E-04	2.4E-07
25	0.2596	0.1697	0.0012	0.0062	1.7E-05	1.5E-08	8.4E-05	7.4E-08	5.1E-05	4.4E-08	2.5E-04	2.2E-07
26	0.2352	0.1537	0.0011	0.0056	1.5E-05	1.3E-08	7.6E-05	6.7E-08	4.6E-05	4.0E-08	2.3E-04	2.0E-07
27	0.2131	0.1393	0.0010	0.0051	1.4E-05	1.2E-08	6.9E-05	6.1E-08	4.2E-05	3.6E-08	2.1E-04	1.8E-07
28	0.1930	0.1262	0.0009	0.0046	1.3E-05	1.1E-08	6.3E-05	5.5E-08	3.8E-05	3.3E-08	1.9E-04	1.6E-07
29	0.1749	0.1143	0.0008	0.0041	1.1E-05	9.9E-09	5.7E-05	5.0E-08	3.4E-05	3.0E-08	1.7E-04	1.5E-07
30	0.1584	0.1036	0.0008	0.0038	1.0E-05	9.0E-09	5.1E-05	4.5E-08	3.1E-05	2.7E-08	1.5E-04	1.4E-07

D334881
Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Tree Nut Crop Group (Olive)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Tree Nut
Specific Crop(s) Considered:	Almonds, Hazelnuts, Macadamia, olives, walnuts, pistachios, pecans
Application Rate of Crop (lb ai/A):	7.5

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Olive Pruning Study (Airblast Application), MRID 451751-02
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	197 to 2302	Irrigation, scouting, thinning, weeding
Medium	N/A	N/A	N/A
High	2500	1121 to 4929	harvesting/poling, pruning, thinning
Very High	N/A	N/A	N/A

[Note: Mechanical shaking, rowing/sweeping, and vacuuming are a special concern and are not addressed with TCs.]

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)		MOEs	
	Not Adjusted	Adjusted For Rate	Low Exposure	High Exposure	Low Exposure	High Exposure
0	3.067	3.01	0.1718	0.859	498	100
1	2.779	2.72	0.1557	0.778	550	110
2	2.517	2.47	0.1410	0.705	607	121
3	2.280	2.24	0.1278	0.639	670	134
4	2.066	2.03	0.1157	0.579	739	148
5	1.872	1.84	0.1049	0.524	816	163
6	1.696	1.66	0.0950	0.475	901	180
7	1.536	1.51	0.0861	0.430	994	199
8	1.392	1.36	0.0780	0.390	1097	219
9	1.261	1.24	0.0706	0.353	1211	242
10	1.142	1.12	0.0640	0.320	1337	267
11	1.035	1.01	0.0580	0.290	1476	295
12	0.937	0.92	0.0525	0.263	1629	326
13	0.849	0.83	0.0476	0.238	1798	360
14	0.769	0.75	0.0431	0.216	1985	397
15	0.697	0.68	0.0391	0.195	2191	438
16	0.632	0.62	0.0354	0.177	2418	484
17	0.572	0.56	0.0321	0.160	2669	534
18	0.518	0.51	0.0290	0.145	2947	589
19	0.470	0.46	0.0263	0.132	3252	650
20	0.425	0.42	0.0238	0.119	3590	718
21	0.385	0.38	0.0216	0.108	3963	793
22	0.349	0.34	0.0196	0.098	4374	875
23	0.316	0.31	0.0177	0.0886	4828	966
24	0.287	0.28	0.0161	0.0803	5329	1066
25	0.260	0.25	0.0145	0.0727	5883	1177
26	0.235	0.23	0.0132	0.0659	6493	1299

27	0.213	0.21	0.0119	0.0597	7167	1433
28	0.193	0.19	0.0108	0.0541	7912	1582
29	0.175	0.17	0.0098	0.0490	8733	1747
30	0.158	0.16	0.0089	0.0444	9639	1928
Int-Term (30 day average)	1.003	0.983	0.05618	0.28088	1523	305

D334881
Appendix C: Carbaryl Postapplication Cancer Risk Assessment For Tree Nut Crop Group (Olive)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	49262
Transfer Coefficient Group:	Tree Nut
Specific Crop(s) Considered	Almonds, hazelnuts, macadamia, olives, walnuts, pistachios, pecans
Application Rate of Crop (lb a.i./A):	7.5

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Olive Pruning Study (Airblast Application), MRID 451751-02
Slope of Semilog Regression:	-0.09877
[Initial] (ug/cm2):	3.067
Study Application Rate (lb ai/A):	7.65
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	197 to 2302	Irrigation, scouting, thinning, weeding
Medium	N/A	N/A	N/A
High	2500	1121 to 4929	harvesting/poling, pruning, thinning
Very High	N/A	N/A	N/A

[Note: Mechanical shaking, rowing/sweeping, and vacuuming are a special concern and are not addressed with TCs.]

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)		RISKS FOR PRIVATE GROWERS				RISKS FOR PROFESSIONAL FARMWORKERS			
					Low Exposure		High Exposure		Low Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	3.0670	3.0069	0.0218	0.1091	3.0E-04	2.6E-07	1.5E-03	1.3E-06	9.0E-04	7.8E-07	4.5E-03	3.9E-06
1	2.7786	2.7241	0.0198	0.0988	2.7E-04	2.4E-07	1.4E-03	1.2E-06	8.1E-04	7.1E-07	4.1E-03	3.6E-06
2	2.5172	2.4679	0.0179	0.0895	2.5E-04	2.1E-07	1.2E-03	1.1E-06	7.4E-04	6.4E-07	3.7E-03	3.2E-06
3	2.2805	2.2358	0.0162	0.0811	2.2E-04	1.9E-07	1.1E-03	9.7E-07	6.7E-04	5.8E-07	3.3E-03	2.9E-06
4	2.0660	2.0255	0.0147	0.0735	2.0E-04	1.8E-07	1.0E-03	8.8E-07	6.0E-04	5.3E-07	3.0E-03	2.6E-06
5	1.8717	1.8350	0.0133	0.0666	1.8E-04	1.6E-07	9.1E-04	8.0E-07	5.5E-04	4.8E-07	2.7E-03	2.4E-06
6	1.6957	1.6624	0.0121	0.0603	1.7E-04	1.4E-07	8.3E-04	7.2E-07	5.0E-04	4.3E-07	2.5E-03	2.2E-06
7	1.5362	1.5061	0.0109	0.0546	1.5E-04	1.3E-07	7.5E-04	6.6E-07	4.5E-04	3.9E-07	2.2E-03	2.0E-06
8	1.3917	1.3644	0.0099	0.0495	1.4E-04	1.2E-07	6.8E-04	5.9E-07	4.1E-04	3.6E-07	2.0E-03	1.8E-06
9	1.2608	1.2361	0.0090	0.0449	1.2E-04	1.1E-07	6.1E-04	5.4E-07	3.7E-04	3.2E-07	1.8E-03	1.6E-06
10	1.1422	1.1199	0.0081	0.0406	1.1E-04	9.7E-08	5.6E-04	4.9E-07	3.3E-04	2.9E-07	1.7E-03	1.5E-06
11	1.0348	1.0145	0.0074	0.0368	1.0E-04	8.8E-08	5.0E-04	4.4E-07	3.0E-04	2.6E-07	1.5E-03	1.3E-06
12	0.9375	0.9191	0.0067	0.0334	9.1E-05	8.0E-08	4.6E-04	4.0E-07	2.7E-04	2.4E-07	1.4E-03	1.2E-06
13	0.8493	0.8327	0.0060	0.0302	8.3E-05	7.2E-08	4.1E-04	3.6E-07	2.5E-04	2.2E-07	1.2E-03	1.1E-06
14	0.7694	0.7544	0.0055	0.0274	7.5E-05	6.6E-08	3.7E-04	3.3E-07	2.2E-04	2.0E-07	1.1E-03	9.8E-07
15	0.6971	0.6834	0.0050	0.0248	6.8E-05	5.9E-08	3.4E-04	3.0E-07	2.0E-04	1.8E-07	1.0E-03	8.9E-07
16	0.6315	0.6191	0.0045	0.0225	6.2E-05	5.4E-08	3.1E-04	2.7E-07	1.8E-04	1.6E-07	9.2E-04	8.1E-07
17	0.5721	0.5609	0.0041	0.0204	5.6E-05	4.9E-08	2.8E-04	2.4E-07	1.7E-04	1.5E-07	8.4E-04	7.3E-07
18	0.5183	0.5082	0.0037	0.0184	5.1E-05	4.4E-08	2.5E-04	2.2E-07	1.5E-04	1.3E-07	7.6E-04	6.6E-07
19	0.4696	0.4604	0.0033	0.0167	4.6E-05	4.0E-08	2.3E-04	2.0E-07	1.4E-04	1.2E-07	6.9E-04	6.0E-07
20	0.4254	0.4171	0.0030	0.0151	4.1E-05	3.6E-08	2.1E-04	1.8E-07	1.2E-04	1.1E-07	6.2E-04	5.4E-07
21	0.3854	0.3778	0.0027	0.0137	3.8E-05	3.3E-08	1.9E-04	1.6E-07	1.1E-04	9.9E-08	5.6E-04	4.9E-07
22	0.3492	0.3423	0.0025	0.0124	3.4E-05	3.0E-08	1.7E-04	1.5E-07	1.0E-04	8.9E-08	5.1E-04	4.5E-07
23	0.3163	0.3101	0.0023	0.0113	3.1E-05	2.7E-08	1.5E-04	1.3E-07	9.2E-05	8.1E-08	4.6E-04	4.0E-07
24	0.2866	0.2809	0.0020	0.0102	2.8E-05	2.4E-08	1.4E-04	1.2E-07	8.4E-05	7.3E-08	4.2E-04	3.7E-07
25	0.2596	0.2545	0.0018	0.0092	2.5E-05	2.2E-08	1.3E-04	1.1E-07	7.6E-05	6.6E-08	3.8E-04	3.3E-07
26	0.2352	0.2306	0.0017	0.0084	2.3E-05	2.0E-08	1.1E-04	1.0E-07	6.9E-05	6.0E-08	3.4E-04	3.0E-07

27	0.2131	0.2089	0.0015	0.0076	2.1E-05	1.8E-08	1.0E-04	9.1E-08	6.2E-05	5.5E-08	3.1E-04	2.7E-07
28	0.1930	0.1893	0.0014	0.0069	1.9E-05	1.6E-08	9.4E-05	8.2E-08	5.6E-05	4.9E-08	2.8E-04	2.5E-07
29	0.1749	0.1715	0.0012	0.0062	1.7E-05	1.5E-08	8.5E-05	7.5E-08	5.1E-05	4.5E-08	2.6E-04	2.2E-07
30	0.1584	0.1553	0.0011	0.0056	1.5E-05	1.4E-08	7.7E-05	6.8E-08	4.6E-05	4.1E-08	2.3E-04	2.0E-07

D334881
Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Turf

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Turf
Specific Crop(s) Considered:	Golf course and sodfarm turf
Application Rate of Crop (lb ai/A):	8.17

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	MRID 451143-01 (Georgia Data)
Slope of Semilog Regression:	-0.16818
[Initial] (ug/cm2):	1.122
Study Application Rate (lb ai/A):	8.17
Limit of Quantification (ug/cm2):	0.00035

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	N/A	Mowing
Medium	3400	N/A	Golf course maintenance (mowing, aerating, scouting, fertilizing, etc.)
High	6800	N/A	Sod Farm Harvesting
Very High	N/A	N/A	N/A

DAT	TTR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOEs		
	Not Adjusted	Adjusted For Rate	Low Exposure	Med Exposure	High Exposure	Low Exposure	Med Exposure	High Exposure
0	1.1220	1.1220	0.0641	0.4360	0.87	1334	196	98.1
1	0.9483	0.9483	0.0542	0.3685	0.74	1579	232	116.1
2	0.8015	0.8015	0.0458	0.3114	0.623	1868	275	137
3	0.6774	0.6774	0.0387	0.2632	0.526	2210	325	163
4	0.5726	0.5726	0.0327	0.2225	0.445	2615	385	192
5	0.4839	0.4839	0.0277	0.1880	0.376	3094	455	227
6	0.4090	0.4090	0.0234	0.1589	0.318	3661	538	269
7	0.3457	0.3457	0.01976	0.1343	0.269	4331	637	318
8	0.2922	0.2922	0.01670	0.1135	0.227	5124	754	377
9	0.2470	0.2470	0.01411	0.0960	0.192	6063	892	446
10	0.2087	0.2087	0.01193	0.0811	0.162	7173	1055	527
11	0.1764	0.1764	0.01008	0.0686	0.137	8487	1248	624
12	0.1491	0.1491	0.00852	0.0579	0.1159	10041	1477	738
13	0.1260	0.1260	0.00720	0.0490	0.0979	11880	1747	874
14	0.1065	0.1065	0.00609	0.0414	0.0828	14056	2067	1034
15	0.0900	0.0900	0.00514	0.0350	0.0700	16631	2446	1223
16	0.0761	0.0761	0.00435	0.0296	0.0591	19677	2894	1447
17	0.0643	0.0643	0.00368	0.0250	0.0500	23280	3424	1712
18	0.0544	0.0544	0.00311	0.0211	0.0422	27544	4051	2025
19	0.0459	0.0459	0.00263	0.0179	0.0357	32589	4792	2396
20	0.0388	0.0388	0.00222	0.0151	0.0302	38558	5670	2835
21	0.0328	0.0328	0.00188	0.0128	0.0255	45619	6709	3354
22	0.0277	0.0277	0.00159	0.0108	0.0216	53974	7937	3969
23	0.0234	0.0234	0.00134	0.0091	0.0182	63860	9391	4696
24	0.0198	0.0198	0.00113	0.0077	0.0154	75556	11111	5556
25	0.0167	0.0167	0.00096	0.0065	0.0130	89394	13146	6573
26	0.0142	0.0142	0.00081	0.0055	0.0110	105766	15554	7777
27	0.0120	0.0120	0.00068	0.0046	0.0093	125137	18403	9201
28	0.0101	0.0101	0.00058	0.0039	0.0079	148056	21773	10886
29	0.0085	0.0085	0.00049	0.0033	0.0066	175172	25761	12880
30	0.0072	0.0072	0.00041	0.0028	0.0056	207255	30479	15239
int-Term (30 day average)	0.233	0.233	0.01329	0.0904	0.18072	6439	947	473

D334881
Appendix C. Carbaryl Postapplication Cancer Risk Assessment For Turf

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Turf
Specific Crop(s) Considered:	Golf course and sodfarm turf
Application Rate of Crop (lb ai/A)	8.17

DFR Data Summary

Data Source (enter 1 if data available, 0 if not): 1

Source:	MRID 451143-01 (California Data)
Slope of Semilog Regression:	-0.54313
[Initial] (ug/cm2):	0.927
Study Application Rate (lb ai/A):	8.17
Limit of Quantification (ug/cm2):	0.00035

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	N/A	Mowing
Medium	3400	N/A	Golf course maintenance (mowing, aerating, scouting, fertilizing, etc.)
High	6800	N/A	Sod Farm Harvesting
Very High	N/A	N/A	N/A

DAT	TTR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL WORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	0.9270000	0.9270000	0.00673	0.04575	0.09149	9.2E-05	8.1E-08	6.3E-04	5.5E-07	1.3E-03	1.1E-06	2.8E-04	2.4E-07	1.9E-03	1.6E-06	3.8E-03	3.3E-06
1	0.5385194	0.5385194	0.00391	0.02658	0.05315	5.4E-05	4.7E-08	3.6E-04	3.2E-07	7.3E-04	6.4E-07	1.6E-04	1.4E-07	1.1E-03	9.6E-07	2.2E-03	1.9E-06
2	0.3128405	0.3128405	0.00227	0.01544	0.03088	3.1E-05	2.7E-08	2.1E-04	1.9E-07	4.2E-04	3.7E-07	9.3E-05	8.2E-08	6.3E-04	5.6E-07	1.3E-03	1.1E-06
3	0.1817375	0.1817375	0.00132	0.00897	0.01794	1.8E-05	1.6E-08	1.2E-04	1.1E-07	2.5E-04	2.1E-07	5.4E-05	4.7E-08	3.7E-04	3.2E-07	7.4E-04	6.4E-07
4	0.1055763	0.1055763	0.00077	0.00521	0.01042	1.0E-05	9.2E-09	7.1E-05	6.2E-08	1.4E-04	1.2E-07	3.1E-05	2.8E-08	2.1E-04	1.9E-07	4.3E-04	3.7E-07
5	0.0613321	0.0613321	0.00045	0.00303	0.00605	6.1E-06	5.3E-09	4.1E-05	3.6E-08	8.3E-05	7.3E-08	1.8E-05	1.6E-08	1.2E-04	1.1E-07	2.5E-04	2.2E-07
6	0.0356295	0.0356295	0.00026	0.00176	0.00352	3.5E-06	3.1E-09	2.4E-05	2.1E-08	4.8E-05	4.2E-08	1.1E-05	9.3E-09	7.2E-05	6.3E-08	1.4E-04	1.3E-07
7	0.0206981	0.0206981	0.00015	0.00102	0.00204	2.1E-06	1.8E-09	1.4E-05	1.2E-08	2.8E-05	2.4E-08	6.2E-06	5.4E-09	4.2E-05	3.7E-08	8.4E-05	7.3E-08
8	0.0120241	0.0120241	0.00009	0.00059	0.00119	1.2E-06	1.0E-09	8.1E-06	7.1E-09	1.6E-05	1.4E-08	3.6E-06	3.1E-09	2.4E-05	2.1E-08	4.9E-05	4.3E-08
9	0.0069851	0.0069851	0.00005	0.00034	0.00069	6.9E-07	6.1E-10	4.7E-06	4.1E-09	9.4E-06	8.3E-09	2.1E-06	1.8E-09	1.4E-05	1.2E-08	2.8E-05	2.5E-08
10	0.0040579	0.0040579	0.00003	0.00020	0.00040	4.0E-07	3.5E-10	2.7E-06	2.4E-09	5.5E-06	4.8E-09	1.2E-06	1.1E-09	8.2E-06	7.2E-09	1.6E-05	1.4E-08

D334881
Appendix C. Carbary: Postapplication Noncancer Risk Assessment For Root Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Root Vegetables
Specific Crop(s) Considered:	table beets, carrots, dry onions, green onions, potatoes, sweet potatoes, and turnips
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if default):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application) MRID 45191701
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A)	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	300	140 to 290	Irrigation, scouting, thinning, weeding immature plants
Medium	1500	486 to 2760	Irrigation and scouting mature plants
High	2500	486 to 2760	hand harvesting
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	2.4600	2.3768	0.08149	0.40745	0.67909	1050	210	126
1	2.0339	1.9651	0.06737	0.33687	0.56145	1270	254	152
2	1.6815	1.6247	0.05570	0.27851	0.46419	1536	307	184
3	1.3902	1.3432	0.04605	0.23027	0.38378	1858	372	223
4	1.1494	1.1105	0.03808	0.19038	0.31730	2247	449	270
5	0.9503	0.9182	0.03148	0.15740	0.26233	2718	544	326
6	0.7857	0.7591	0.02603	0.13013	0.21689	3287	657	394
7	0.6496	0.6276	0.02152	0.10759	0.17931	3976	795	477
8	0.5370	0.5189	0.01779	0.08895	0.14825	4809	962	577
9	0.4440	0.4290	0.01471	0.07354	0.12257	5817	1163	698
10	0.3671	0.3547	0.01216	0.06080	0.10134	7036	1407	844
11	0.3035	0.2932	0.01005	0.05027	0.08378	8510	1702	1021
12	0.2509	0.2424	0.00831	0.04156	0.06927	10293	2059	1235
13	0.2075	0.2004	0.00687	0.03436	0.05727	12450	2490	1494
14	0.1715	0.1657	0.00568	0.02841	0.04735	15059	3012	1807
15	0.1418	0.1370	0.00470	0.02349	0.03915	18214	3643	2186
16	0.1172	0.1133	0.00388	0.01942	0.03236	22030	4406	2644
17	0.0969	0.0937	0.00321	0.01605	0.02676	26646	5329	3198
18	0.0801	0.0774	0.00265	0.01327	0.02212	32229	6446	3867
19	0.0663	0.0640	0.00219	0.01097	0.01829	38982	7796	4678
20	0.0548	0.0529	0.00181	0.00907	0.01512	47150	9430	5658
21	0.0453	0.0438	0.00150	0.00750	0.01250	57029	11406	6843
22	0.0374	0.0362	0.00124	0.00620	0.01034	68978	13796	8277
23	0.0310	0.0299	0.00103	0.00513	0.00855	83431	16686	10012
24	0.0256	0.0247	0.00085	0.00424	0.00707	100912	20182	12109
25	0.0212	0.0204	0.00070	0.00350	0.00584	122056	24411	14647
26	0.0175	0.0169	0.00058	0.00290	0.00483	147630	29526	17716
27	0.0145	0.0140	0.00048	0.00240	0.00399	178563	35713	21428
28	0.0120	0.0116	0.00040	0.00198	0.00330	215976	43195	25917
29	0.0099	0.0096	0.00033	0.00164	0.00273	261229	52246	31348
30	0.0082	0.0079	0.00027	0.00135	0.00226	315964	63193	37916
Int-Term (30 day average)	0.457	0.441	0.01513	0.07567	0.12611	5654	1131	678

D334881
Appendix C. Carbaryl Postapplication Cancer Risk Assessment For Root Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical	Carbaryl
Reason:	TC Policy 3.1. Updated DFR, and Updated Hazard Data
Date	39262
Transfer Coefficient Group:	Root Vegetables
Specific Crop(s) Considered	table beets, carrots, dry onions, green onions, potatoes, sweet potatoes, and turnips
Application Rate of Crop (lb ai/A):	?

DFR Data Summary

Data Source (enter 1 if data available, 0 if not):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application), MRID 45191[illegible]-01
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	300	140 to 290	Irrigation, scouting, thinning, weeding immature plants
Medium	1500	486 to 2760	Irrigation and scouting mature plants
High	2500	486 to 2760	hand harvesting
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.4600	2.3768	0.01035	0.05175	0.08624	1.4E-04	1.2E-07	7.1E-04	6.2E-07	1.2E-03	1.0E-06	4.3E-04	3.7E-07	2.1E-03	1.9E-06	3.5E-03	3.1E-06
1	2.0339	1.9651	0.00856	0.04278	0.07130	1.2E-04	1.0E-07	5.9E-04	5.1E-07	9.8E-04	8.5E-07	3.5E-04	3.1E-07	1.8E-03	1.5E-06	2.9E-03	2.6E-06
2	1.6815	1.6247	0.00707	0.03537	0.05895	9.7E-05	8.5E-08	4.8E-04	4.2E-07	8.1E-04	7.1E-07	2.9E-04	2.5E-07	1.5E-03	1.3E-06	2.4E-03	2.1E-06
3	1.3902	1.3432	0.00585	0.02924	0.04874	8.0E-05	7.0E-08	4.0E-04	3.5E-07	6.7E-04	5.8E-07	2.4E-04	2.1E-07	1.2E-03	1.1E-06	2.0E-03	1.8E-06
4	1.1494	1.1105	0.00484	0.02418	0.04030	6.6E-05	5.8E-08	3.3E-04	2.9E-07	5.5E-04	4.8E-07	2.0E-04	1.7E-07	9.9E-04	8.7E-07	1.7E-03	1.4E-06
5	0.9503	0.9182	0.00400	0.01999	0.03332	5.5E-05	4.8E-08	2.7E-04	2.4E-07	4.6E-04	4.0E-07	1.6E-04	1.4E-07	8.2E-04	7.2E-07	1.4E-03	1.2E-06
6	0.7857	0.7591	0.00331	0.01653	0.02754	4.5E-05	4.0E-08	2.3E-04	2.0E-07	3.8E-04	3.3E-07	1.4E-04	1.2E-07	6.8E-04	5.9E-07	1.1E-03	9.9E-07
7	0.6496	0.6276	0.00273	0.01366	0.02277	3.7E-05	3.3E-08	1.9E-04	1.6E-07	3.1E-04	2.7E-07	1.1E-04	9.8E-08	5.6E-04	4.9E-07	9.4E-04	8.2E-07
8	0.5370	0.5189	0.00226	0.01130	0.01883	3.1E-05	2.7E-08	1.5E-04	1.4E-07	2.6E-04	2.3E-07	9.3E-05	8.1E-08	4.6E-04	4.1E-07	7.7E-04	6.8E-07
9	0.4440	0.4290	0.00187	0.00934	0.01557	2.6E-05	2.2E-08	1.3E-04	1.1E-07	2.1E-04	1.9E-07	7.7E-05	6.7E-08	3.8E-04	3.4E-07	6.4E-04	5.6E-07
10	0.3671	0.3547	0.00154	0.00772	0.01287	2.1E-05	1.9E-08	1.1E-04	9.3E-08	1.8E-04	1.5E-07	6.3E-05	5.6E-08	3.2E-04	2.8E-07	5.3E-04	4.6E-07
11	0.3035	0.2932	0.00128	0.00638	0.01064	1.7E-05	1.5E-08	8.7E-05	7.7E-08	1.5E-04	1.3E-07	5.2E-05	4.6E-08	2.6E-04	2.3E-07	4.4E-04	3.8E-07
12	0.2509	0.2424	0.00106	0.00528	0.00880	1.4E-05	1.3E-08	7.2E-05	6.3E-08	1.2E-04	1.1E-07	4.3E-05	3.8E-08	2.2E-04	1.9E-07	3.6E-04	3.2E-07
13	0.2075	0.2004	0.00087	0.00436	0.00727	1.2E-05	1.0E-08	6.0E-05	5.2E-08	1.0E-04	8.7E-08	3.6E-05	3.1E-08	1.8E-04	1.6E-07	3.0E-04	2.6E-07
14	0.1715	0.1657	0.00072	0.00361	0.00601	9.9E-06	8.6E-09	4.9E-05	4.3E-08	8.2E-05	7.2E-08	3.0E-05	2.6E-08	1.5E-04	1.3E-07	2.5E-04	2.2E-07
15	0.1418	0.1370	0.00060	0.00298	0.00497	8.2E-06	7.2E-09	4.1E-05	3.6E-08	6.8E-05	6.0E-08	2.5E-05	2.1E-08	1.2E-04	1.1E-07	2.0E-04	1.8E-07
16	0.1172	0.1133	0.00049	0.00247	0.00411	6.8E-06	5.9E-09	3.4E-05	3.0E-08	5.6E-05	4.9E-08	2.0E-05	1.8E-08	1.0E-04	8.9E-08	1.7E-04	1.5E-07
17	0.0969	0.0937	0.00041	0.00204	0.00340	5.6E-06	4.9E-09	2.8E-05	2.4E-08	4.7E-05	4.1E-08	1.7E-05	1.5E-08	8.4E-05	7.3E-08	1.4E-04	1.2E-07
18	0.0801	0.0774	0.00034	0.00169	0.00281	4.6E-06	4.0E-09	2.3E-05	2.0E-08	3.8E-05	3.4E-08	1.4E-05	1.2E-08	6.9E-05	6.1E-08	1.2E-04	1.0E-07
19	0.0663	0.0640	0.00028	0.00139	0.00232	3.8E-06	3.3E-09	1.9E-05	1.7E-08	3.2E-05	2.8E-08	1.1E-05	1.0E-08	5.7E-05	5.0E-08	9.5E-05	8.4E-08
20	0.0548	0.0529	0.00023	0.00115	0.00192	3.2E-06	2.8E-09	1.6E-05	1.4E-08	2.6E-05	2.3E-08	9.5E-06	8.3E-09	4.7E-05	4.1E-08	7.9E-05	6.9E-08
21	0.0453	0.0438	0.00019	0.00095	0.00159	2.6E-06	2.3E-09	1.3E-05	1.1E-08	2.2E-05	1.9E-08	7.8E-06	6.9E-09	3.9E-05	3.4E-08	6.5E-05	5.7E-08
22	0.0374	0.0362	0.00016	0.00079	0.00131	2.2E-06	1.9E-09	1.1E-05	9.4E-09	1.8E-05	1.6E-08	6.5E-06	5.7E-09	3.2E-05	2.8E-08	5.4E-05	4.7E-08
23	0.0310	0.0299	0.00013	0.00065	0.00109	1.8E-06	1.6E-09	8.9E-06	7.8E-09	1.5E-05	1.3E-08	5.4E-06	4.7E-09	2.7E-05	2.3E-08	4.5E-05	3.9E-08
24	0.0256	0.0247	0.00011	0.00054	0.00090	1.5E-06	1.3E-09	7.4E-06	6.5E-09	1.2E-05	1.1E-08	4.4E-06	3.9E-09	2.2E-05	1.9E-08	3.7E-05	3.2E-08
25	0.0212	0.0204	0.00009	0.00045	0.00074	1.2E-06	1.1E-09	6.1E-06	5.3E-09	1.0E-05	8.9E-09	3.7E-06	3.2E-09	1.8E-05	1.6E-08	3.0E-05	2.7E-08
26	0.0175	0.0169	0.00007	0.00037	0.00061	1.0E-06	8.8E-10	5.0E-06	4.4E-09	8.4E-06	7.4E-09	3.0E-06	2.6E-09	1.5E-05	1.3E-08	2.5E-05	2.2E-08
27	0.0145	0.0140	0.00006	0.00030	0.00051	8.3E-07	7.3E-10	4.2E-06	3.6E-09	6.9E-06	6.1E-09	2.5E-06	2.2E-09	1.3E-05	1.1E-08	2.1E-05	1.8E-08
28	0.0120	0.0116	0.00005	0.00025	0.00042	6.9E-07	6.0E-10	3.4E-06	3.0E-09	5.7E-06	5.0E-09	2.1E-06	1.8E-09	1.0E-05	9.0E-09	1.7E-05	1.5E-08
29	0.0099	0.0096	0.00004	0.00021	0.00035	5.7E-07	5.0E-10	2.8E-06	2.5E-09	4.7E-06	4.2E-09	1.7E-06	1.5E-09	8.5E-06	7.5E-09	1.4E-05	1.2E-08
30	0.0082	0.0079	0.00003	0.00017	0.00029	4.7E-07	4.1E-10	2.4E-06	2.1E-09	3.9E-06	3.4E-09	1.4E-06	1.2E-09	7.1E-06	6.2E-09	1.2E-05	1.0E-08

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Appendix C. Carbaryl Postapplication Noncancer Risk Assessment For Cucurbit Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Cucurbit Vegetables
Specific Crop(s) Considered:	Cantelope, cucumbers, gourds, pumpkins, squash, watermelon, zucchini
Application Rate of Crop (lb ai/A):	1

DFR Data Summary

Data Source (enter 1 if data available, 0 if no data):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application), MRID 45191701
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	486 to 2760	Irrigation, scouting, thinning, weeding immature plants
Medium	1500	486 to 2760	Irrigation, scouting, weeding mature plants
High	2500	486 to 2760	hand harvesting, pulling, leaf thinning, thinning, turning
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	2.4600	1.1884	0.06791	0.20373	0.33954	1260	420	252
1	2.0339	0.9825	0.05614	0.16843	0.28072	1524	508	305
2	1.6815	0.8123	0.04642	0.13926	0.23209	1843	614	369
3	1.3902	0.6716	0.03838	0.11513	0.19189	2229	743	446
4	1.1494	0.5553	0.03173	0.09519	0.15865	2697	899	539
5	0.9503	0.4591	0.02623	0.07870	0.13116	3262	1087	652
6	0.7857	0.3796	0.02169	0.06507	0.10844	3945	1315	789
7	0.6496	0.3138	0.01793	0.05379	0.08966	4772	1591	954
8	0.5370	0.2594	0.01483	0.04448	0.07413	5771	1924	1154
9	0.4440	0.2145	0.01226	0.03677	0.06128	6981	2327	1396
10	0.3671	0.1773	0.01013	0.03040	0.05067	8443	2814	1689
11	0.3035	0.1466	0.00838	0.02513	0.04189	10212	3404	2042
12	0.2509	0.1212	0.00693	0.02078	0.03463	12352	4117	2470
13	0.2075	0.1002	0.00573	0.01718	0.02863	14940	4980	2988
14	0.1715	0.0829	0.00473	0.01420	0.02367	18070	6023	3614
15	0.1418	0.0685	0.00391	0.01174	0.01957	21857	7286	4371
16	0.1172	0.0566	0.00324	0.00971	0.01618	26436	8812	5287
17	0.0969	0.0468	0.00268	0.00803	0.01338	31975	10658	6395
18	0.0801	0.0387	0.00221	0.00664	0.01106	38675	12892	7735
19	0.0663	0.0320	0.00183	0.00549	0.00915	46778	15593	9356
20	0.0548	0.0265	0.00151	0.00454	0.00756	56580	18860	11316
21	0.0453	0.0219	0.00125	0.00375	0.00625	68435	22812	13687
22	0.0374	0.0181	0.00103	0.00310	0.00517	82774	27591	16555
23	0.0310	0.0150	0.00085	0.00256	0.00427	100117	33372	20023
24	0.0256	0.0124	0.00071	0.00212	0.00353	121094	40365	24219
25	0.0212	0.0102	0.00058	0.00175	0.00292	146467	48822	29293
26	0.0175	0.0085	0.00048	0.00145	0.00241	177156	59052	35431
27	0.0145	0.0070	0.00040	0.00120	0.00200	214275	71425	42855
28	0.0120	0.0058	0.00033	0.00099	0.00165	259172	86391	51834
29	0.0099	0.0048	0.00027	0.00082	0.00136	313475	104492	62695
30	0.0082	0.0039	0.00023	0.00068	0.00113	379157	126386	75831
Int-Term (30 day average)	0.457	0.221	0.01261	0.03783	0.06305	6785	2262	1357

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Appendix C: Carbaryl Postapplication Cancer Risk Assessment For Cucurbit Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Cucurbit Vegetables
Specific Crop(s) Considered:	Cantelope, cucumbers, gourds, pumpkins, squash, watermelon, zucchini
Application Rate of Crop (lb ai/A)	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if not):	1
Source:	ARTI Cabbage Weeding Study (Cucurbitoid Application, MRID 45191701)
Slope of Semilog Regression	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	486 to 2760	Irrigation, scouting, thinning, weeding immature plants
Medium	1500	486 to 2760	Irrigation, scouting, weeding mature plants
High	2500	486 to 2760	hand harvesting, pulling, leaf thinning, thinning, turning
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.4600	2.3768	0.01725	0.05175	0.08624	2.4E-04	2.1E-07	7.1E-04	6.2E-07	1.2E-03	1.0E-06	7.1E-04	6.2E-07	2.1E-03	1.9E-06	3.5E-03	3.1E-06
1	2.0339	1.9651	0.01426	0.04278	0.07130	2.0E-04	1.7E-07	5.9E-04	5.1E-07	9.8E-04	8.5E-07	5.9E-04	5.1E-07	1.8E-03	1.5E-06	2.9E-03	2.6E-06
2	1.6815	1.6247	0.01179	0.03537	0.05895	1.6E-04	1.4E-07	4.8E-04	4.2E-07	8.1E-04	7.1E-07	4.8E-04	4.2E-07	1.5E-03	1.3E-06	2.4E-03	2.1E-06
3	1.3902	1.3432	0.00975	0.02924	0.04874	1.3E-04	1.2E-07	4.0E-04	3.5E-07	6.7E-04	5.8E-07	4.0E-04	3.5E-07	1.2E-03	1.1E-06	2.0E-03	1.8E-06
4	1.1494	1.1105	0.00806	0.02418	0.04030	1.1E-04	9.7E-08	3.3E-04	2.9E-07	5.5E-04	4.8E-07	3.3E-04	2.9E-07	9.9E-04	8.7E-07	1.7E-03	1.4E-06
5	0.9503	0.9182	0.00666	0.01999	0.03332	9.1E-05	8.0E-08	2.7E-04	2.4E-07	4.6E-04	4.0E-07	2.7E-04	2.4E-07	8.2E-04	7.2E-07	1.4E-03	1.2E-06
6	0.7857	0.7591	0.00551	0.01653	0.02754	7.5E-05	6.6E-08	2.3E-04	2.0E-07	3.8E-04	3.3E-07	2.3E-04	2.0E-07	6.8E-04	5.9E-07	1.1E-03	9.9E-07
7	0.6496	0.6276	0.00455	0.01366	0.02277	6.2E-05	5.5E-08	1.9E-04	1.6E-07	3.1E-04	2.7E-07	1.9E-04	1.6E-07	5.6E-04	4.9E-07	9.4E-04	8.2E-07
8	0.5370	0.5189	0.00377	0.01130	0.01883	5.2E-05	4.5E-08	1.5E-04	1.4E-07	2.6E-04	2.3E-07	1.5E-04	1.4E-07	4.6E-04	4.1E-07	7.7E-04	6.8E-07
9	0.4440	0.4290	0.00311	0.00934	0.01557	4.3E-05	3.7E-08	1.3E-04	1.1E-07	2.1E-04	1.9E-07	1.3E-04	1.1E-07	3.8E-04	3.4E-07	6.4E-04	5.6E-07
10	0.3671	0.3547	0.00257	0.00772	0.01287	3.5E-05	3.1E-08	1.1E-04	9.3E-08	1.8E-04	1.5E-07	1.1E-04	9.3E-08	3.2E-04	2.8E-07	5.3E-04	4.6E-07
11	0.3035	0.2932	0.00213	0.00638	0.01064	2.9E-05	2.6E-08	8.7E-05	7.7E-08	1.5E-04	1.3E-07	8.7E-05	7.7E-08	2.6E-04	2.3E-07	4.4E-04	3.8E-07
12	0.2509	0.2424	0.00176	0.00528	0.00880	2.4E-05	2.1E-08	7.2E-05	6.3E-08	1.2E-04	1.1E-07	7.2E-05	6.3E-08	2.2E-04	1.9E-07	3.6E-04	3.2E-07
13	0.2075	0.2004	0.00145	0.00436	0.00727	2.0E-05	1.7E-08	6.0E-05	5.2E-08	1.0E-04	8.7E-08	6.0E-05	5.2E-08	1.8E-04	1.6E-07	3.0E-04	2.6E-07
14	0.1715	0.1657	0.00120	0.00361	0.00601	1.6E-05	1.4E-08	4.9E-05	4.3E-08	8.2E-05	7.2E-08	4.9E-05	4.3E-08	1.5E-04	1.3E-07	2.5E-04	2.2E-07
15	0.1418	0.1370	0.00099	0.00298	0.00497	1.4E-05	1.2E-08	4.1E-05	3.6E-08	6.8E-05	6.0E-08	4.1E-05	3.6E-08	1.2E-04	1.1E-07	2.0E-04	1.8E-07
16	0.1172	0.1133	0.00082	0.00247	0.00411	1.1E-05	9.9E-09	3.4E-05	3.0E-08	5.6E-05	4.9E-08	3.4E-05	3.0E-08	1.0E-04	8.9E-08	1.7E-04	1.5E-07
17	0.0969	0.0937	0.00068	0.00204	0.00340	9.3E-06	8.1E-09	2.8E-05	2.4E-08	4.7E-05	4.1E-08	2.8E-05	2.4E-08	8.4E-05	7.3E-08	1.4E-04	1.2E-07
18	0.0801	0.0774	0.00056	0.00169	0.00281	7.7E-06	6.7E-09	2.3E-05	2.0E-08	3.8E-05	3.4E-08	2.3E-05	2.0E-08	6.9E-05	6.1E-08	1.2E-04	1.0E-07
19	0.0663	0.0640	0.00046	0.00139	0.00232	6.4E-06	5.6E-09	1.9E-05	1.7E-08	3.2E-05	2.8E-08	1.9E-05	1.7E-08	5.7E-05	5.0E-08	9.5E-05	8.4E-08
20	0.0548	0.0529	0.00038	0.00115	0.00192	5.3E-06	4.6E-09	1.6E-05	1.4E-08	2.6E-05	2.3E-08	1.6E-05	1.4E-08	4.7E-05	4.1E-08	7.9E-05	6.9E-08
21	0.0453	0.0438	0.00032	0.00095	0.00159	4.4E-06	3.8E-09	1.3E-05	1.1E-08	2.2E-05	1.9E-08	1.3E-05	1.1E-08	3.9E-05	3.4E-08	6.5E-05	5.7E-08
22	0.0374	0.0362	0.00026	0.00079	0.00131	3.6E-06	3.1E-09	1.1E-05	9.4E-09	1.8E-05	1.6E-08	1.1E-05	9.4E-09	3.2E-05	2.8E-08	5.4E-05	4.7E-08
23	0.0310	0.0299	0.00022	0.00065	0.00109	3.0E-06	2.6E-09	8.9E-06	7.8E-09	1.5E-05	1.3E-08	8.9E-06	7.8E-09	2.7E-05	2.3E-08	4.5E-05	3.9E-08
24	0.0256	0.0247	0.00018	0.00054	0.00090	2.5E-06	2.2E-09	7.4E-06	6.5E-09	1.2E-05	1.1E-08	7.4E-06	6.5E-09	2.2E-05	1.9E-08	3.7E-05	3.2E-08
25	0.0212	0.0204	0.00015	0.00045	0.00074	2.0E-06	1.8E-09	6.1E-06	5.3E-09	1.0E-05	8.9E-09	6.1E-06	5.3E-09	1.8E-05	1.6E-08	3.0E-05	2.7E-08
26	0.0175	0.0169	0.00012	0.00037	0.00061	1.7E-06	1.5E-09	5.0E-06	4.4E-09	8.4E-06	7.4E-09	5.0E-06	4.4E-09	1.5E-05	1.3E-08	2.5E-05	2.2E-08
27	0.0145	0.0140	0.00010	0.00030	0.00051	1.4E-06	1.2E-09	4.2E-06	3.6E-09	6.9E-06	6.1E-09	4.2E-06	3.6E-09	1.3E-05	1.1E-08	2.1E-05	1.8E-08
28	0.0120	0.0116	0.00008	0.00025	0.00042	1.1E-06	1.0E-09	3.4E-06	3.0E-09	5.7E-06	5.0E-09	3.4E-06	3.0E-09	1.0E-05	9.0E-09	1.7E-05	1.5E-08
29	0.0099	0.0096	0.00007	0.00021	0.00035	9.5E-07	8.3E-10	2.8E-06	2.5E-09	4.7E-06	4.2E-09	2.8E-06	2.5E-09	8.5E-06	7.5E-09	1.4E-05	1.2E-08
30	0.0082	0.0079	0.00006	0.00017	0.00029	7.9E-07	6.9E-10	2.4E-06	2.1E-09	3.9E-06	3.4E-09	2.4E-06	2.1E-09	7.1E-06	6.2E-09	1.2E-05	1.0E-08

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Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Fruiting Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Fruiting Vegetables
Specific Crop(s) Considered:	Eggplant, okra, bell & chili peppers, tomatoes
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if not):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application), MRID 451917-01
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	486 to 2760	irrigation, scouting, thinning, weeding immature plants
Medium	700	TBD	irrigation and scouting mature plants
High	1000	364 to 1908	hand harvesting, pruning, staking, tying
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	2.4600	2.3768	0.135818	0.190145	0.271636	630	450	315
1	2.0339	1.9651	0.112290	0.157206	0.224580	762	544	381
2	1.6815	1.6247	0.092838	0.129973	0.185676	922	658	461
3	1.3902	1.3432	0.076755	0.107458	0.153511	1115	796	557
4	1.1494	1.1105	0.063459	0.088843	0.126918	1348	963	674
5	0.9503	0.9182	0.052466	0.073452	0.104932	1631	1165	815
6	0.7857	0.7591	0.043377	0.060728	0.086754	1972	1409	986
7	0.6496	0.6276	0.035863	0.050208	0.071726	2386	1704	1193
8	0.5370	0.5189	0.029650	0.041511	0.059301	2886	2061	1443
9	0.4440	0.4290	0.024514	0.034320	0.049028	3490	2493	1745
10	0.3671	0.3547	0.020267	0.028374	0.040535	4222	3015	2111
11	0.3035	0.2932	0.016756	0.023459	0.033513	5106	3647	2553
12	0.2509	0.2424	0.013854	0.019395	0.027707	6176	4411	3088
13	0.2075	0.2004	0.011454	0.016035	0.022908	7470	5336	3735
14	0.1715	0.1657	0.009470	0.013258	0.018939	9035	6454	4518
15	0.1418	0.1370	0.007829	0.010961	0.015658	10928	7806	5464
16	0.1172	0.1133	0.006473	0.009062	0.012946	13218	9441	6609
17	0.0969	0.0937	0.005352	0.007492	0.010703	15988	11420	7994
18	0.0801	0.0774	0.004425	0.006194	0.008849	19337	13812	9669
19	0.0663	0.0640	0.003658	0.005121	0.007316	23389	16707	11695
20	0.0548	0.0529	0.003024	0.004234	0.006049	28290	20207	14145
21	0.0453	0.0438	0.002500	0.003501	0.005001	34217	24441	17109
22	0.0374	0.0362	0.002067	0.002894	0.004135	41387	29562	20693
23	0.0310	0.0299	0.001709	0.002393	0.003418	50059	35756	25029
24	0.0256	0.0247	0.001413	0.001978	0.002826	60547	43248	30274
25	0.0212	0.0204	0.001168	0.001636	0.002337	73234	52310	36617
26	0.0175	0.0169	0.000966	0.001352	0.001932	88578	63270	44289
27	0.0145	0.0140	0.000799	0.001118	0.001597	107138	76527	53569
28	0.0120	0.0116	0.000660	0.000924	0.001321	129586	92561	64793
29	0.0099	0.0096	0.000546	0.000764	0.001092	156738	111955	78369
30	0.0082	0.0079	0.000451	0.000632	0.000903	189579	135413	94789
Int-Term (30 day average)	0.457	0.441	0.02522	0.03531	0.05044	3392	2423	1696

D334881
Appendix C: Carbary Postapplication Cancer Risk Assessment For Fruiting Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Fruiting Vegetables
Specific Crop(s) Considered:	Eggplant, okra, bell & chili peppers, tomatoes
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 2 if calculated):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application), MRID 45121701
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour) Used For RA	Transfer Coefficients (cm2/hour) Range	Activities
Low	500	486 to 2760	irrigation, scouting, thinning, weeding immature plants
Medium	700	TBD	irrigation and scouting mature plants
High	1000	364 to 1908	hand harvesting, pruning, staking, tying
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.4600	2.3768	0.017249	0.024148	0.034498	2.4E-04	2.1E-07	3.3E-04	2.9E-07	4.7E-04	4.1E-07	7.1E-04	6.2E-07	9.9E-04	8.7E-07	1.4E-03	1.2E-06
1	2.0339	1.9651	0.014261	0.019965	0.028522	2.0E-04	1.7E-07	2.7E-04	2.4E-07	3.9E-04	3.4E-07	5.9E-04	5.1E-07	8.2E-04	7.2E-07	1.2E-03	1.0E-06
2	1.6815	1.6247	0.011790	0.016507	0.023581	1.6E-04	1.4E-07	2.3E-04	2.0E-07	3.2E-04	2.8E-07	4.8E-04	4.2E-07	6.8E-04	5.9E-07	9.7E-04	8.5E-07
3	1.3902	1.3432	0.009748	0.013647	0.019496	1.3E-04	1.2E-07	1.9E-04	1.6E-07	2.7E-04	2.3E-07	4.0E-04	3.5E-07	5.6E-04	4.9E-07	8.0E-04	7.0E-07
4	1.1494	1.1105	0.008059	0.011283	0.016119	1.1E-04	9.7E-08	1.5E-04	1.4E-07	2.2E-04	1.9E-07	3.3E-04	2.9E-07	4.6E-04	4.1E-07	6.6E-04	5.8E-07
5	0.9503	0.9182	0.006663	0.009328	0.013326	9.1E-05	8.0E-08	1.3E-04	1.1E-07	1.8E-04	1.6E-07	2.7E-04	2.4E-07	3.8E-04	3.4E-07	5.5E-04	4.8E-07
6	0.7857	0.7591	0.005509	0.007712	0.011018	7.5E-05	6.6E-08	1.1E-04	9.2E-08	1.5E-04	1.3E-07	2.3E-04	2.0E-07	3.2E-04	2.8E-07	4.5E-04	4.0E-07
7	0.6496	0.6276	0.004555	0.006376	0.009109	6.2E-05	5.5E-08	8.7E-05	7.6E-08	1.2E-04	1.1E-07	1.9E-04	1.6E-07	2.6E-04	2.3E-07	3.7E-04	3.3E-07
8	0.5370	0.5189	0.003766	0.005272	0.007531	5.2E-05	4.5E-08	7.2E-05	6.3E-08	1.0E-04	9.0E-08	1.5E-04	1.4E-07	2.2E-04	1.9E-07	3.1E-04	2.7E-07
9	0.4440	0.4290	0.003113	0.004359	0.006227	4.3E-05	3.7E-08	6.0E-05	5.2E-08	8.5E-05	7.5E-08	1.3E-04	1.1E-07	1.8E-04	1.6E-07	2.6E-04	2.2E-07
10	0.3671	0.3547	0.002574	0.003604	0.005148	3.5E-05	3.1E-08	4.9E-05	4.3E-08	7.1E-05	6.2E-08	1.1E-04	9.3E-08	1.5E-04	1.3E-07	2.1E-04	1.9E-07
11	0.3035	0.2932	0.002128	0.002979	0.004256	2.9E-05	2.6E-08	4.1E-05	3.6E-08	5.8E-05	5.1E-08	8.7E-05	7.7E-08	1.2E-04	1.1E-07	1.7E-04	1.5E-07
12	0.2509	0.2424	0.001759	0.002463	0.003519	2.4E-05	2.1E-08	3.4E-05	3.0E-08	4.8E-05	4.2E-08	7.2E-05	6.3E-08	1.0E-04	8.9E-08	1.4E-04	1.3E-07
13	0.2075	0.2004	0.001455	0.002036	0.002909	2.0E-05	1.7E-08	2.8E-05	2.4E-08	4.0E-05	3.5E-08	6.0E-05	5.2E-08	8.4E-05	7.3E-08	1.2E-04	1.0E-07
14	0.1715	0.1657	0.001203	0.001684	0.002405	1.6E-05	1.4E-08	2.3E-05	2.0E-08	3.3E-05	2.9E-08	4.9E-05	4.3E-08	6.9E-05	6.1E-08	9.9E-05	8.6E-08
15	0.1418	0.1370	0.000994	0.001392	0.001989	1.4E-05	1.2E-08	1.9E-05	1.7E-08	2.7E-05	2.4E-08	4.1E-05	3.6E-08	5.7E-05	5.0E-08	8.2E-05	7.2E-08
16	0.1172	0.1133	0.000822	0.001151	0.001644	1.1E-05	9.9E-09	1.6E-05	1.4E-08	2.3E-05	2.0E-08	3.4E-05	3.0E-08	4.7E-05	4.1E-08	6.8E-05	5.9E-08
17	0.0969	0.0937	0.000680	0.000952	0.001359	9.3E-06	8.1E-09	1.3E-05	1.1E-08	1.9E-05	1.6E-08	2.8E-05	2.4E-08	3.9E-05	3.4E-08	5.6E-05	4.9E-08
18	0.0801	0.0774	0.000562	0.000787	0.001124	7.7E-06	6.7E-09	1.1E-05	9.4E-09	1.5E-05	1.3E-08	2.3E-05	2.0E-08	3.2E-05	2.8E-08	4.6E-05	4.0E-08
19	0.0663	0.0640	0.000465	0.000650	0.000929	6.4E-06	5.6E-09	8.9E-06	7.8E-09	1.3E-05	1.1E-08	1.9E-05	1.7E-08	2.7E-05	2.3E-08	3.8E-05	3.3E-08
20	0.0548	0.0529	0.000384	0.000538	0.000768	5.3E-06	4.6E-09	7.4E-06	6.4E-09	1.1E-05	9.2E-09	1.6E-05	1.4E-08	2.2E-05	1.9E-08	3.2E-05	2.8E-08
21	0.0453	0.0438	0.000318	0.000445	0.000635	4.4E-06	3.8E-09	6.1E-06	5.3E-09	8.7E-06	7.6E-09	1.3E-05	1.1E-08	1.8E-05	1.6E-08	2.6E-05	2.3E-08
22	0.0374	0.0362	0.000263	0.000368	0.000525	3.6E-06	3.1E-09	5.0E-06	4.4E-09	7.2E-06	6.3E-09	1.1E-05	9.4E-09	1.5E-05	1.3E-08	2.2E-05	1.9E-08
23	0.0310	0.0299	0.000217	0.000304	0.000434	3.0E-06	2.6E-09	4.2E-06	3.6E-09	5.9E-06	5.2E-09	8.9E-06	7.8E-09	1.2E-05	1.1E-08	1.8E-05	1.6E-08
24	0.0256	0.0247	0.000179	0.000251	0.000359	2.5E-06	2.2E-09	3.4E-06	3.0E-09	4.9E-06	4.3E-09	7.4E-06	6.5E-09	1.0E-05	9.0E-09	1.5E-05	1.3E-08
25	0.0212	0.0204	0.000148	0.000208	0.000297	2.0E-06	1.8E-09	2.8E-06	2.5E-09	4.1E-06	3.6E-09	6.1E-06	5.3E-09	8.5E-06	7.5E-09	1.2E-05	1.1E-08
26	0.0175	0.0169	0.000123	0.000172	0.000245	1.7E-06	1.5E-09	2.4E-06	2.1E-09	3.4E-06	2.9E-09	5.0E-06	4.4E-09	7.1E-06	6.2E-09	1.0E-05	8.8E-09
27	0.0145	0.0140	0.000101	0.000142	0.000203	1.4E-06	1.2E-09	1.9E-06	1.7E-09	2.8E-06	2.4E-09	4.2E-06	3.6E-09	5.8E-06	5.1E-09	8.3E-06	7.3E-09
28	0.0120	0.0116	0.000084	0.000117	0.000168	1.1E-06	1.0E-09	1.6E-06	1.4E-09	2.3E-06	2.0E-09	3.4E-06	3.0E-09	4.8E-06	4.2E-09	6.9E-06	6.0E-09
29	0.0099	0.0096	0.000069	0.000097	0.000139	9.5E-07	8.3E-10	1.3E-06	1.2E-09	1.9E-06	1.7E-09	2.8E-06	2.5E-09	4.0E-06	3.5E-09	5.7E-06	5.0E-09
30	0.0082	0.0079	0.000057	0.000080	0.000115	7.9E-07	6.9E-10	1.1E-06	9.6E-10	1.6E-06	1.4E-09	2.4E-06	2.1E-09	3.3E-06	2.9E-09	4.7E-06	4.1E-09

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Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Head and Stem Brassica Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1 Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Brassica
Specific Crop(s) Considered:	Broccoli, brussel sprouts, cabbage, cauliflower
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTS Cabbage Weeding Study (Groundboom Application), MRID 45191701
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	2000	1672 to 8147	Irrigation, scouting, thinning, weeding immature plants
Medium	4000	1672 to 8147	Scouting mature plants
High	5000	2862 to 7584	Hand harvesting, irrigation, pruning, topping, tying mature plants
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	2.4600	2.3768	0.54327	1.08654	1.35818	157	79	63
1	2.0339	1.9651	0.44916	0.89832	1.12290	190	95	76
2	1.6815	1.6247	0.37135	0.74270	0.92838	230	115	92
3	1.3902	1.3432	0.30702	0.61404	0.76755	279	139	111
4	1.1494	1.1105	0.25384	0.50767	0.63459	337	169	135
5	0.9503	0.9182	0.20986	0.41973	0.52466	408	204	163
6	0.7857	0.7591	0.17351	0.34702	0.43377	493	247	197
7	0.6496	0.6276	0.14345	0.28690	0.35863	596	298	239
8	0.5370	0.5189	0.11860	0.23720	0.29650	721	361	289
9	0.4440	0.4290	0.09806	0.19611	0.24514	873	436	349
10	0.3671	0.3547	0.08107	0.16214	0.20267	1055	528	422
11	0.3035	0.2932	0.06703	0.13405	0.16756	1277	638	511
12	0.2509	0.2424	0.05541	0.11083	0.13854	1544	772	618
13	0.2075	0.2004	0.04582	0.09163	0.11454	1867	934	747
14	0.1715	0.1657	0.03788	0.07576	0.09470	2259	1129	904
15	0.1418	0.1370	0.03132	0.06263	0.07829	2732	1366	1093
16	0.1172	0.1133	0.02589	0.05178	0.06473	3305	1652	1322
17	0.0969	0.0937	0.02141	0.04281	0.05352	3997	1998	1599
18	0.0801	0.0774	0.01770	0.03540	0.04425	4834	2417	1934
19	0.0663	0.0640	0.01463	0.02926	0.03658	5847	2924	2339
20	0.0548	0.0529	0.01210	0.02420	0.03024	7072	3536	2829
21	0.0453	0.0438	0.01000	0.02000	0.02500	8554	4277	3422
22	0.0374	0.0362	0.00827	0.01654	0.02067	10347	5173	4139
23	0.0310	0.0299	0.00684	0.01367	0.01709	12515	6257	5006
24	0.0256	0.0247	0.00565	0.01130	0.01413	15137	7568	6055
25	0.0212	0.0204	0.00467	0.00935	0.01168	18308	9154	7323
26	0.0175	0.0169	0.00386	0.00773	0.00966	22145	11072	8858
27	0.0145	0.0140	0.00319	0.00639	0.00799	26784	13392	10714
28	0.0120	0.0116	0.00264	0.00528	0.00660	32396	16198	12959
29	0.0099	0.0096	0.00218	0.00437	0.00546	39184	19592	15674
30	0.0082	0.0079	0.00181	0.00361	0.00451	47395	23697	18958
Int-Term (30 day average)	0.457	0.441	0.10089	0.20177	0.25222	848	424	339

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Appendix C Carbaryl Postapplication Cancer Risk Assessment For Head and Stem Brassica Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Brassica
Specific Crop(s) Considered:	Broccoli, brussel sprouts, cabbage, cauliflower
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if unavailable):	1
Source:	ARTF Cabbage Weeding Study (Broccoli/Cabbage, Application, MRID 45191701)
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	2000	1672 to 8147	Irrigation, scouting, thinning, weeding immature plants
Medium	4000	1672 to 8147	Scouting mature plants
High	5000	2862 to 7584	Hand harvesting, irrigation, pruning, topping, tying mature plants
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.4600	2.3768	0.06900	0.13799	0.17249	9.5E-04	8.3E-07	1.9E-03	1.7E-06	2.4E-03	2.1E-06	2.8E-03	2.5E-06	5.7E-03	5.0E-06	7.1E-03	6.2E-06
1	2.0339	1.9651	0.05704	0.11409	0.14261	7.8E-04	6.8E-07	1.6E-03	1.4E-06	2.0E-03	1.7E-06	2.3E-03	2.1E-06	4.7E-03	4.1E-06	5.9E-03	5.1E-06
2	1.6815	1.6247	0.04716	0.09432	0.11790	6.5E-04	5.7E-07	1.3E-03	1.1E-06	1.6E-03	1.4E-06	1.9E-03	1.7E-06	3.9E-03	3.4E-06	4.8E-03	4.2E-06
3	1.3902	1.3432	0.03899	0.07798	0.09748	5.3E-04	4.7E-07	1.1E-03	9.3E-07	1.3E-03	1.2E-06	1.6E-03	1.4E-06	3.2E-03	2.8E-06	4.0E-03	3.5E-06
4	1.1494	1.1105	0.03224	0.06447	0.08059	4.4E-04	3.9E-07	8.8E-04	7.7E-07	1.1E-03	9.7E-07	1.3E-03	1.2E-06	2.6E-03	2.3E-06	3.3E-03	2.9E-06
5	0.9503	0.9182	0.02665	0.05331	0.06663	3.7E-04	3.2E-07	7.3E-04	6.4E-07	9.1E-04	8.0E-07	1.1E-03	9.6E-07	2.2E-03	1.9E-06	2.7E-03	2.4E-06
6	0.7857	0.7591	0.02204	0.04407	0.05509	3.0E-04	2.6E-07	6.0E-04	5.3E-07	7.5E-04	6.6E-07	9.1E-04	7.9E-07	1.8E-03	1.6E-06	2.3E-03	2.0E-06
7	0.6496	0.6276	0.01822	0.03644	0.04555	2.5E-04	2.2E-07	5.0E-04	4.4E-07	6.2E-04	5.5E-07	7.5E-04	6.6E-07	1.5E-03	1.3E-06	1.9E-03	1.6E-06
8	0.5370	0.5189	0.01506	0.03012	0.03766	2.1E-04	1.8E-07	4.1E-04	3.6E-07	5.2E-04	4.5E-07	6.2E-04	5.4E-07	1.2E-03	1.1E-06	1.5E-03	1.4E-06
9	0.4440	0.4290	0.01245	0.02491	0.03113	1.7E-04	1.5E-07	3.4E-04	3.0E-07	4.3E-04	3.7E-07	5.1E-04	4.5E-07	1.0E-03	9.0E-07	1.3E-03	1.1E-06
10	0.3671	0.3547	0.01030	0.02059	0.02574	1.4E-04	1.2E-07	2.8E-04	2.5E-07	3.5E-04	3.1E-07	4.2E-04	3.7E-07	8.5E-04	7.4E-07	1.1E-03	9.3E-07
11	0.3035	0.2932	0.00851	0.01702	0.02128	1.2E-04	1.0E-07	2.3E-04	2.0E-07	2.9E-04	2.6E-07	3.5E-04	3.1E-07	7.0E-04	6.1E-07	8.7E-04	7.7E-07
12	0.2509	0.2424	0.00704	0.01408	0.01759	9.6E-05	8.4E-08	1.9E-04	1.7E-07	2.4E-04	2.1E-07	2.9E-04	2.5E-07	5.8E-04	5.1E-07	7.2E-04	6.3E-07
13	0.2075	0.2004	0.00582	0.01164	0.01455	8.0E-05	7.0E-08	1.6E-04	1.4E-07	2.0E-04	1.7E-07	2.4E-04	2.1E-07	4.8E-04	4.2E-07	6.0E-04	5.2E-07
14	0.1715	0.1657	0.00481	0.00962	0.01203	6.6E-05	5.8E-08	1.3E-04	1.2E-07	1.6E-04	1.4E-07	2.0E-04	1.7E-07	4.0E-04	3.5E-07	4.9E-04	4.3E-07
15	0.1418	0.1370	0.00398	0.00795	0.00994	5.4E-05	4.8E-08	1.1E-04	9.5E-08	1.4E-04	1.2E-07	1.6E-04	1.4E-07	3.3E-04	2.9E-07	4.1E-04	3.6E-07
16	0.1172	0.1133	0.00329	0.00658	0.00822	4.5E-05	3.9E-08	9.0E-05	7.9E-08	1.1E-04	9.9E-08	1.4E-04	1.2E-07	2.7E-04	2.4E-07	3.4E-04	3.0E-07
17	0.0969	0.0937	0.00272	0.00544	0.00680	3.7E-05	3.3E-08	7.4E-05	6.5E-08	9.3E-05	8.1E-08	1.1E-04	9.8E-08	2.2E-04	2.0E-07	2.8E-04	2.4E-07
18	0.0801	0.0774	0.00225	0.00450	0.00562	3.1E-05	2.7E-08	6.2E-05	5.4E-08	7.7E-05	6.7E-08	9.2E-05	8.1E-08	1.8E-04	1.6E-07	2.3E-04	2.0E-07
19	0.0663	0.0640	0.00186	0.00372	0.00465	2.5E-05	2.2E-08	5.1E-05	4.5E-08	6.4E-05	5.6E-08	7.6E-05	6.7E-08	1.5E-04	1.3E-07	1.9E-04	1.7E-07
20	0.0548	0.0529	0.00154	0.00307	0.00384	2.1E-05	1.8E-08	4.2E-05	3.7E-08	5.3E-05	4.6E-08	6.3E-05	5.5E-08	1.3E-04	1.1E-07	1.6E-04	1.4E-07
21	0.0453	0.0438	0.00127	0.00254	0.00318	1.7E-05	1.5E-08	3.5E-05	3.0E-08	4.4E-05	3.8E-08	5.2E-05	4.6E-08	1.0E-04	9.1E-08	1.3E-04	1.1E-07
22	0.0374	0.0362	0.00105	0.00210	0.00263	1.4E-05	1.3E-08	2.9E-05	2.5E-08	3.6E-05	3.1E-08	4.3E-05	3.8E-08	8.6E-05	7.6E-08	1.1E-04	9.4E-08
23	0.0310	0.0299	0.00087	0.00174	0.00217	1.2E-05	1.0E-08	2.4E-05	2.1E-08	3.0E-05	2.6E-08	3.6E-05	3.1E-08	7.1E-05	6.2E-08	8.9E-05	7.8E-08
24	0.0256	0.0247	0.00072	0.00144	0.00179	9.8E-06	8.6E-09	2.0E-05	1.7E-08	2.5E-05	2.2E-08	3.0E-05	2.6E-08	5.9E-05	5.2E-08	7.4E-05	6.5E-08
25	0.0212	0.0204	0.00059	0.00119	0.00148	8.1E-06	7.1E-09	1.6E-05	1.4E-08	2.0E-05	1.8E-08	2.4E-05	2.1E-08	4.9E-05	4.3E-08	6.1E-05	5.3E-08
26	0.0175	0.0169	0.00049	0.00098	0.00123	6.7E-06	5.9E-09	1.3E-05	1.2E-08	1.7E-05	1.5E-08	2.0E-05	1.8E-08	4.0E-05	3.5E-08	5.0E-05	4.4E-08
27	0.0145	0.0140	0.00041	0.00081	0.00101	5.6E-06	4.9E-09	1.1E-05	9.7E-09	1.4E-05	1.2E-08	1.7E-05	1.5E-08	3.3E-05	2.9E-08	4.2E-05	3.6E-08
28	0.0120	0.0116	0.00034	0.00067	0.00084	4.6E-06	4.0E-09	9.2E-06	8.0E-09	1.1E-05	1.0E-08	1.4E-05	1.2E-08	2.8E-05	2.4E-08	3.4E-05	3.0E-08
29	0.0099	0.0096	0.00028	0.00055	0.00069	3.8E-06	3.3E-09	7.6E-06	6.6E-09	9.5E-06	8.3E-09	1.1E-05	1.0E-08	2.3E-05	2.0E-08	2.8E-05	2.5E-08
30	0.0082	0.0079	0.00023	0.00046	0.00057	3.1E-06	2.7E-09	6.3E-06	5.5E-09	7.9E-06	6.9E-09	9.4E-06	8.2E-09	1.9E-05	1.6E-08	2.4E-05	2.1E-08

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Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Leafy Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Leafy Vegetables
Specific Crop(s) Considered:	Bok choy, celery, collards, greens, kale, herbs, lettuce/romaine, napa, parsley, swiss chard, spinach, watercress
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if not/duplicate):	1
Source:	ARTF Cabbage Weeding Study (Groundboom Application), MRID 45191701
Slope of Semilog Regression:	0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	486 to 2760	Irrigation, scouting, thinning, weeding immature plants
Medium	1500	486 to 2760	Irrigation and scouting mature plants
High	2500	486 to 2760	Hand harvesting, pruning, and thinning mature plants
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	2.4600	2.3768	0.135818	0.407453	0.679089	630	210	126
1	2.0339	1.9651	0.112290	0.336870	0.561450	762	254	152
2	1.6815	1.6247	0.092838	0.278514	0.464189	922	307	184
3	1.3902	1.3432	0.076755	0.230266	0.383777	1115	372	223
4	1.1494	1.1105	0.063459	0.190377	0.317295	1348	449	270
5	0.9503	0.9182	0.052466	0.157398	0.262330	1631	544	326
6	0.7857	0.7591	0.043377	0.130132	0.216886	1972	657	394
7	0.6496	0.6276	0.035863	0.107589	0.179315	2386	795	477
8	0.5370	0.5189	0.029650	0.088951	0.148252	2886	962	577
9	0.4440	0.4290	0.024514	0.073542	0.122570	3490	1163	698
10	0.3671	0.3547	0.020267	0.060802	0.101337	4222	1407	844
11	0.3035	0.2932	0.016756	0.050269	0.083782	5106	1702	1021
12	0.2509	0.2424	0.013854	0.041561	0.069269	6176	2059	1235
13	0.2075	0.2004	0.011454	0.034361	0.057269	7470	2490	1494
14	0.1715	0.1657	0.009470	0.028409	0.047348	9035	3012	1807
15	0.1418	0.1370	0.007829	0.023488	0.039146	10928	3643	2186
16	0.1172	0.1133	0.006473	0.019419	0.032365	13218	4406	2644
17	0.0969	0.0937	0.005352	0.016055	0.026758	15988	5329	3198
18	0.0801	0.0774	0.004425	0.013274	0.022123	19337	6446	3867
19	0.0663	0.0640	0.003658	0.010974	0.018291	23389	7796	4678
20	0.0548	0.0529	0.003024	0.009073	0.015122	28290	9430	5658
21	0.0453	0.0438	0.002500	0.007501	0.012502	34217	11406	6843
22	0.0374	0.0362	0.002067	0.006202	0.010337	41387	13796	8277
23	0.0310	0.0299	0.001709	0.005128	0.008546	50059	16686	10012
24	0.0256	0.0247	0.001413	0.004239	0.007066	60547	20182	12109
25	0.0212	0.0204	0.001168	0.003505	0.005842	73234	24411	14647
26	0.0175	0.0169	0.000966	0.002898	0.004830	88578	29526	17716
27	0.0145	0.0140	0.000799	0.002396	0.003993	107138	35713	21428
28	0.0120	0.0116	0.000660	0.001981	0.003301	129586	43195	25917
29	0.0099	0.0096	0.000546	0.001638	0.002729	156738	52246	31348
30	0.0082	0.0079	0.000451	0.001354	0.002257	189579	63193	37916
Int-Term (30 day average)	0.457	0.441	0.02522	0.07567	0.12611	3392	1131	678

D334881
Appendix C. Carbaryl. Postapplication Cancer Risk Assessment For Leafy Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Leafy Vegetables
Specific Crop(s) Considered:	Bok choy, celery, collards, greens, kale, cilantro, lettuce/romaine, napa, parsley, swiss chard, spinach, watercress
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 2 if Carbaryl)	1
Source:	MRID [illegible] Application [illegible]
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	500	486 to 2760	Irrigation, scouting, thinning, weeding immature plants
Medium	1500	486 to 2760	Irrigation and scouting mature plants
High	2500	486 to 2760	Hand harvesting, pruning, and thinning mature plants
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.4600	2.3768	0.01725	0.05175	0.08624	2.4E-04	2.1E-07	7.1E-04	6.2E-07	1.2E-03	1.0E-06	7.1E-04	6.2E-07	2.1E-03	1.9E-06	3.5E-03	3.1E-06
1	2.0339	1.9651	0.01426	0.04278	0.07130	2.0E-04	1.7E-07	5.9E-04	5.1E-07	9.8E-04	8.5E-07	5.9E-04	5.1E-07	1.8E-03	1.5E-06	2.9E-03	2.6E-06
2	1.6815	1.6247	0.01179	0.03537	0.05895	1.6E-04	1.4E-07	4.8E-04	4.2E-07	8.1E-04	7.1E-07	4.8E-04	4.2E-07	1.5E-03	1.3E-06	2.4E-03	2.1E-06
3	1.3902	1.3432	0.00975	0.02924	0.04874	1.3E-04	1.2E-07	4.0E-04	3.5E-07	6.7E-04	5.8E-07	4.0E-04	3.5E-07	1.2E-03	1.1E-06	2.0E-03	1.8E-06
4	1.1494	1.1105	0.00806	0.02418	0.04030	1.1E-04	9.7E-08	3.3E-04	2.9E-07	5.5E-04	4.8E-07	3.3E-04	2.9E-07	9.9E-04	8.7E-07	1.7E-03	1.4E-06
5	0.9503	0.9182	0.00666	0.01999	0.03332	9.1E-05	8.0E-08	2.7E-04	2.4E-07	4.6E-04	4.0E-07	2.7E-04	2.4E-07	8.2E-04	7.2E-07	1.4E-03	1.2E-06
6	0.7857	0.7591	0.00551	0.01653	0.02754	7.5E-05	6.6E-08	2.3E-04	2.0E-07	3.8E-04	3.3E-07	2.3E-04	2.0E-07	6.8E-04	5.9E-07	1.1E-03	9.9E-07
7	0.6496	0.6276	0.00455	0.01366	0.02277	6.2E-05	5.5E-08	1.9E-04	1.6E-07	3.1E-04	2.7E-07	1.9E-04	1.6E-07	5.6E-04	4.9E-07	9.4E-04	8.2E-07
8	0.5370	0.5189	0.00377	0.01130	0.01883	5.2E-05	4.5E-08	1.5E-04	1.4E-07	2.6E-04	2.3E-07	1.5E-04	1.4E-07	4.6E-04	4.1E-07	7.7E-04	6.8E-07
9	0.4440	0.4290	0.00311	0.00934	0.01557	4.3E-05	3.7E-08	1.3E-04	1.1E-07	2.1E-04	1.9E-07	1.3E-04	1.1E-07	3.8E-04	3.4E-07	6.4E-04	5.6E-07
10	0.3671	0.3547	0.00257	0.00772	0.01287	3.5E-05	3.1E-08	1.1E-04	9.3E-08	1.8E-04	1.5E-07	1.1E-04	9.3E-08	3.2E-04	2.8E-07	5.3E-04	4.6E-07
11	0.3035	0.2932	0.00213	0.00638	0.01064	2.9E-05	2.6E-08	8.7E-05	7.7E-08	1.5E-04	1.3E-07	8.7E-05	7.7E-08	2.6E-04	2.3E-07	4.4E-04	3.8E-07
12	0.2509	0.2424	0.00176	0.00528	0.00880	2.4E-05	2.1E-08	7.2E-05	6.3E-08	1.2E-04	1.1E-07	7.2E-05	6.3E-08	2.2E-04	1.9E-07	3.6E-04	3.2E-07
13	0.2075	0.2004	0.00145	0.00436	0.00727	2.0E-05	1.7E-08	6.0E-05	5.2E-08	1.0E-04	8.7E-08	6.0E-05	5.2E-08	1.8E-04	1.6E-07	3.0E-04	2.6E-07
14	0.1715	0.1657	0.00120	0.00361	0.00601	1.6E-05	1.4E-08	4.9E-05	4.3E-08	8.2E-05	7.2E-08	4.9E-05	4.3E-08	1.5E-04	1.3E-07	2.5E-04	2.2E-07
15	0.1418	0.1370	0.00099	0.00298	0.00497	1.4E-05	1.2E-08	4.1E-05	3.6E-08	6.8E-05	6.0E-08	4.1E-05	3.6E-08	1.2E-04	1.1E-07	2.0E-04	1.8E-07
16	0.1172	0.1133	0.00082	0.00247	0.00411	1.1E-05	9.9E-09	3.4E-05	3.0E-08	5.6E-05	4.9E-08	3.4E-05	3.0E-08	1.0E-04	8.9E-08	1.7E-04	1.5E-07
17	0.0969	0.0937	0.00068	0.00204	0.00340	9.3E-06	8.1E-09	2.8E-05	2.4E-08	4.7E-05	4.1E-08	2.8E-05	2.4E-08	8.4E-05	7.3E-08	1.4E-04	1.2E-07
18	0.0801	0.0774	0.00056	0.00169	0.00281	7.7E-06	6.7E-09	2.3E-05	2.0E-08	3.8E-05	3.4E-08	2.3E-05	2.0E-08	6.9E-05	6.1E-08	1.2E-04	1.0E-07
19	0.0663	0.0640	0.00046	0.00139	0.00232	6.4E-06	5.6E-09	1.9E-05	1.7E-08	3.2E-05	2.8E-08	1.9E-05	1.7E-08	5.7E-05	5.0E-08	9.5E-05	8.4E-08
20	0.0548	0.0529	0.00038	0.00115	0.00192	5.3E-06	4.6E-09	1.6E-05	1.4E-08	2.6E-05	2.3E-08	1.6E-05	1.4E-08	4.7E-05	4.1E-08	7.9E-05	6.9E-08
21	0.0453	0.0438	0.00032	0.00095	0.00159	4.4E-06	3.8E-09	1.3E-05	1.1E-08	2.2E-05	1.9E-08	1.3E-05	1.1E-08	3.9E-05	3.4E-08	6.5E-05	5.7E-08
22	0.0374	0.0362	0.00026	0.00079	0.00131	3.6E-06	3.1E-09	1.1E-05	9.4E-09	1.8E-05	1.6E-08	1.1E-05	9.4E-09	3.2E-05	2.8E-08	5.4E-05	4.7E-08
23	0.0310	0.0299	0.00022	0.00065	0.00109	3.0E-06	2.6E-09	9.9E-06	7.8E-09	1.5E-05	1.3E-08	8.9E-06	7.8E-09	2.7E-05	2.3E-08	4.5E-05	3.9E-08
24	0.0256	0.0247	0.00018	0.00054	0.00090	2.5E-06	2.2E-09	7.4E-06	6.5E-09	1.2E-05	1.1E-08	7.4E-06	6.5E-09	2.2E-05	1.9E-08	3.7E-05	3.2E-08
25	0.0213	0.0204	0.00015	0.00045	0.00074	2.0E-06	1.8E-09	6.1E-06	5.3E-09	1.0E-05	8.9E-09	6.1E-06	5.3E-09	1.8E-05	1.6E-08	3.0E-05	2.7E-08
26	0.0175	0.0169	0.00012	0.00037	0.00061	1.7E-06	1.5E-09	5.0E-06	4.4E-09	8.4E-06	7.4E-09	5.0E-06	4.4E-09	1.5E-05	1.3E-08	2.5E-05	2.2E-08
27	0.0145	0.0140	0.00010	0.00030	0.00051	1.4E-06	1.2E-09	4.2E-06	3.6E-09	6.9E-06	6.1E-09	4.2E-06	3.6E-09	1.3E-05	1.1E-08	2.1E-05	1.8E-08
28	0.0120	0.0116	0.00008	0.00025	0.00042	1.1E-06	1.0E-09	3.4E-06	3.0E-09	5.7E-06	5.0E-09	3.4E-06	3.0E-09	1.0E-05	9.0E-09	1.7E-05	1.5E-08
29	0.0099	0.0096	0.00007	0.00021	0.00035	9.5E-07	8.3E-10	2.8E-06	2.5E-09	4.7E-06	4.2E-09	2.8E-06	2.5E-09	8.5E-06	7.5E-09	1.4E-05	1.2E-08
30	0.0082	0.0079	0.00006	0.00017	0.00029	7.9E-07	6.9E-10	2.4E-06	2.1E-09	3.9E-06	3.4E-09	2.4E-06	2.1E-09	7.1E-06	6.2E-09	1.2E-05	1.0E-08

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Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Stem/Stalk Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Stem and stalk Vegetables
Specific Crop(s) Considered:	Artichoke, asparagus, pineapple
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	4410: Tobacco Harvesting Study (5 postbloom application), MRID 45000059-11
Slope of Semilog Regression:	-0.20492
[Initial] (ug/cm2):	4.258
Study Application Rate (lb ai/A):	2
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	300	140 to 290	irrigation, scouting, thinning, weeding immature plants
Medium	500	364 to 1908	irrigation and scouting mature plants
High	1000	364 to 1908	hand harvesting and pruning artichokes
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	4.2580	4.2580	0.145989	0.243314	0.486629	586	352	176
1	3.4690	3.4690	0.118939	0.198231	0.396462	719	432	216
2	2.8263	2.8263	0.096901	0.161501	0.323003	883	530	265
3	2.3026	2.3026	0.078946	0.131577	0.263154	1084	650	325
4	1.8760	1.8760	0.064319	0.107198	0.214395	1330	798	399
5	1.5284	1.5284	0.052401	0.087335	0.174670	1633	980	490
6	1.2452	1.2452	0.042692	0.071153	0.142306	2004	1202	601
7	1.0145	1.0145	0.034782	0.057969	0.115939	2460	1476	738
8	0.8265	0.8265	0.028337	0.047228	0.094457	3019	1812	906
9	0.6734	0.6734	0.023087	0.038478	0.076955	3706	2224	1112
10	0.5486	0.5486	0.018809	0.031348	0.062696	4549	2729	1365
11	0.4469	0.4469	0.015324	0.025540	0.051079	5583	3350	1675
12	0.3641	0.3641	0.012485	0.020808	0.041615	6853	4112	2056
13	0.2967	0.2967	0.010171	0.016952	0.033904	8412	5047	2524
14	0.2417	0.2417	0.008287	0.013811	0.027622	10325	6195	3098
15	0.1969	0.1969	0.006751	0.011252	0.022504	12673	7604	3802
16	0.1604	0.1604	0.005500	0.009167	0.018334	15555	9333	4667
17	0.1307	0.1307	0.004481	0.007469	0.014937	19093	11456	5728
18	0.1065	0.1065	0.003651	0.006085	0.012170	23435	14061	7031
19	0.0868	0.0868	0.002974	0.004957	0.009915	28765	17259	8630
20	0.0707	0.0707	0.002423	0.004039	0.008078	35307	21184	10592
21	0.0576	0.0576	0.001974	0.003290	0.006581	43337	26002	13001
22	0.0469	0.0469	0.001608	0.002681	0.005362	53193	31916	15958
23	0.0382	0.0382	0.001310	0.002184	0.004368	65291	39174	19587
24	0.0311	0.0311	0.001066	0.001779	0.003559	80140	48084	24042
25	0.0254	0.0254	0.000870	0.001450	0.002899	98365	59019	29510
26	0.0207	0.0207	0.000709	0.001181	0.002362	120736	72442	36221
27	0.0168	0.0168	0.000577	0.000962	0.001924	148195	88917	44459
28	0.0137	0.0137	0.000470	0.000784	0.001568	181899	109139	54570
29	0.0112	0.0112	0.000383	0.000639	0.001277	223267	133960	66980
30	0.0091	0.0091	0.000312	0.000520	0.001041	274044	164427	82213
Int-Term (30 day average)	0.740	0.740	0.02537	0.04229	0.08457	3372	2023	1012

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Appendix C: Carbaryl Postapplication Cancer Risk Assessment For Stem/Stalk Vegetable Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Stem and stalk Vegetables
Specific Crop(s) Considered:	Artichoke, asparagus, pineapple
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if default):	
Source:	ARTF Tobacco Harvesting Study, [illegible] Application, MRID 45000159-[illegible]
Slope of Semilog Regression:	-0.20492
[Initial] (ug/cm2):	4.258
Study Application Rate (lb ai/A):	2
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	300	140 to 290	Irrigation, scouting, thinning, weeding immature plants
Medium	500	364 to 1908	Irrigation and scouting mature plants
High	1000	364 to 1908	hand harvesting and pruning artichokes
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	4.2580	4.2580	0.018541	0.030901	0.061802	2.5E-04	2.2E-07	4.2E-04	3.7E-07	8.5E-04	7.4E-07	7.6E-04	6.7E-07	1.3E-03	1.1E-06	2.5E-03	2.2E-06
1	3.4690	3.4690	0.015105	0.025175	0.050351	2.1E-04	1.8E-07	3.4E-04	3.0E-07	6.9E-04	6.0E-07	6.2E-04	5.4E-07	1.0E-03	9.1E-07	2.1E-03	1.8E-06
2	2.8263	2.8263	0.012306	0.020511	0.041021	1.7E-04	1.5E-07	2.8E-04	2.5E-07	5.6E-04	4.9E-07	5.1E-04	4.4E-07	8.4E-04	7.4E-07	1.7E-03	1.5E-06
3	2.3026	2.3026	0.010026	0.016710	0.033421	1.4E-04	1.2E-07	2.3E-04	2.0E-07	4.6E-04	4.0E-07	4.1E-04	3.6E-07	6.9E-04	6.0E-07	1.4E-03	1.2E-06
4	1.8760	1.8760	0.008168	0.013614	0.027228	1.1E-04	9.8E-08	1.9E-04	1.6E-07	3.7E-04	3.3E-07	3.4E-04	2.9E-07	5.6E-04	4.9E-07	1.1E-03	9.8E-07
5	1.5284	1.5284	0.006655	0.011092	0.022183	9.1E-05	8.0E-08	1.5E-04	1.3E-07	3.0E-04	2.7E-07	2.7E-04	2.4E-07	4.6E-04	4.0E-07	9.1E-04	8.0E-07
6	1.2452	1.2452	0.005422	0.009036	0.018073	7.4E-05	6.5E-08	1.2E-04	1.1E-07	2.5E-04	2.2E-07	2.2E-04	1.9E-07	3.7E-04	3.2E-07	7.4E-04	6.5E-07
7	1.0145	1.0145	0.004417	0.007362	0.014724	6.1E-05	5.3E-08	1.0E-04	8.8E-08	2.0E-04	1.8E-07	1.8E-04	1.6E-07	3.0E-04	2.6E-07	6.1E-04	5.3E-07
8	0.8265	0.8265	0.003599	0.005998	0.011996	4.9E-05	4.3E-08	8.2E-05	7.2E-08	1.6E-04	1.4E-07	1.5E-04	1.3E-07	2.5E-04	2.2E-07	4.9E-04	4.3E-07
9	0.6734	0.6734	0.002932	0.004887	0.009773	4.0E-05	3.5E-08	6.7E-05	5.9E-08	1.3E-04	1.2E-07	1.2E-04	1.1E-07	2.0E-04	1.8E-07	4.0E-04	3.5E-07
10	0.5486	0.5486	0.002389	0.003981	0.007962	3.3E-05	2.9E-08	5.5E-05	4.8E-08	1.1E-04	9.5E-08	9.8E-05	8.6E-08	1.6E-04	1.4E-07	3.3E-04	2.9E-07
11	0.4469	0.4469	0.001946	0.003244	0.006487	2.7E-05	2.3E-08	4.4E-05	3.9E-08	8.9E-05	7.8E-08	8.0E-05	7.0E-08	1.3E-04	1.2E-07	2.7E-04	2.3E-07
12	0.3641	0.3641	0.001586	0.002643	0.005285	2.2E-05	1.9E-08	3.6E-05	3.2E-08	7.2E-05	6.3E-08	6.5E-05	5.7E-08	1.1E-04	9.5E-08	2.2E-04	1.9E-07
13	0.2967	0.2967	0.001292	0.002153	0.004306	1.8E-05	1.5E-08	2.9E-05	2.6E-08	5.9E-05	5.2E-08	5.3E-05	4.6E-08	8.8E-05	7.7E-08	1.8E-04	1.5E-07
14	0.2417	0.2417	0.001052	0.001754	0.003508	1.4E-05	1.3E-08	2.4E-05	2.1E-08	4.8E-05	4.2E-08	4.3E-05	3.8E-08	7.2E-05	6.3E-08	1.4E-04	1.3E-07
15	0.1969	0.1969	0.000857	0.001429	0.002858	1.2E-05	1.0E-08	2.0E-05	1.7E-08	3.9E-05	3.4E-08	3.5E-05	3.1E-08	5.9E-05	5.1E-08	1.2E-04	1.0E-07
16	0.1604	0.1604	0.000699	0.001164	0.002328	9.6E-06	8.4E-09	1.6E-05	1.4E-08	3.2E-05	2.8E-08	2.9E-05	2.5E-08	4.8E-05	4.2E-08	9.6E-05	8.4E-08
17	0.1307	0.1307	0.000569	0.000949	0.001897	7.8E-06	6.8E-09	1.3E-05	1.1E-08	2.6E-05	2.3E-08	2.3E-05	2.0E-08	3.9E-05	3.4E-08	7.8E-05	6.8E-08
18	0.1065	0.1065	0.000464	0.000773	0.001546	6.4E-06	5.6E-09	1.1E-05	9.3E-09	2.1E-05	1.9E-08	1.9E-05	1.7E-08	3.2E-05	2.8E-08	6.4E-05	5.6E-08
19	0.0868	0.0868	0.000378	0.000630	0.001259	5.2E-06	4.5E-09	8.6E-06	7.5E-09	1.7E-05	1.5E-08	1.6E-05	1.4E-08	2.6E-05	2.3E-08	5.2E-05	4.5E-08
20	0.0707	0.0707	0.000308	0.000513	0.001026	4.2E-06	3.7E-09	7.0E-06	6.1E-09	1.4E-05	1.2E-08	1.3E-05	1.1E-08	2.1E-05	1.8E-08	4.2E-05	3.7E-08
21	0.0576	0.0576	0.000251	0.000418	0.000836	3.4E-06	3.0E-09	5.7E-06	5.0E-09	1.1E-05	1.0E-08	1.0E-05	9.0E-09	1.7E-05	1.5E-08	3.4E-05	3.0E-08
22	0.0469	0.0469	0.000204	0.000340	0.000681	2.8E-06	2.4E-09	4.7E-06	4.1E-09	9.3E-06	8.2E-09	8.4E-06	7.3E-09	1.4E-05	1.2E-08	2.8E-05	2.4E-08
23	0.0382	0.0382	0.000166	0.000277	0.000555	2.3E-06	2.0E-09	3.8E-06	3.3E-09	7.6E-06	6.6E-09	6.8E-06	6.0E-09	1.1E-05	1.0E-08	2.3E-05	2.0E-08
24	0.0311	0.0311	0.000136	0.000226	0.000452	1.9E-06	1.6E-09	3.1E-06	2.7E-09	6.2E-06	5.4E-09	5.6E-06	4.9E-09	9.3E-06	8.1E-09	1.9E-05	1.6E-08
25	0.0254	0.0254	0.000110	0.000184	0.000368	1.5E-06	1.3E-09	2.5E-06	2.2E-09	5.0E-06	4.4E-09	4.5E-06	4.0E-09	7.6E-06	6.6E-09	1.5E-05	1.3E-08
26	0.0207	0.0207	0.000090	0.000150	0.000300	1.2E-06	1.1E-09	2.1E-06	1.8E-09	4.1E-06	3.6E-09	3.7E-06	3.2E-09	6.2E-06	5.4E-09	1.2E-05	1.1E-08
27	0.0168	0.0168	0.000073	0.000122	0.000244	1.0E-06	8.8E-10	1.7E-06	1.5E-09	3.3E-06	2.9E-09	3.0E-06	2.6E-09	5.0E-06	4.4E-09	1.0E-05	8.8E-09
28	0.0137	0.0137	0.000060	0.000100	0.000199	8.2E-07	7.2E-10	1.4E-06	1.2E-09	2.7E-06	2.4E-09	2.5E-06	2.1E-09	4.1E-06	3.6E-09	8.2E-06	7.2E-09
29	0.0112	0.0112	0.000049	0.000081	0.000162	6.7E-07	5.8E-10	1.1E-06	9.7E-10	2.2E-06	1.9E-09	2.0E-06	1.8E-09	3.3E-06	2.9E-09	6.7E-06	5.8E-09
30	0.0091	0.0091	0.000040	0.000066	0.000132	5.4E-07	4.8E-10	9.1E-07	7.9E-10	1.8E-06	1.6E-09	1.6E-06	1.4E-09	2.7E-06	2.4E-09	5.4E-06	4.8E-09

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Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Stem/Stalk Vegetable Crop Group (Asparagus)

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group	stem and stalk vegetables
Specific Crop(s) Considered	[illegible], asparagus, [illegible]
Application Rate of Crop (lb a.i./A)	1

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults):	1
Source:	ARTF Tobacco Harvesting Study (Groundboom Application), MRID 4500059-11
Slope of Semilog Regression:	-0.20492
[Initial] (ug/cm2):	4.258
Study Application Rate (lb ai/A):	2
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	300	140 to 290	Irrigation, scouting, thinning, weeding immature plants
Medium	500	364 to 1908	Irrigation and scouting mature plants
High	1000	364 to 1908	hand harvesting and pruning artichokes
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	4.2580	2.1290	0.072994	0.121657	0.243314	1172	703	352
1	3.4690	1.7345	0.059469	0.099116	0.198231	1439	863	432
2	2.8263	1.4131	0.048450	0.080751	0.161501	1766	1060	530
3	2.3026	1.1513	0.039473	0.065789	0.131577	2168	1301	650
4	1.8760	0.9380	0.032159	0.053599	0.107198	2661	1596	798
5	1.5284	0.7642	0.026201	0.043668	0.087335	3266	1959	980
6	1.2452	0.6226	0.021346	0.035577	0.071153	4008	2405	1202
7	1.0145	0.5072	0.017391	0.028985	0.057969	4920	2952	1476
8	0.8265	0.4132	0.014168	0.023614	0.047228	6039	3623	1812
9	0.6734	0.3367	0.011543	0.019239	0.038478	7412	4447	2224
10	0.5486	0.2743	0.009404	0.015674	0.031348	9098	5459	2729
11	0.4469	0.2235	0.007662	0.012770	0.025540	11167	6700	3350
12	0.3641	0.1821	0.006242	0.010404	0.020808	13707	8224	4112
13	0.2967	0.1483	0.005086	0.008476	0.016952	16824	10094	5047
14	0.2417	0.1208	0.004143	0.006906	0.013811	20650	12390	6195
15	0.1969	0.0985	0.003376	0.005626	0.011252	25346	15208	7604
16	0.1604	0.0802	0.002750	0.004584	0.009167	31111	18667	9333
17	0.1307	0.0654	0.002241	0.003734	0.007469	38186	22912	11456
18	0.1065	0.0532	0.001825	0.003042	0.006085	46871	28123	14061
19	0.0868	0.0434	0.001487	0.002479	0.004957	57531	34518	17259
20	0.0707	0.0353	0.001212	0.002019	0.004039	70615	42369	21184
21	0.0576	0.0288	0.000987	0.001645	0.003290	86674	52005	26002
22	0.0469	0.0235	0.000804	0.001340	0.002681	106386	63832	31916
23	0.0382	0.0191	0.000655	0.001092	0.002184	130581	78349	39174
24	0.0311	0.0156	0.000534	0.000890	0.001779	160279	96167	48084
25	0.0254	0.0127	0.000435	0.000725	0.001450	196731	118039	59019
26	0.0207	0.0103	0.000354	0.000591	0.001181	241473	144884	72442
27	0.0168	0.0084	0.000289	0.000481	0.000962	296390	177834	88917

28	0.0137	0.0069	0.000235	0.000392	0.000784	363797	218278	109139
29	0.0112	0.0056	0.000192	0.000319	0.000639	446535	267921	133960
30	0.0091	0.0046	0.000156	0.000260	0.000520	548088	328853	164427
m-Term (30 day average)	0.740	0.370	0.01269	0.02114	0.04229	6744	4047	2023

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Appendix C. Carbaryl Postapplication Cancer Risk Assessment For Stem/Stalk Vegetable Crop Group (Asparagus)

Occupational Post Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group	Stem and stalk Vegetables
Specific Crop(s) Considered	Artichoke, asparagus, pineapple
Application Rate of Crop (lb ai/A)	1

DFR Data Summary

Data Source (enter 1 if data available, 0 if defau	1
Source:	ARTF Tobacco Harvesting Study (Groundboom Application), MRID 4500059-11
Slope of Semilog Regression:	-0.20492
[Initial] (ug/cm2):	4.258
Study Application Rate (lb ai/A):	2
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	300	140 to 290	Irrigation, scouting, thinning, weeding immature plants
Medium	500	364 to 1908	Irrigation and scouting mature plants
High	1000	364 to 1908	hand harvesting and pruning artichokes
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	4.2580	2.1290	0.009270	0.015450	0.030901	1.3E-04	1.1E-07	2.1E-04	1.9E-07	4.2E-04	3.7E-07	3.8E-04	3.3E-07	6.3E-04	5.6E-07	1.3E-03	1.1E-06
1	3.4690	1.7345	0.007553	0.012588	0.025175	1.0E-04	9.1E-08	1.7E-04	1.5E-07	3.4E-04	3.0E-07	3.1E-04	2.7E-07	5.2E-04	4.5E-07	1.0E-03	9.1E-07
2	2.8263	1.4131	0.006153	0.010255	0.020511	8.4E-05	7.4E-08	1.4E-04	1.2E-07	2.8E-04	2.5E-07	2.5E-04	2.2E-07	4.2E-04	3.7E-07	8.4E-04	7.4E-07
3	2.3026	1.1513	0.005013	0.008355	0.016710	6.9E-05	6.0E-08	1.1E-04	1.0E-07	2.3E-04	2.0E-07	2.1E-04	1.8E-07	3.4E-04	3.0E-07	6.9E-04	6.0E-07
4	1.8760	0.9380	0.004084	0.006807	0.013614	5.6E-05	4.9E-08	9.3E-05	8.2E-08	1.9E-04	1.6E-07	1.7E-04	1.5E-07	2.8E-04	2.4E-07	5.6E-04	4.9E-07
5	1.5284	0.7642	0.003327	0.005546	0.011092	4.6E-05	4.0E-08	7.6E-05	6.6E-08	1.5E-04	1.3E-07	1.4E-04	1.2E-07	2.3E-04	2.0E-07	4.6E-04	4.0E-07
6	1.2452	0.6226	0.002711	0.004518	0.009036	3.7E-05	3.2E-08	6.2E-05	5.4E-08	1.2E-04	1.1E-07	1.1E-04	9.7E-08	1.9E-04	1.6E-07	3.7E-04	3.2E-07
7	1.0145	0.5072	0.002209	0.003681	0.007362	3.0E-05	2.6E-08	5.0E-05	4.4E-08	1.0E-04	8.8E-08	9.1E-05	7.9E-08	1.5E-04	1.3E-07	3.0E-04	2.6E-07
8	0.8265	0.4132	0.001799	0.002999	0.005998	2.5E-05	2.2E-08	4.1E-05	3.6E-08	8.2E-05	7.2E-08	7.4E-05	6.5E-08	1.2E-04	1.1E-07	2.5E-04	2.2E-07
9	0.6734	0.3367	0.001466	0.002443	0.004887	2.0E-05	1.8E-08	3.3E-05	2.9E-08	6.7E-05	5.9E-08	6.0E-05	5.3E-08	1.0E-04	8.8E-08	2.0E-04	1.8E-07
10	0.5486	0.2743	0.001194	0.001991	0.003981	1.6E-05	1.4E-08	2.7E-05	2.4E-08	5.5E-05	4.8E-08	4.9E-05	4.3E-08	8.2E-05	7.2E-08	1.6E-04	1.4E-07
11	0.4469	0.2235	0.000973	0.001622	0.003244	1.3E-05	1.2E-08	2.2E-05	1.9E-08	4.4E-05	3.9E-08	4.0E-05	3.5E-08	6.7E-05	5.8E-08	1.3E-04	1.2E-07
12	0.3641	0.1821	0.000793	0.001321	0.002643	1.1E-05	9.5E-09	1.8E-05	1.6E-08	3.6E-05	3.2E-08	3.3E-05	2.9E-08	5.4E-05	4.8E-08	1.1E-04	9.5E-08
13	0.2967	0.1483	0.000646	0.001076	0.002153	8.8E-06	7.7E-09	1.5E-05	1.3E-08	2.9E-05	2.6E-08	2.7E-05	2.3E-08	4.4E-05	3.9E-08	8.8E-05	7.7E-08
14	0.2417	0.1208	0.000526	0.000877	0.001754	7.2E-06	6.3E-09	1.2E-05	1.1E-08	2.4E-05	2.1E-08	2.2E-05	1.9E-08	3.6E-05	3.2E-08	7.2E-05	6.3E-08
15	0.1969	0.0985	0.000429	0.000715	0.001429	5.9E-06	5.1E-09	9.8E-06	8.6E-09	2.0E-05	1.7E-08	1.8E-05	1.5E-08	2.9E-05	2.6E-08	5.9E-05	5.1E-08
16	0.1604	0.0802	0.000349	0.000582	0.001164	4.8E-06	4.2E-09	8.0E-06	7.0E-09	1.6E-05	1.4E-08	1.4E-05	1.3E-08	2.4E-05	2.1E-08	4.8E-05	4.2E-08
17	0.1307	0.0654	0.000285	0.000474	0.000949	3.9E-06	3.4E-09	6.5E-06	5.7E-09	1.3E-05	1.1E-08	1.2E-05	1.0E-08	1.9E-05	1.7E-08	3.9E-05	3.4E-08
18	0.1065	0.0532	0.000232	0.000386	0.000773	3.2E-06	2.8E-09	5.3E-06	4.6E-09	1.1E-05	9.3E-09	9.5E-06	8.3E-09	1.6E-05	1.4E-08	3.2E-05	2.8E-08
19	0.0868	0.0434	0.000189	0.000315	0.000630	2.6E-06	2.3E-09	4.3E-06	3.8E-09	8.6E-06	7.5E-09	7.8E-06	6.8E-09	1.3E-05	1.1E-08	2.6E-05	2.3E-08
20	0.0707	0.0353	0.000154	0.000256	0.000513	2.1E-06	1.8E-09	3.5E-06	3.1E-09	7.0E-06	6.1E-09	6.3E-06	5.5E-09	1.1E-05	9.2E-09	2.1E-05	1.8E-08
21	0.0576	0.0288	0.000125	0.000209	0.000418	1.7E-06	1.5E-09	2.9E-06	2.5E-09	5.7E-06	5.0E-09	5.2E-06	4.5E-09	8.6E-06	7.5E-09	1.7E-05	1.5E-08
22	0.0469	0.0235	0.000102	0.000170	0.000340	1.4E-06	1.2E-09	2.3E-06	2.0E-09	4.7E-06	4.1E-09	4.2E-06	3.7E-09	7.0E-06	6.1E-09	1.4E-05	1.2E-08
23	0.0382	0.0191	0.000083	0.000139	0.000277	1.1E-06	1.0E-09	1.9E-06	1.7E-09	3.8E-06	3.3E-09	3.4E-06	3.0E-09	5.7E-06	5.0E-09	1.1E-05	1.0E-08
24	0.0311	0.0156	0.000068	0.000113	0.000226	9.3E-07	8.1E-10	1.5E-06	1.4E-09	3.1E-06	2.7E-09	2.8E-06	2.4E-09	4.6E-06	4.1E-09	9.3E-06	8.1E-09
25	0.0254	0.0127	0.000055	0.000092	0.000184	7.6E-07	6.6E-10	1.3E-06	1.1E-09	2.5E-06	2.2E-09	2.3E-06	2.0E-09	3.8E-06	3.3E-09	7.6E-06	6.6E-09
26	0.0207	0.0103	0.000045	0.000075	0.000150	6.2E-07	5.4E-10	1.0E-06	9.0E-10	2.1E-06	1.8E-09	1.8E-06	1.6E-09	3.1E-06	2.7E-09	6.2E-06	5.4E-09
27	0.0168	0.0084	0.000037	0.000061	0.000122	5.0E-07	4.4E-10	8.4E-07	7.3E-10	1.7E-06	1.5E-09	1.5E-06	1.3E-09	2.5E-06	2.2E-09	5.0E-06	4.4E-09

28	0.0137	0.0069	0.000030	0.000050	0.000100	4.1E-07	3.6E-10	6.8E-07	6.0E-10	1.4E-06	1.2E-09	1.2E-06	1.1E-09	2.0E-06	1.8E-09	4.1E-06	3.6E-09
29	0.0112	0.0056	0.000024	0.000041	0.000081	3.3E-07	2.9E-10	5.6E-07	4.9E-10	1.1E-06	9.7E-10	1.0E-06	8.8E-10	1.7E-06	1.5E-09	3.3E-06	2.9E-09
30	0.0091	0.0046	0.000020	0.000033	0.000066	2.7E-07	2.4E-10	4.5E-07	4.0E-10	9.1E-07	7.9E-10	8.1E-07	7.1E-10	1.4E-06	1.2E-09	2.7E-06	2.4E-09

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Appendix C: Carbaryl Postapplication Noncancer Risk Assessment For Vine Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	06/29/2007
Transfer Coefficient Group:	Vine/trellis
Specific Crop(s) Considered:	Pole beans, blackberries, highbush blueberries, grapes (various types), kiwi, raspberries
Application Rate of Crop (lb ai/A)	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if defaults)	1
Source	ARTF Cabbage Weeding Study (3 oz/broom Application), MRID 45191701
Slope of Semi-log Regression	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025
[Note: Enter application rate of crop if no data available in study rate cell.]	

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	500	197 to 2302	Hedging, irrigation, scouting, hand weeding, training/tying blueberries
Low	1000	197 to 2302	Scouting, training, tying
Medium	1100	TBD	Caneberry and highbush blueberry harvest
High	5000	TBD	hand harvest, leaf pulling, thinning, pruning, training/tying grapes
Very High	10000	TBD	grape girdling and cane turning

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)					MOES				
	Not Adjusted	Adjusted For Rate	Very Low	Low Exposure	Medium Exposure	High Exposure	Very High Exposure	Very Low	Low Exposure	Medium Exposure	High Exposure	Very High Exposure
0	2.4600	2.3768	0.13582	0.27164	0.29880	1.35818	2.71636	630	315	286	63	31
1	2.0339	1.9651	0.11229	0.22458	0.24704	1.12290	2.24580	762	381	346	76	38
2	1.6815	1.6247	0.09284	0.18568	0.20424	0.92838	1.85676	922	461	419	92	46
3	1.3902	1.3432	0.07676	0.15351	0.16886	0.76755	1.53511	1115	557	507	111	56
4	1.1494	1.1105	0.06346	0.12692	0.13961	0.63459	1.26918	1348	674	613	135	67
5	0.9503	0.9182	0.05247	0.10493	0.11543	0.52466	1.04932	1631	815	741	163	82
6	0.7857	0.7591	0.04338	0.08675	0.09543	0.43377	0.86754	1972	986	897	197	99
7	0.6496	0.6276	0.03586	0.07173	0.07890	0.35863	0.71726	2386	1193	1084	239	119
8	0.5370	0.5189	0.02965	0.05930	0.06523	0.29650	0.59301	2886	1443	1312	289	144
9	0.4440	0.4290	0.02451	0.04903	0.05393	0.24514	0.49028	3490	1745	1586	349	175
10	0.3671	0.3547	0.02027	0.04053	0.04459	0.20267	0.40535	4222	2111	1919	422	211
11	0.3035	0.2932	0.01676	0.03351	0.03686	0.16756	0.33513	5106	2553	2321	511	255
12	0.2509	0.2424	0.01385	0.02771	0.03048	0.13854	0.27707	6176	3088	2807	618	309
13	0.2075	0.2004	0.01145	0.02291	0.02520	0.11454	0.22908	7470	3735	3395	747	373
14	0.1715	0.1657	0.00947	0.01894	0.02083	0.09470	0.18939	9035	4518	4107	904	452
15	0.1418	0.1370	0.00783	0.01566	0.01722	0.07829	0.15658	10928	5464	4967	1093	546
16	0.1172	0.1133	0.00647	0.01295	0.01424	0.06473	0.12946	13218	6609	6008	1322	661
17	0.0969	0.0937	0.00535	0.01070	0.01177	0.05352	0.10703	15988	7994	7267	1599	799
18	0.0801	0.0774	0.00442	0.00885	0.00973	0.04425	0.08849	19337	9669	8790	1934	967
19	0.0663	0.0640	0.00366	0.00732	0.00805	0.03658	0.07316	23389	11695	10631	2339	1169
20	0.0548	0.0529	0.00302	0.00605	0.00665	0.03024	0.06049	28290	14145	12859	2829	1414
21	0.0453	0.0438	0.00250	0.00500	0.00550	0.02500	0.05001	34217	17109	15553	3422	1711
22	0.0374	0.0362	0.00207	0.00413	0.00455	0.02067	0.04135	41387	20693	18812	4139	2069
23	0.0310	0.0299	0.00171	0.00342	0.00376	0.01709	0.03418	50059	25029	22754	5006	2503
24	0.0256	0.0247	0.00141	0.00283	0.00311	0.01413	0.02826	60547	30274	27521	6055	3027
25	0.0212	0.0204	0.00117	0.00234	0.00257	0.01168	0.02337	73234	36617	33288	7323	3662
26	0.0175	0.0169	0.00097	0.00193	0.00213	0.00966	0.01932	88578	44289	40263	8858	4429
27	0.0145	0.0140	0.00080	0.00160	0.00176	0.00799	0.01597	107138	53569	48699	10714	5357
28	0.0120	0.0116	0.00066	0.00132	0.00145	0.00660	0.01321	129586	64793	58903	12959	6479
29	0.0099	0.0096	0.00055	0.00109	0.00120	0.00546	0.01092	156738	78369	71244	15674	7837
30	0.0082	0.0079	0.00045	0.00090	0.00099	0.00451	0.00903	189579	94789	86172	18956	9479
Int-Term (30 day average)	0.457	0.441	0.02522	0.05044	0.05549	0.25222	0.50443	3392	1696	1542	339	170

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Appendix C: Carbaryl Postapplication Cancer Risk Assessment For Vine Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1.8/9/001

Chemical:	Carbaryl
Reason:	TC Policy 3 1, Updated DFR, and Updated Hazard Data
Date:	06-29-2007
Transfer Coefficient Group:	Vine/bellis
Specific Crop(s) Considered	Pole beans, blackberries, highbush blueberries, grapes (various types), kiwi, raspberries
Applicator: Rate of Crop (LB/A):	[illegible]

DFR Data Summary

Data Source (enter 1 if data available, 0 if not available)	1
Source:	ARS 1 Cabbage Weeding Study (Reduced 50% Applications, Mn 1) [illegible]
[illegible]	[illegible]
[illegible] (ug/cm2):	746
[illegible]	[illegible]
[illegible]	[illegible]
Note: Enter application rate of zero if no data available in study, see cell 1	

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour) Used For RA	Range	Activities
Very Low	500	197 to 2302	Hedging, irrigation, scouting, hand weeding, training/tying blueberries
Low	1000	197 to 2302	Scouting, training, tying
Medium	1100	TBD	Caneberry and highbush blueberry harvest
High	5000	TBD	hand harvest, leaf pulling, thinning, pruning, training/tying grapes
Very High	10000	TBD	grape girdling and cane running

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)					RISKS FOR PRIVATE GROWERS										RISKS FOR PROFESSIONAL FARMWORKERS									
								Very Low Exp		Low Exposure		Medium Exposure		High Exposure		Very High Exposure		Very Low Exp		Low Exposure		Medium Exposure		High Exposure		Very High Exposure	
	Not Adjusted	Adjusted For Rate	Very Low	Low Exposure	Medium Exposure	High Exposure	Very High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.4600	2.3768	0.01725	0.03450	0.03795	0.17249	0.34498	2.4E-04	2.1E-07	4.7E-04	4.1E-07	5.2E-04	4.5E-07	2.4E-03	2.1E-06	4.7E-03	4.1E-06	7.1E-04	6.2E-07	1.4E-03	1.2E-06	1.6E-03	1.4E-06	7.1E-03	6.2E-06	1.4E-02	1.2E-05
1	2.0339	1.9551	0.01426	0.02852	0.03137	0.14261	0.28522	2.0E-04	1.7E-07	3.9E-04	3.4E-07	4.3E-04	3.8E-07	2.0E-03	1.7E-06	3.9E-03	3.4E-06	5.9E-04	5.1E-07	1.2E-03	1.0E-06	1.3E-03	1.1E-06	5.9E-03	5.1E-06	1.2E-02	1.0E-05
2	1.6815	1.6247	0.01179	0.02358	0.02594	0.11790	0.23581	1.6E-04	1.4E-07	3.2E-04	2.8E-07	3.6E-04	3.1E-07	1.6E-03	1.4E-06	3.2E-03	2.8E-06	4.8E-04	4.2E-07	9.7E-04	8.5E-07	1.1E-03	9.3E-07	4.8E-03	4.2E-06	9.7E-03	8.5E-06
3	1.3902	1.3432	0.00975	0.01950	0.02145	0.09749	0.19496	1.3E-04	1.2E-07	2.7E-04	2.3E-07	2.9E-04	2.6E-07	1.3E-03	1.2E-06	2.7E-03	2.3E-06	4.0E-04	3.5E-07	8.0E-04	7.0E-07	8.8E-04	7.7E-07	4.0E-03	3.5E-06	8.0E-03	7.0E-06
4	1.1494	1.1105	0.00805	0.01612	0.01773	0.08059	0.16119	1.1E-04	9.7E-08	2.2E-04	1.9E-07	2.4E-04	2.1E-07	1.1E-03	9.7E-07	2.2E-03	1.9E-06	3.3E-04	2.9E-07	6.6E-04	5.8E-07	7.3E-04	6.4E-07	3.3E-03	2.9E-06	6.6E-03	5.8E-06
5	0.9503	0.9182	0.00666	0.01333	0.01466	0.06663	0.13326	9.1E-05	8.0E-08	1.8E-04	1.6E-07	2.0E-04	1.8E-07	9.1E-04	8.0E-07	1.8E-03	1.6E-06	2.7E-04	2.4E-07	5.5E-04	4.8E-07	6.0E-04	5.3E-07	2.7E-03	2.4E-06	5.5E-03	4.8E-06
6	0.7857	0.7591	0.00551	0.01102	0.01212	0.05509	0.11018	7.5E-05	6.6E-08	1.5E-04	1.3E-07	1.7E-04	1.5E-07	7.5E-04	6.6E-07	1.5E-03	1.3E-06	2.3E-04	2.0E-07	4.5E-04	4.0E-07	5.0E-04	4.4E-07	2.3E-03	2.0E-06	4.5E-03	4.0E-06
7	0.6498	0.6276	0.00455	0.00911	0.01002	0.04555	0.09109	6.2E-05	5.5E-08	1.2E-04	1.1E-07	1.4E-04	1.2E-07	6.2E-04	5.5E-07	1.2E-03	1.1E-06	1.9E-04	1.6E-07	3.7E-04	3.2E-07	4.1E-04	3.5E-07	1.9E-03	1.6E-06	3.7E-03	3.2E-06
8	0.5370	0.5189	0.00377	0.00753	0.00828	0.03766	0.07531	5.2E-05	4.5E-08	1.0E-04	9.0E-08	1.1E-04	9.9E-08	5.2E-04	4.5E-07	1.0E-03	9.0E-07	1.5E-04	1.4E-07	3.1E-04	2.7E-07	3.4E-04	3.0E-07	1.5E-03	1.4E-06	3.1E-03	2.7E-06
9	0.4440	0.4290	0.00311	0.00623	0.00685	0.03113	0.06227	4.3E-05	3.7E-08	8.5E-05	7.5E-08	9.4E-05	8.3E-08	4.3E-04	3.7E-07	8.5E-04	7.5E-07	1.3E-04	1.1E-07	2.6E-04	2.2E-07	2.8E-04	2.5E-07	1.3E-03	1.1E-06	2.6E-03	2.2E-06
10	0.3671	0.3547	0.00257	0.00515	0.00566	0.02574	0.05148	3.5E-05	3.1E-08	7.1E-05	6.2E-08	7.8E-05	6.8E-08	3.5E-04	3.1E-07	7.1E-04	6.2E-07	1.1E-04	9.3E-08	2.1E-04	1.9E-07	2.3E-04	2.0E-07	1.1E-03	9.3E-07	2.1E-03	1.9E-06
11	0.3035	0.2932	0.00213	0.00426	0.00468	0.02128	0.04256	2.9E-05	2.6E-08	5.8E-05	5.1E-08	6.4E-05	5.6E-08	2.9E-04	2.6E-07	5.8E-04	5.1E-07	8.7E-05	7.7E-08	1.7E-04	1.5E-07	1.9E-04	1.7E-07	8.7E-04	7.7E-07	1.7E-03	1.5E-06
12	0.2509	0.2424	0.00176	0.00352	0.00387	0.01759	0.03519	2.4E-05	2.1E-08	4.8E-05	4.2E-08	5.3E-05	4.6E-08	2.4E-04	2.1E-07	4.8E-04	4.2E-07	7.2E-05	6.3E-08	1.4E-04	1.3E-07	1.6E-04	1.4E-07	7.2E-04	6.3E-07	1.4E-03	1.3E-06
13	0.2075	0.2004	0.00145	0.00291	0.00320	0.01455	0.02909	2.0E-05	1.7E-08	4.0E-05	3.5E-08	4.4E-05	3.8E-08	2.0E-04	1.7E-07	4.0E-04	3.5E-07	6.0E-05	5.2E-08	1.2E-04	1.0E-07	1.3E-04	1.2E-07	6.0E-04	5.2E-07	1.2E-03	1.0E-06
14	0.1715	0.1657	0.00120	0.00241	0.00265	0.01203	0.02405	1.6E-05	1.4E-08	3.3E-05	2.9E-08	3.6E-05	3.2E-08	1.6E-04	1.4E-07	3.3E-04	2.9E-07	4.9E-05	4.3E-08	9.9E-05	8.6E-08	1.1E-04	9.5E-08	4.9E-04	4.3E-07	9.9E-04	8.6E-07
15	0.1418	0.1370	0.00099	0.00199	0.00219	0.00994	0.01989	1.4E-05	1.2E-08	2.7E-05	2.4E-08	3.0E-05	2.6E-08	1.4E-04	1.2E-07	2.7E-04	2.4E-07	4.1E-05	3.6E-08	8.2E-05	7.2E-08	9.0E-05	7.9E-08	4.1E-04	3.6E-07	8.2E-04	7.2E-07
16	0.1172	0.1133	0.00082	0.00164	0.00181	0.00822	0.01644	1.1E-05	9.9E-09	2.3E-05	2.0E-08	2.5E-05	2.2E-08	1.1E-04	9.9E-08	2.3E-04	2.0E-07	3.4E-05	3.0E-08	6.8E-05	5.9E-08	7.4E-05	6.5E-08	3.4E-04	3.0E-07	6.8E-04	5.9E-07
17	0.0969	0.0937	0.00068	0.00136	0.00150	0.00680	0.01359	9.3E-06	8.1E-09	1.9E-05	1.6E-08	2.0E-05	1.8E-08	9.3E-05	8.1E-08	1.9E-04	1.6E-07	2.8E-05	2.4E-08	5.6E-05	4.9E-08	6.1E-05	5.4E-08	2.8E-04	2.4E-07	5.6E-04	4.9E-07
18	0.0801	0.0774	0.00056	0.00112	0.00124	0.00562	0.01124	7.7E-06	6.7E-09	1.6E-05	1.3E-08	1.7E-05	1.5E-08	7.7E-05	6.7E-08	1.6E-04	1.3E-07	2.3E-05	2.0E-08	4.6E-05	4.0E-08	5.1E-05	4.4E-08	2.3E-04	2.0E-07	4.6E-04	4.0E-07
19	0.0663	0.0640	0.00046	0.00093	0.00102	0.00465	0.00929	6.4E-06	5.6E-09	1.3E-05	1.1E-08	1.4E-05	1.2E-08	6.4E-05	5.5E-08	1.3E-04	1.1E-07	1.9E-05	1.7E-08	3.8E-05	3.3E-08	4.2E-05	3.7E-08	1.9E-04	1.7E-07	3.8E-04	3.3E-07
20	0.0548	0.0529	0.00038	0.00077	0.00085	0.00384	0.00768	5.3E-06	4.6E-09	1.1E-05	9.2E-09	1.2E-05	1.0E-08	5.3E-05	4.6E-08	1.1E-04	9.2E-08	1.6E-05	1.4E-08	3.2E-05	2.8E-08	3.5E-05	3.0E-08	1.6E-04	1.4E-07	3.2E-04	2.8E-07
21	0.0453	0.0436	0.00032	0.00064	0.00070	0.00318	0.00635	4.4E-06	3.8E-09	8.7E-06	7.6E-09	9.6E-06	8.4E-09	4.4E-05	3.8E-08	8.7E-05	7.6E-08	1.3E-05	1.1E-08	2.6E-05	2.3E-08	2.9E-05	2.5E-08	1.3E-04	1.1E-07	2.6E-04	2.3E-07
22	0.0374	0.0362	0.00026	0.00053	0.00058	0.00263	0.00525	3.6E-06	3.1E-09	7.2E-06	6.3E-09	7.9E-06	6.9E-09	3.6E-05	3.1E-08	7.2E-05	6.3E-08	1.1E-05	9.4E-09	2.2E-05	1.9E-08	2.4E-05	2.1E-08	1.1E-04	9.4E-08	2.2E-04	1.9E-07
23	0.0317	0.0305	0.00022	0.00043	0.00048	0.00221	0.00434	3.0E-06	2.6E-09	5.9E-06	5.2E-09	6.5E-06	5.7E-09	3.0E-05	2.6E-08	5.9E-05	5.2E-08	8.9E-06	7.8E-09	1.8E-05	1.6E-08	2.0E-05	1.7E-08	8.9E-05	7.8E-08	1.8E-04	1.6E-07
24	0.0268	0.0247	0.00018	0.00036	0.00039	0.00179	0.00358	2.5E-06	2.2E-09	4.9E-06	4.3E-09	5.4E-06	4.7E-09	2.5E-05	2.2E-08	4.9E-05	4.3E-08	7.4E-06	6.5E-09	1.5E-05	1.3E-08	1.6E-05	1.4E-08	7.4E-05	6.5E-08	1.5E-04	1.3E-07
25	0.0212	0.0204	0.00015	0.00030	0.00033	0.00148	0.00297	2.0E-06	1.8E-09	4.1E-06	3.6E-09	4.5E-06	3.9E-09	2.0E-05	1.8E-08	4.1E-05	3.6E-08	6.1E-06	5.3E-09	1.2E-05	1.1E-08	1.3E-05	1.2E-08	6.1E-05	5.3E-08	1.2E-04	1.1E-07
26	0.0175	0.0169	0.00012	0.00025	0.00027	0.00123	0.00245	1.7E-06	1.5E-09	3.4E-06	2.9E-09	3.7E-06	3.2E-09	1.7E-05	1.5E-08	3.4E-05	2.9E-08	5.0E-06	4.4E-09	1.0E-05	8.8E-09	1.1E-05	9.7E-09	5.0E-05	4.4E-08	1.0E-04	8.8E-08
27	0.0145	0.0140	0.00010	0.00020	0.00022	0.00101	0.00203	1.4E-06	1.2E-09	2.8E-06	2.4E-09	3.1E-06	2.7E-09	1.4E-05	1.2E-08	2.8E-05	2.4E-08	4.2E-06	3.6E-09	8.3E-06	7.3E-09	9.2E-06	8.0E-09	4.2E-05	3.6E-08	8.3E-05	7.3E-08
28	0.0120	0.0116	0.00008	0.00017	0.00018	0.00084	0.00168	1.1E-06	1.0E-09	2.3E-06	2.0E-09	2.5E-06	2.2E-09	1.1E-05	1.0E-08	2.3E-05	2.0E-08	3.4E-06	3.0E-09	6.9E-06	6.0E-09	7.6E-06	6.6E-09	3.4E-05	3.0E-08	6.9E-05	6.0E-08
29	0.0099	0.0096	0.00007	0.00014	0.00015	0.00069	0.00139	9.5E-07	8.3E-10	1.9E-06	1.7E-09	2.1E-06	1.8E-09	9.5E-06	8.3E-09	1.9E-05	1.7E-08	2.8E-06	2.5E-09	5.7E-06	5.0E-09	6.3E-06	5.5E-09	2.8E-05	2.5E-08	5.7E-05	5.0E-08
30	0.0082	0.0079	0.00006	0.00011	0.00013	0.00057	0.00115	7.8E-07	6.8E-10	1.6E-06	1.4E-09	1.7E-06	1.5E-09	7.9E-06	6.9E-09	1.6E-05	1.4E-08	2.4E-06	2.1E-09	4.7E-06	4.1E-09	5.2E-06	4.5E-09	2.4E-05	2.1E-08	4.7E-05	4.1E-08

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Appendix C6: Carbaryl Occupational Postapplication Noncancer Risk Assessment For The Nursery and Ornamental Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Nursery and Ornamentals
Specific Crop(s) Considered:	Various (B&B, Containerized, Plugs, etc.)
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if data N/A):	1
Source:	AHTF Cabbage Weeding Study (Groundboom Application), MRID 45191701
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	110	ND	Hand Pruning
Medium	175	ND	Hand Pinching
High	400	ND	Hand Harvesting
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		DOSE (mg/kg/day)			MOES		
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	Low Exposure	Medium Exposure	High Exposure
0	2.460	2.377	0.02988	0.04754	0.10865	2863.5	1799.9	787.5
1	2.034	1.965	0.02470	0.03930	0.08983	3463.4	2177.0	952.4
2	1.682	1.625	0.02042	0.03249	0.07427	4189.1	2633.2	1152.0
3	1.390	1.343	0.01689	0.02686	0.06140	5066.9	3184.9	1393.4
4	1.149	1.111	0.01396	0.02221	0.05077	6128.5	3852.2	1685.3
5	0.950	0.918	0.01154	0.01836	0.04197	7412.6	4659.3	2038.5
6	0.786	0.759	0.00954	0.01518	0.03470	8965.7	5635.6	2465.6
7	0.650	0.628	0.00789	0.01255	0.02869	10844.3	6816.4	2982.2
8	0.537	0.519	0.00652	0.01038	0.02372	13116.5	8244.7	3607.0
9	0.444	0.429	0.00539	0.00858	0.01961	15864.8	9972.1	4362.8
10	0.367	0.355	0.00446	0.00709	0.01621	19188.9	12061.6	5276.9
11	0.304	0.293	0.00369	0.00586	0.01341	23209.5	14588.8	6382.6
12	0.251	0.242	0.00305	0.00485	0.01108	28072.5	17645.6	7719.9
13	0.207	0.200	0.00252	0.00401	0.00916	33954.5	21342.8	9337.5
14	0.172	0.166	0.00208	0.00331	0.00758	41068.9	25814.7	11293.9
15	0.142	0.137	0.00172	0.00274	0.00626	49674.0	31223.6	13660.3
16	0.117	0.113	0.00142	0.00227	0.00518	60082.1	37765.9	16522.6
17	0.097	0.094	0.00118	0.00187	0.00428	72670.9	45678.9	19984.5
18	0.080	0.077	0.00097	0.00155	0.00354	87897.5	55249.9	24171.8
19	0.066	0.064	0.00080	0.00128	0.00293	106314.5	66826.2	29236.5
20	0.055	0.053	0.00067	0.00106	0.00242	128590.3	80828.2	35362.3
21	0.045	0.044	0.00055	0.00088	0.00200	155533.5	97763.9	42771.7
22	0.037	0.036	0.00045	0.00072	0.00165	188122.1	118248.2	51733.6
23	0.031	0.030	0.00038	0.00060	0.00137	227538.9	143024.5	62573.2
24	0.026	0.025	0.00031	0.00049	0.00113	275214.6	172992.1	75684.0
25	0.021	0.020	0.00026	0.00041	0.00093	332879.7	209238.7	91541.9
26	0.017	0.017	0.00021	0.00034	0.00077	402627.3	253080.0	110722.5
27	0.014	0.014	0.00018	0.00028	0.00064	486988.9	306107.3	133921.9
28	0.012	0.012	0.00015	0.00023	0.00053	589026.6	370245.3	161982.3
29	0.010	0.010	0.00012	0.00019	0.00044	712444.0	447821.9	195922.1
30	0.008	0.008	0.00010	0.00016	0.00036	861720.8	541653.1	236973.2
Int-Term (30 day average)	0.457	0.441	0.00555	0.00883	0.02018	15420	9692	4240
Chronic (30 day average)	0.457	0.441	0.00070	0.00112	0.00256	121414.3	76317.6	33388.9

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Appendix C: Carbaryl Occupational Postapplication Cancer Risk Assessment For The Nursery and Ornamental Crop Group

Occupational Post-Application Risk Assessment Calculator Version 1 (8/9/00)

Chemical:	Carbaryl
Reason:	TC Policy 3.1, Updated DFR, and Updated Hazard Data
Date:	39262
Transfer Coefficient Group:	Nursery and Ornamentals
Specific Crop(s) Considered:	Various (B&B, Containerized, Plugs, etc.)
Application Rate of Crop (lb ai/A):	2

DFR Data Summary

Data Source (enter 1 if data available, 0 if data not available):	1
Source:	AATF Cabbage Weeding Study (Greenhouse Application), MRID 45191701
Slope of Semilog Regression:	-0.19023
[Initial] (ug/cm2):	2.46
Study Application Rate (lb ai/A):	2.07
Limit of Quantification (ug/cm2):	0.0025

[Note: Enter application rate of crop if no data available in study rate cell.]

Exposure Inputs Summary

Exposure Potential	Transfer Coefficients (cm2/hour)		Activities
	Used For RA	Range	
Very Low	N/A	N/A	N/A
Low	110	ND	Hand Pruning
Medium	175	ND	Hand Pinching
High	400	ND	Hand Harvesting
Very High	N/A	N/A	N/A

DAT	DFR LEVELS (ug/cm2)		AVERAGE DAILY DOSE (ADD) (mg/kg/day)			RISKS FOR PRIVATE GROWERS						RISKS FOR PROFESSIONAL FARMWORKERS					
						Low Exposure		Medium Exposure		High Exposure		Low Exposure		Medium Exposure		High Exposure	
	Not Adjusted	Adjusted For Rate	Low Exposure	Medium Exposure	High Exposure	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk	LADD	Cancer Risk
0	2.460	2.377	0.0038	0.0060	0.0138	5.2E-05	4.5E-08	8.3E-05	7.2E-08	1.9E-04	1.7E-07	1.6E-04	1.4E-07	2.5E-04	2.2E-07	5.7E-04	5.0E-07
1	2.034	1.965	0.0031	0.0050	0.0114	4.3E-05	3.8E-08	6.8E-05	6.0E-08	1.6E-04	1.4E-07	1.3E-04	1.1E-07	2.1E-04	1.8E-07	4.7E-04	4.1E-07
2	1.682	1.625	0.0026	0.0041	0.0094	3.6E-05	3.1E-08	5.7E-05	4.9E-08	1.3E-04	1.1E-07	1.1E-04	9.3E-08	1.7E-04	1.5E-07	3.9E-04	3.4E-07
3	1.390	1.343	0.0021	0.0034	0.0078	2.9E-05	2.6E-08	4.7E-05	4.1E-08	1.1E-04	9.3E-08	8.8E-05	7.7E-08	1.4E-04	1.2E-07	3.2E-04	2.8E-07
4	1.149	1.111	0.0018	0.0028	0.0064	2.4E-05	2.1E-08	3.9E-05	3.4E-08	8.8E-05	7.7E-08	7.3E-05	6.4E-08	1.2E-04	1.0E-07	2.6E-04	2.3E-07
5	0.950	0.918	0.0015	0.0023	0.0053	2.0E-05	1.8E-08	3.2E-05	2.8E-08	7.3E-05	6.4E-08	6.0E-05	5.3E-08	9.6E-05	8.4E-08	2.2E-04	1.9E-07
6	0.786	0.759	0.0012	0.0019	0.0044	1.7E-05	1.5E-08	2.6E-05	2.3E-08	6.0E-05	5.3E-08	5.0E-05	4.4E-08	7.9E-05	6.9E-08	1.8E-04	1.6E-07
7	0.650	0.628	0.0010	0.0016	0.0036	1.4E-05	1.2E-08	2.2E-05	1.9E-08	5.0E-05	4.4E-08	4.1E-05	3.6E-08	6.6E-05	5.7E-08	1.5E-04	1.3E-07
8	0.537	0.519	0.0008	0.0013	0.0030	1.1E-05	9.9E-09	1.8E-05	1.6E-08	4.1E-05	3.6E-08	3.4E-05	3.0E-08	5.4E-05	4.7E-08	1.2E-04	1.1E-07
9	0.444	0.429	0.0007	0.0011	0.0025	9.4E-06	8.2E-09	1.5E-05	1.3E-08	3.4E-05	3.0E-08	2.8E-05	2.5E-08	4.5E-05	3.9E-08	1.0E-04	9.0E-08
10	0.367	0.355	0.0006	0.0009	0.0021	7.8E-06	6.8E-09	1.2E-05	1.1E-08	2.8E-05	2.5E-08	2.3E-05	2.0E-08	3.7E-05	3.2E-08	8.5E-05	7.4E-08
11	0.304	0.293	0.0005	0.0007	0.0017	6.4E-06	5.6E-09	1.0E-05	8.9E-09	2.3E-05	2.0E-08	1.9E-05	1.7E-08	3.1E-05	2.7E-08	7.0E-05	6.1E-08
12	0.251	0.242	0.0004	0.0006	0.0014	5.3E-06	4.6E-09	8.4E-06	7.4E-09	1.9E-05	1.7E-08	1.6E-05	1.4E-08	2.5E-05	2.2E-08	5.8E-05	5.1E-08
13	0.207	0.200	0.0003	0.0005	0.0012	4.4E-06	3.8E-09	7.0E-06	6.1E-09	1.6E-05	1.4E-08	1.3E-05	1.2E-08	2.1E-05	1.8E-08	4.8E-05	4.2E-08
14	0.172	0.166	0.0003	0.0004	0.0010	3.6E-06	3.2E-09	5.8E-06	5.0E-09	1.3E-05	1.2E-08	1.1E-05	9.5E-09	1.7E-05	1.5E-08	4.0E-05	3.5E-08
15	0.142	0.137	0.0002	0.0003	0.0008	3.0E-06	2.6E-09	4.8E-06	4.2E-09	1.1E-05	9.5E-09	9.0E-06	7.9E-09	1.4E-05	1.3E-08	3.3E-05	2.9E-08
16	0.117	0.113	0.0002	0.0003	0.0007	2.5E-06	2.2E-09	3.9E-06	3.4E-09	9.0E-06	7.9E-09	7.4E-06	6.5E-09	1.2E-05	1.0E-08	2.7E-05	2.4E-08
17	0.097	0.094	0.0001	0.0002	0.0005	2.0E-06	1.8E-09	3.3E-06	2.9E-09	7.4E-06	6.5E-09	6.1E-06	5.4E-09	9.8E-06	8.6E-09	2.2E-05	2.0E-08
18	0.080	0.077	0.0001	0.0002	0.0004	1.7E-06	1.5E-09	2.7E-06	2.4E-09	6.2E-06	5.4E-09	5.1E-06	4.4E-09	8.1E-06	7.1E-09	1.8E-05	1.6E-08
19	0.066	0.064	0.0001	0.0002	0.0004	1.4E-06	1.2E-09	2.2E-06	1.9E-09	5.1E-06	4.5E-09	4.2E-06	3.7E-09	6.7E-06	5.8E-09	1.5E-05	1.3E-08
20	0.055	0.053	0.0001	0.0001	0.0003	1.2E-06	1.0E-09	1.8E-06	1.6E-09	4.2E-06	3.7E-09	3.5E-06	3.0E-09	5.5E-06	4.8E-09	1.3E-05	1.1E-08
21	0.045	0.044	0.0001	0.0001	0.0003	9.6E-07	8.4E-10	1.5E-06	1.3E-09	3.5E-06	3.0E-09	2.9E-06	2.5E-09	4.6E-06	4.0E-09	1.0E-05	9.1E-09
22	0.037	0.036	0.0001	0.0001	0.0002	7.9E-07	6.9E-10	1.3E-06	1.1E-09	2.9E-06	2.5E-09	2.4E-06	2.1E-09	3.8E-06	3.3E-09	8.6E-06	7.6E-09
23	0.031	0.030	0.00005	0.00008	0.00017	6.5E-07	5.7E-10	1.0E-06	9.1E-10	2.4E-06	2.1E-09	2.0E-06	1.7E-09	3.1E-06	2.7E-09	7.1E-06	6.2E-09
24	0.026	0.025	0.00004	0.00006	0.00014	5.4E-07	4.7E-10	8.6E-07	7.5E-10	2.0E-06	1.7E-09	1.6E-06	1.4E-09	2.6E-06	2.3E-09	5.9E-06	5.2E-09
25	0.021	0.020	0.00003	0.00005	0.00012	4.5E-07	3.9E-10	7.1E-07	6.2E-10	1.6E-06	1.4E-09	1.3E-06	1.2E-09	2.1E-06	1.9E-09	4.9E-06	4.3E-09
26	0.017	0.017	0.00003	0.00004	0.00010	3.7E-07	3.2E-10	5.9E-07	5.1E-10	1.3E-06	1.2E-09	1.1E-06	9.7E-10	1.8E-06	1.5E-09	4.0E-06	3.5E-09
27	0.014	0.014	0.00002	0.00004	0.00008	3.1E-07	2.7E-10	4.9E-07	4.3E-10	1.1E-06	9.7E-10	9.2E-07	8.0E-10	1.5E-06	1.3E-09	3.3E-06	2.9E-09
28	0.012	0.012	0.00002	0.00003	0.00007	2.5E-07	2.2E-10	4.0E-07	3.5E-10	9.2E-07	8.0E-10	7.6E-07	6.6E-10	1.2E-06	1.1E-09	2.8E-06	2.4E-09
29	0.010	0.010	0.00002	0.00002	0.00006	2.1E-07	1.8E-10	3.3E-07	2.9E-10	7.6E-07	6.6E-10	6.3E-07	5.5E-10	1.0E-06	8.7E-10	2.3E-06	2.0E-09
30	0.008	0.008	0.00001	0.00002	0.00005	1.7E-07	1.5E-10	2.7E-07	2.4E-10	6.3E-07	5.5E-10	5.2E-07	4.5E-10	8.2E-07	7.2E-10	1.9E-06	1.6E-09

D334881
Appendix D: Tobacco DFR Data For Carbaryl From MRID 4500059-11

ARTF Tobacco Harvesting Study
ARTF Report ARF024
Date: July 20, 1999
EPA MRID 4500059-11
Application Method: Groundboom
LOQ (ug/sample): 1
All values are post 2 application.
All water on plot was from precipitation.

Application Rate (lb ai/A): 2
Number of Applications: 2, 8 days apart
Gallons/Acre: 20
DFR Final Volume (mL): 200
Field Recovery (Avg% (CV)): 114.3 (6.1)
Total Surface Area (cm2) 400
LOQ (ug/cm2): 0.0025
Values not adjusted for field recovery.

Study Day	Total (ug)/Sample Adjusted Values				Residues (ug/cm2) Adjusted Values					Weather Summary (inches water)	
	Rep 1	Rep 2	Rep 3	Avg	Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Precip	Irrigation
0	1650.0	1600.0	1860.0	1703.3	4.1250	4.0000	4.6500	4.2583	1.4489	0	0
1	1460.0	1940.0	2620.0	2006.7	3.6500	4.8500	6.5500	5.0167	1.6128	0	0
2	1680.0	2090.0	1910.0	1893.3	4.2000	5.2250	4.7750	4.7333	1.5546	0.08	0
3	1740.0	1960.0	1740.0	1813.3	4.3500	4.9000	4.3500	4.5333	1.5115	0	0
4	923.0	1220.0	1470.0	1204.3	2.3075	3.0500	3.6750	3.0108	1.1022	0	0
5	474.0	702.0	561.0	579.0	1.1850	1.7550	1.4025	1.4475	0.3698	0	0
6	778.0	957.0	821.0	852.0	1.9450	2.3925	2.0525	2.1300	0.7561	0	0
7	408.0	479.0	405.0	430.7	1.0200	1.1975	1.0125	1.0767	0.0739	0	0
14	20.0	12.9	14.6	15.8	0.0500	0.0323	0.0365	0.0396	-3.2293	0.63	0
21	5.8	35.8	11.2	17.6	0.0145	0.0895	0.0280	0.0440	-3.1236	0.76	0
28	3.7	4.0	9.9	5.9	0.0093	0.0100	0.0248	0.0147	-4.2222	0	0
35	4.8	2.8	3.9	3.8	0.0120	0.0070	0.0098	0.0096	-4.6477	1.37	0

Regression Output: Ln DFR vs. Time

Constant	1.5856023
Std Err of Y Est	0.7524812
R Squared	0.9156125
No. of Observations	12
Degrees of Freedom	10
Corr. Coefficient	0.9568764
X Coefficient(s)	-0.204923
Std Err of Coef.	0.0196731
T 1/2 (days)	3.4

D334881
Appendix D: Olive DFR Data For Carbaryl From MRID 451751-02

ARTF Olive Pruning Study
ARTF Report ARF033
Date: February 8, 2000
EPA MRID 451751-02
Application Method: Airblast
LOQ (ug/sample): 1
All water on plot was from precipitation.

Application Rate (lb ai/A): 7.65
Number of Applications: 1
Gallons/Acre: 758
DFR Final Volume (mL): 200
Field Recovery (Avg% (CV)): 109.7 (4.8)
Total Surface Area (cm2): 400
LOQ (ug/cm2): 0.0025
Values not adjusted for field recovery.

Study Day	Total (ug)/Sample Adjusted Values				Residues (ug/cm2) Adjusted Values					Weather Summary (inches water)	
	Rep 1	Rep 2	Rep 3	Avg	Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Precip	Irrigation
0	1380.0	1090.0	1210.0	1226.7	3.4500	2.7250	3.0250	3.0667	1.1206	0	0
1	1100.0	911.0	1100.0	1037.0	2.7500	2.2775	2.7500	2.5925	0.9526	0	0
2	1080.0	964.0	982.0	1008.7	2.7000	2.4100	2.4550	2.5217	0.9249	0	0
3	1670.0	1170.0	1060.0	1300.0	4.1750	2.9250	2.6500	3.2500	1.1787	0	0
4	1130.0	946.0	1110.0	1062.0	2.8250	2.3650	2.7750	2.6550	0.9764	trace	0
5	938.0	771.0	738.0	815.7	2.3450	1.9275	1.8450	2.0392	0.7125	0	0
6	1020.0	902.0	871.0	931.0	2.5500	2.2550	2.1775	2.3275	0.8448	0	0
7	1110.0	938.0	794.0	947.3	2.7750	2.3450	1.9850	2.3683	0.8622	0	0
10	461.0	401.0	405.0	422.3	1.1525	1.0025	1.0125	1.0558	0.0543	0.5	0
14	372.0	303.0	265.0	313.3	0.9300	0.7575	0.6625	0.7833	-0.2442	0.25	0

Regression Output: Ln DFR vs. Time

Constant	1.2518672
Std Err of Y Est	0.2008262
R Squared	0.8335143
No. of Observations	10
Degrees of Freedom	8
Corr. Coefficient	0.91297
X Coefficient(s)	-0.098765
Std Err of Coef.	0.015606
T 1/2 (days)	7.0

D334881
Appendix D: Sunflower DFR Data For Carbaryl From MRID 450059-09

ARTF Sunflower Scouting Study
ARTF Report ARF022
Date: September 28, 1999
EPA MRID 450059-09
Application Method: FW Aircraft
LOQ (ug/sample): 1
All values are post 2 application
All water on plot was from precipitation.

Application Rate (lb ai/A): 1.5
Number of Applications: 2, 7 days apart
Gallons/Acre: 2
DFR Final Volume (mL): 200
Field Recovery (Avg% (CV)): 93.1 (9.1)
Total Surface Area (cm2): 400
LOQ (ug/cm2): 0.0025
Values not adjusted for field recovery.

Study Day	Total (ug)/Sample Adjusted Values				Residues (ug/cm2) Adjusted Values					Weather Summary (inches water)	
	Rep 1	Rep 2	Rep 3	Avg	Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Precip	Irrigation
0	2010.0	2460.0	1950.0	2140.0	5.0250	6.1500	4.8750	5.3500	1.6771	0	0
1	1700.0	2060.0	2030.0	1930.0	4.2500	5.1500	5.0750	4.8250	1.5738	0	0
2	1660.0	1180.0	1520.0	1453.3	4.1500	2.9500	3.8000	3.6333	1.2902	0	0
3	1570.0	1320.0	1930.0	1606.7	3.9250	3.3000	4.8250	4.0167	1.3905	0	0
4	1990.0	1850.0	1670.0	1836.7	4.9750	4.6250	4.1750	4.5917	1.5242	0	0
5	962.0	818.0	1240.0	1006.7	2.4050	2.0450	3.1000	2.5167	0.9229	0	0
6	1230.0	1230.0	1280.0	1246.7	3.0750	3.0750	3.2000	3.1167	1.1368	0.03	0
7	1130.0	852.0	1150.0	1044.0	2.8250	2.1300	2.8750	2.6100	0.9594	0	0
14	557.0	465.0	432.0	484.7	1.3925	1.1625	1.0800	1.2117	0.1920	0	0
28	80.4	40.2	19.6	46.7	0.2010	0.1005	0.0490	0.1168	-2.1470	1.32	0

Regression Output: Ln DFR vs. Time

Constant	1.7907974
Std Err of Y Est	0.2033726
R Squared	0.9716294
No. of Observations	10
Degrees of Freedom	8
Corr. Coefficient	0.9857126
X Coefficient(s)	-0.134117
Std Err of Coef.	0.0081026
T 1/2 (days)	5.2

D334881
Appendix D: Cabbage DFR Data For Carbaryl From MRID 451917-01

ARTF Cabbage Weeding Study
ARTF Report ARF037
Date: May 30, 2000
EPA MRID 451917-01
Application Method: Groundboom
LOQ (ug/sample): 1
All values are post 2 application.
All irrigation was in-furrow.

Application Rate (lb ai/A): 2.07
Number of Applications: 2, 7 days apart
Gallons/Acre: 31.1
DFR Final Volume (mL): 200
Field Recovery (Avg% (CV)): 97.2 (8.3)
Total Surface Area (cm2): 400
LOQ (ug/cm2): 0.0025
Values not adjusted for field recovery.

Study Day	Total (ug)/Sample Adjusted Values				Residues (ug/cm2) Adjusted Values					Weather Summary (inches water)	
	Rep 1	Rep 2	Rep 3	Avg	Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Precip	Irrigation
0	1700	504	749	984.3	4.2500	1.2600	1.8725	2.4608	0.9005	0	0
1	1020	1000	887	969.0	2.5500	2.5000	2.2175	2.4225	0.8848	0	0
2	673	893	728	764.7	1.6825	2.2325	1.8200	1.9117	0.6480	0	0
3	382	628	840	616.7	0.9550	1.5700	2.1000	1.5417	0.4329	0	0
4	403	215	370	329.3	1.0075	0.5375	0.9250	0.8233	-0.1944	0	3
5	1510	339	390	746.3	3.7750	0.8475	0.9750	1.8658	0.6237	0	0
7	323	657	599	526.3	0.8075	1.6425	1.4975	1.3158	0.2745	0	0
14	19.9	26.9	14	20.3	0.0498	0.0673	0.0350	0.0507	-2.9825	0	3
21	8.5	Lost	10.9	9.7	0.0213	#VALUE!	0.0273	0.0243	-3.7193	0	3
28	15.6	34.9	7.4	19.3	0.0390	0.0873	0.0185	0.0483	-3.0314	0	3
35	0.5	0.5	2	1.0	0.0013	0.0013	0.0050	0.0025	-5.9915	0	0

Regression Output: Ln DFR vs. Time

Constant	0.9702424
Std Err of Y Est	0.7413272
R Squared	0.9133601
No. of Observations	11
Degrees of Freedom	9
Corr. Coefficient	0.9556988
X Coefficient(s)	-0.190228
Std Err of Coef.	0.0195295
T 1/2 (days)	3.6

D334881
Appendix D: Chrysanthemum DFR Data For Carbaryl From MRID 468928-01 Georgia

IR4 DFR Study Chrysanthemums		Application Rate (lb ai/A):	1.02
Treated with Sevin SL		Number of Applications	2, 7 days apart
Date: June 5, 2006		Gallons/Acre:	51
EPA MRID 468928-01		DFR Final Volume (mL):	200
Application Method:	Boom Sprayer (Tractor)	Field Recovery (Avg% (CV)):	95.7%(13.7)
LOQ (ug/sample):	0.01	Total Surface Area (cm2):	294-320 (whole leaf sampled)
All values are post 2 application.		LOQ (ug/cm2):	0.003
All water on plot was from precipitation.		Values not adjusted for field recovery.	

Study Day	Total (ug)/Sample Adjusted Values				Residues (ug/cm2) Adjusted Values					Weather Summary (inches water)	
	Rep 1	Rep 2	Rep 3	Avg	Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Precip	Irrigation (drip)
0	1.111	1.019	1.652	1.3	0.6810	0.6360	1.0300	0.7823	-0.2455	0	0
1	0.109	0.040	0.099	0.1	0.0690	0.0250	0.0620	0.0520	-2.9565	0.01	0
2	0.018	0.106	0.084	0.1	0.0120	0.0710	0.0550	0.0460	-3.0791	1.47	0
3	0.016	0.026	0.030	0.0	0.0110	0.0170	0.0200	0.0160	-4.1352	0.01	0
5	0.033	0.032	0.078	0.0	0.0220	0.0210	0.0490	0.0307	-3.4846	0.01	0
7	0.022	0.010	0.010	0.0	0.0150	0.0030	0.0030	0.0070	-4.9618	1.4	0
10	0.010	0.010	0.013	0.0	0.0030	0.0030	0.0090	0.0050	-5.2983	0.16	0
14	0.010	0.010	0.010	0.0	0.0040	0.0030	0.0070	0.0047	-5.3673	0.83	0
21	ND	ND	ND								
28	Not Analyzed										
35	Not Analyzed										

Regression Output: Ln DFR vs. Time

Constant	-2.3493
R Squared	0.5384
No. of Observations	24
Degrees of Freedom	
Corr. Coefficient	0.733757453
X Coefficient(s)	-0.2438
T 1/2 (days)	2.8

D334881
Appendix D: Chrysanthemum DFR Data For Carbaryl From MRID 468928-01 - Washington

IR4 DFR Study Chrysanthemums		Application Rate (lb ai/A):	1.06
Treated with Sevin SL		Number of Applications:	2, 7 days apart
Date: June 5, 2006		Gallons/Acre:	52
EPA MRID 468928-01		DFR Final Volume (mL):	200
Application Method:	Boom Sprayer (ATV)	Field Recovery (Avg% (CV)):	70.4% (corrected)
LOQ (ug/sample):	0.01	Total Surface Area (cm2):	348-426 (whole leaf sampled)
All values are post 2 application.		LOQ (ug/cm2):	0.003
All water on plot was from precipitation.		Values not adjusted for field recovery.	

Study Day	Total (ug)/Sample Adjusted Values				Residues (ug/cm2) Adjusted Values					Weather Summary (inches water)		
	Rep 1	Rep 2	Rep 3	Avg	Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Precip	Irrigation (drip)	
0	3.000	6.430	1.880	3.8	1.5703	3.3416	0.9250	1.9456	0.6656	0	0	1.9453
1	5.230	6.370	6.850	6.2	2.9800	3.4000	3.6300	3.3367	1.2050	0	0	3.3401
2	7.270	9.310	9.030	8.5	3.8200	4.6300	4.5800	4.3433	1.4686	0	0	4.3426
3	7.950	7.380	6.790	7.4	4.1300	3.7800	3.4700	3.7933	1.3332	0	0	3.7945
5	7.840	6.260	8.670	7.6	4.0300	3.2600	4.2900	3.8600	1.3507	0.01	0	3.8613
7	6.810	7.030	7.030	7.0	3.3700	3.6300	3.4600	3.4867	1.2489	0	0	3.4894
10	2.280	2.170	1.920	2.1	1.1200	1.0800	0.9600	1.0533	0.0520	0.15	0	1.0523
14	1.660	1.390	1.940	1.7	0.7770	0.7570	1.1200	0.8847	-0.1225	0	0	0.8834
21	1.340	1.300	0.890	1.2	0.7490	0.7250	0.5110	0.6617	-0.4130	0	0	0.6603
28	0.700	1.080	0.680	0.8	0.3440	0.5310	0.3350	0.4033	-0.9080	0	0	0.4029
35	Not Analyzed											
												2.37721

Regression Output: Ln DFR vs. Time

Constant	1.3192
R Squared	0.7319
No. of Observations	30
Degrees of Freedom	
Corr. Coefficient	0.855512
X Coefficient(s)	-0.0829
T 1/2 (days)	8.4

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Appendix D. Turf Transferable Residue Data For Carbaryl In California From MRID 451917-01

Aventis TTR Study		Application Rate (lb ai/A):	8.17
Aventis Study No. 98S15602		Number of Applications:	2, 7 days apart
Date: November 4, 1999		Gallons/Acre:	~55
EPA MRID 451143-01		TTR Sample Area (cm2):	5690
Application Method:	Groundboom	Field Recovery (Avg% (CV)):	103.1 (3.5)
LOQ (ug/sample):	2	LOQ (ug/cm2):	0.00035
All values are post 2 application.		Values not adjusted for field recovery.	
TTR Value At App. Rate (ug/cm2):	91.66	Day 0 Percent Transferability (%):	1.01

Study Day	Residues (ug/cm2) Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Weather Summary Dates	(inches)	Type
0	1.01000	0.89500	0.87600	0.92700	-0.0758	10/13-10/31	2.7	Day 0 Irrigation
0.5	0.92700	1.10000	1.20000	1.07567	0.0729	(up to D10)	0.2	Rain
1	0.32200	0.32500	0.26300	0.30333	-1.1929			
2	0.21300	0.22800	0.27800	0.23967	-1.4285	11/1-11/4	0.3	Irrigation
3	0.24700	0.17300	0.26200	0.22733	-1.4813	(D11-D14)	0	Rain
6	0.10800	0.05360	0.08170	0.08110	-2.5121			
7	0.00366	0.00392	0.00480	0.00413	-5.4903			
10	0.00165	0.00561	0.00327	0.00351	5.6521			
14	0.00050	0.00117	0.00038	0.00069	-7.2851			

Regression Output: Ln DFR vs. Time

Constant	-0.218046
Std Err of Y Est	0.6866374
R Squared	0.9425501
No. of Observations	9
Degrees of Freedom	7
Corr. Coefficient	0.9708502
X Coefficient(s)	-0.543125
Std Err of Coef.	0.0506808
T 1/2 (days)	1.3

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Appendix D: Turf Transferable Residue Data For Carbaryl In Georgia From MRID 451917-01

Aventis TTR Study		Application Rate (lb ai/A):	8.17
Aventis Study No. 98S15602		Number of Applications:	2, 7 days apart
Date: November 4, 1999		Gallons/Acre:	~31
EPA MRID 451143-01		TTR Sample Area (cm2):	5690
Application Method:	Groundboom	Field Recovery (Avg% (CV)):	108.5 (28.1)
LOQ (ug/sample):	2	LOQ (ug/cm2):	0.00035
All values are post 2 application.		Values adjusted for high dose field recovery (avg. = 119%).	
TTR Value At App. Rate (ug/cm2):	91.66	Day 0 Percent Transferability (%):	1.22

Study Day	Residues (ug/cm2)					Weather Summary		
	Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Dates	(inches)	Type
0	1.08400	1.01600	1.26500	1.12167	0.1148	10/6-10/28	1.24	Day 0 Irrigation
0.5	0.55900	0.60800	1.22500	0.79733	-0.2265		0.36	Rain
1	0.33900	0.35400	0.39400	0.36233	-1.0152			
2	0.16600	0.23300	0.19000	0.19633	-1.6279			
3	0.12000	0.22300	0.42000	0.25433	-1.3691			
5	0.33200	0.18800	0.08370	0.20123	-1.6033			
7	0.08850	0.11200	0.26200	0.15417	-1.8697			
10	0.02470	0.12800	0.18000	0.11090	-2.1991			
14	0.05540	0.01380	0.12200	0.06373	-2.7530			

Regression Output: Ln DFR vs. Time

Constant	-0.60015809
Std Err of Y Est	0.449127358
R Squared	0.786183103
No. of Observations	9
Degrees of Freedom	7
Corr. Coefficient	0.88666967
X Coefficient(s)	-0.16818049
Std Err of Coef.	0.033150169
T 1/2 (days)	4.1

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Appendix D: Turf Transferable Residue Data For Carbaryl In Pennsylvania From MRID 451917-01

Aventis TTR Study
Aventis Study No. 98S15602
Date: November 4, 1999
EPA MRID 451143-01
Application Method: CO2 Sprayer
LOQ (ug/sample): 2
All values are post 2 application.
TTR Value At App. Rate (ug/cm2): 91.66

Application Rate (lb ai/A): 8.17
Number of Applications: 2, 7 days apart
Gallons/Acre: ~45
TTR Sample Area (cm2): 5690
Field Recovery (Avg% (CV)): 93.7 (8.9)
LOQ (ug/cm2): 0.00035
Values adjusted for high dose field recovery (avg. = 89%).
Day 0 Percent Transferability (%): 1.22

Study Day	Residues (ug/cm2) Rep 1	Rep 2	Rep 3	Avg	Ln Avg.	Weather Summary Dates	(inches)	Type
0	1.09400	1.18400	1.08700	1.12167	0.1148	5/13-5/31	0.75	Day 0 Irrigation
0.5	1.18000	0.91100	1.24000	1.11033	0.1047	(up to D10)	1.23	Rain
1	0.72700	0.97500	0.87000	0.85733	-0.1539			
3	0.33600	0.27700	0.35300	0.32200	-1.1332	6/1-6/4	0	Irrigation
5	0.35700	0.33200	0.41100	0.36667	-1.0033	(D11-D14)	0.55	Rain
7	0.31100	0.21200	0.16600	0.22967	-1.4711			
10	0.06730	0.05880	0.09140	0.07250	-2.6242			
14	0.03890	0.04520	0.02550	0.03653	-3.3095			

Regression Output: Ln DFR vs. Time

Constant	0.0700248
Std Err of Y Est	0.2445392
R Squared	0.967729
No. of Observations	8
Degrees of Freedom	6
Corr. Coefficient	0.9837322
X Coefficient(s)	-0.247802
Std Err of Coef.	0.0184739
T 1/2 (days)	2.8

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Appendix D. Statistical Summary of TTR and DFR Data For Carbaryl

Study Crop	Source	Location	Application Rate (lb ai/A)	Application Method	Correlation Coefficient	Slope (Ln DFR vs. Time)	[Measured] at T=0 (ug/cm2)	Half-Life (days)	Day 0 % Trans.
Recent GLP DFR & TTR Studies									
Tobacco	EPA MRID 4500059-1	North Carolina	2	Groundboom	0.9569	-0.20492	4.258	3.4	19.0
Olives	EPA MRID 451751-02	California	7.65	Airblast	0.9130	-0.09877	3.067	7	3.6
Sunflower	EPA MRID 450059-09	North Dakota	1.5	FW Aircraft	0.9857	-0.13412	5.350	5.2	31.8
Cabbage	EPA MRID 451917-01	California	2.07	Groundboom	0.9557	-0.19023	2.461	3.6	10.6
Turf	EPA MRID 451143-01	California	8.17	Groundboom	0.9709	-0.54313	0.927	1.3	1.0
Turf	EPA MRID 451143-01	Georgia	8.17	Groundboom	0.8867	-0.16818	1.122	4.1	1.2
Turf	EPA MRID 451143-01	Pennsylvania	8.17	CO2 Sprayer	0.9837	-0.24780	1.122	2.8	1.2
Chrysanthemums	EPA MRID 468928-01	Georgia	1.02	Boom Sprayer	0.7338	-2.3493	0.782	2.8	6.8
Chrysanthemums	EPA MRID 468928-01	Wasington	1.06	Boom Sprayer	0.8964	-0.08350	3.340	8.4	28.1
Literature Studies									
Oranges	Iwata et al, 1979	California	11.5	Oscillating Boom	0.99	-0.05000	Not Reported	14	Not Reported
Lemons	Iwata et al, 1979	California	11.5	Oscillating Boom	0.97	-0.03200	Not Reported	22	Not Reported
Strawberries	Zweig et al, 1984	California	2	Side delivery airblast	0.925	-.0732 (Base 10)	8.01 (1 DAT)	4.1	Not Reported

[Note: Literature studies presented for comparative purposes only. May represent single-sided leaves which is unclear in both papers.]

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Chemical: Carbaryl

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