UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MEMORANDUM

SUBJECT: **Myclobutanil**: Dietary Risk Assessment for the Proposed Use in/on Almonds (Meat and Hulls) (PP#0F3876).

FROM: Jennifer M. Wintersteen
Dietary Risk Evaluation Section
Science Analysis Branch/HED (7509C)

TO: Carl Grable/Connie Welch, PM Team 21
Insecticide-Rodenticide Branch
Registration Division (7505C)

THROUGH: Elizabeth A. Doyle, Ph.D., Section Head
Dietary Risk Evaluation Section
SAB/Health Effects Division

Action Requested

Provide a Dietary Risk Evaluation System (DRES) analysis of the dietary exposure for myclobutanil through the proposed use in or on almonds. The following tolerances are being recommended due to this petition:

Commodity	Tolerance
Almonds, meat	0.1 ppm
Almonds, hulls	2.0 ppm
Milk	0.2 ppm
Meat (cattle, goats, hogs, horses, sheep)	0.1 ppm
Meat by-products (except liver) (cattle, goats, hogs, horses, sheep)	0.2 ppm
Liver (cattle, goats, hogs, horses, sheep)	1.0 ppm

Discussion

Toxicological Endpoint

The chronic analysis used a Reference Dose (RfD) of 0.025 mg/kg body weight/day, based on a no observed effect level (NOEL) of 2.49 mg/kg bwt/day and an uncertainty factor of 100. The NOEL is based on a two-year rat feeding study that demonstrated testicular atrophy in males as an effect at the LOEL (G. Ghali memo, 6/16/94). An assessment of acute dietary risk is not appropriate for this chemical according to the HED Toxicology Endpoint Selection Document (P. Hurley memo, 7/12/94). Myclobutanil is classified as a Group E carcinogen.

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Residue Information

Food uses evaluated in this analysis were the published tolerances listed in the Tolerance Index System (TIS) and 40 CFR §180.443 and 185.4350 and the proposed use on almonds (M. J. Nelson memo, 3/8/95). Recently tolerances for myclobutanil on cottonseed, stone fruits, cherries, and dried plums have been finalized in the Federal Register. These items were updated in the DRES file to a 'published' type. A pending tolerance on pome fruits is found in the DRES file for myclobutanil. The exposure due to these pending commodities was not included in the estimate of risk for this petition.

Meat, milk, poultry and egg tolerances are already published for myclobutanil. Recommendation has been made to increase the existing tolerances for these commodities by CBTS due to the petition on almonds. Since all meat and milk tolerances being recommended are higher than the published tolerance a new entry for each meat and milk item was added so that the sum of the two items equalled the recommended tolerance. A summary of the residue information used in this analysis is attached as Table 1.

Results

A DRES chronic exposure analysis was performed using tolerance level residues and 100 percent crop treated information to estimate the Theoretical Maximum Residue Contribution (TMRC) for the general population and 22 subgroups. Summaries of the TMRCs and their representations as percentages of the Reference Dose (RfD) are included as Tables 2 and 3.

For chronic dietary exposure from published uses of myclobutanil and the new use on almonds and meat/milk the TMRC for the general U.S. population and the most highly exposed subgroup are as follows (as percent of the Reference Dose):

U.S. population	16%
Non-nursing Infants < 1 yr	98%

Exposure for all published commodities and including the proposed use on almonds for the U.S. general population is equal to 4×10^{-3} mg/kg/day, or 16% of the RfD for myclobutanil. Exposure for all published commodities as well as the newly proposed use on almonds for non-nursing infants < 1 year, the most highly exposed subgroup, is 2.5×10^{-2} mg/kg/day, or 98% of the RfD. Approximately 52% of the RfD is consumed by exposure to milk for this subgroup. Another 27% of the RfD is taken up by the exposure to the stone fruits group.

Conclusions

The analysis for myclobutanil is considered a worst case estimate of dietary risk with all residues at tolerance level and 100 percent of the commodities assumed to be treated with myclobutanil. Although the dietary risk from exposure to myclobutanil in or on almonds appears to be approaching the reference dose for non-nursing infants this analysis is unrefined and probably overestimates potential risk from almonds and almond hulls as a feed item.

DRES recommends RD request percent of crop treated data from BEAD in order to further refine the exposure estimates and dietary risk. If the pending petition on pome fruits becomes final the exposure will be equal to 101% of the RfD for non-nursing infants.

Attachments

cc: DRES, Caswell #723K, Tox II, CBTS (M. J. Nelson)

Table 1.

CHEMICAL INFORMATION FOR CASWELL NUMBER 723K DATE: 05/02/95 PAGE: 1

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Myclobutanil (Systane/Rally) Caswell #723K CAS No. 88671-89-0 A.I. CODE: 128857 CFR No. 180.443 185.4350	2yr feeding- rat NOEL= 2.4900 mg/kg 50.00 ppm LEL= 9.8400 mg/kg 200.00 ppm ONCO: E (RfD/PR Committee)	Testicular atrophy. No evidence of carcinogenicity in rats or mice.	ADI UF -->100 OPP RfD= 0.025000 EPA RfD= 0.000000	No data gaps.	HED reviewed 01/27/88 EPA verified 02/25/88 WHO reviewed 1992 RfD/PR reviewed 04/28/94 EPA deferred 04/28/94 On IRIS.

FOOD CODE	FOOD NAME	PETITION NUMBER	TOLERANCE (PPM) NEW	PENDING	PUBLISHED	
01014AA	GRAPES-FRESH	7F3476			1.000000	
01014DA	GRAPES-RAISINS	7H5524			10.00000	H
01014JA	GRAPES-JUICE	7F3476			1.000000	
03001AA	ALMONDS	0F3876	0.100000			
04001AA	APPLES-FRESH	7F3476			0.500000	
04001DA	APPLES-DRIED	7F3476			0.500000	
04001JA	APPLES-JUICE	7F3476			0.500000	
04002AA	CRABAPPLES	9F3812		0.500000		
04003AA	PEARS-FRESH	9F3812		0.500000		
04003DA	PEARS-DRIED	9F3812		0.500000		
04004AA	QUINCES	9F3812		0.500000		
05001AA	APRICOTS-FRESH	1F3954			2.000000	
05001DA	APRICOTS-DRIED	1F3954			2.000000	
05002AA	CHERRIES-FRESH	2F4116			5.000000	
05002DA	CHERRIES-DRIED	2F4116			5.000000	
05002JA	CHERRIES-JUICE	2F4116			5.000000	
05003AA	NECTARINES	9F3811			2.000000	
05004AA	PEACHES-FRESH	9F3811			2.000000	
05004DA	PEACHES-DRIED	9F3811			2.000000	
05005AA	PLUMS(DAMSONS)-FRESH	1F3954			2.000000	
05005DA	PLUMS-PRUNES(DRIED)	1H5608			8.000000	H
05005JA	PLUMS,PRUNE-JUICE	1F3954			2.000000	
27003OA	COTTONSEED-OIL	4F4317			0.020000	
27003WA	COTTONSEED-MEAL	4F4317			0.020000	
43058AA	WINE AND SHERRY	7F3476			1.000000	
50000DB	MILK-NON-FAT SOLIDS	7F3476			0.050000	
50000DB	MILK-NON-FAT SOLIDS	0F3876	0.150000			
50000FA	MILK-FAT SOLIDS	7F3476			0.050000	
50000FA	MILK-FAT SOLIDS	0F3876	0.150000			
50000SA	MILK SUGAR (LACTOSE)	7F3476			0.050000	
50000SA	MILK SUGAR (LACTOSE)	0F3876	0.150000			
53001BA	BEEF-MEAT BYPRODUCTS	7F3476			0.050000	
53001BA	BEEF-MEAT BYPRODUCTS	0F3876	0.150000			
53001BB	BEEF(ORGAN MEATS)-OTHER	7F3476			0.050000	
53001BB	BEEF(ORGAN MEATS)-OTHER	0F3876	0.150000			
53001DA	BEEF-DRIED	7F3476			0.050000	
53001DA	BEEF-DRIED	0F3876	0.050000			
53001FA	BEEF(BONELESS)-FAT (BEEF TALLOW)	7F3476			0.050000	
53001FA	BEEF(BONELESS)-FAT (BEEF TALLOW)	0F3876	0.150000			
53001KA	BEEF(ORGAN MEATS)-KIDNEY	7F3476			0.050000	

Table 1.

CHEMICAL INFORMATION FOR CASWELL NUMBER 723K DATE: 05/02/95 PAGE: 2

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
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FOOD CODE	FOOD NAME	PETITION NUMBER	TOLERANCE (PPM) NEW	PENDING	PUBLISHED
53001KA	BEEF(ORGAN MEATS)-KIDNEY	0F3876	0.150000		
53001LA	BEEF(ORGAN MEATS)-LIVER	7F3476			0.300000
53001LA	BEEF(ORGAN MEATS)-LIVER	0F3876	0.700000		
53001MA	BEEF(BONELESS)-LEAN (W/O REMOVEABLE FAT)	7F3476			0.050000
53001MA	BEEF(BONELESS)-LEAN (W/O REMOVEABLE FAT)	0F3876	0.050000		
53002BA	GOAT-MEAT BYPRODUCTS	7F3476			0.050000
53002BA	GOAT-MEAT BYPRODUCTS	0F3876	0.150000		
53002BB	GOAT(ORGAN MEATS)-OTHER	7F3476			0.050000
53002BB	GOAT(ORGAN MEATS)-OTHER	0F3876	0.150000		
53002FA	GOAT(BONELESS)-FAT	7F3476			0.050000
53002FA	GOAT(BONELESS)-FAT	0F3876	0.150000		
53002KA	GOAT(ORGAN MEATS)-KIDNEY	7F3476			0.050000
53002KA	GOAT(ORGAN MEATS)-KIDNEY	0F3876	0.150000		
53002LA	GOAT(ORGAN MEATS)-LIVER	7F3476			0.300000
53002LA	GOAT(ORGAN MEATS)-LIVER	0F3876	0.700000		
53002MA	GOAT(BONELESS)-LEAN (W/O REMOVEABLE FAT)	7F3476			0.050000
53002MA	GOAT(BONELESS)-LEAN (W/O REMOVEABLE FAT)	0F3876	0.050000		
53003AA	HORSE	7F3476			0.050000
53003AA	HORSE	0F3876	0.950000		
53005BA	SHEEP-MEAT BYPRODUCTS	7F3476			0.050000
53005BA	SHEEP-MEAT BYPRODUCTS	0F3876	0.150000		
53005BB	SHEEP(ORGAN MEATS)-OTHER	7F3476			0.050000
53005BB	SHEEP(ORGAN MEATS)-OTHER	0F3876	0.150000		
53005FA	SHEEP(BONELESS)-FAT	7F3476			0.050000
53005FA	SHEEP(BONELESS)-FAT	0F3876	0.150000		
53005KA	SHEEP(ORGAN MEATS)-KIDNEY	7F3476			0.050000
53005KA	SHEEP(ORGAN MEATS)-KIDNEY	0F3876	0.150000		
53005LA	SHEEP(ORGAN MEATS)-LIVER	7F3476			0.300000
53005LA	SHEEP(ORGAN MEATS)-LIVER	0F3876	0.700000		
53005MA	SHEEP(BONELESS)-LEAN (W/O REMOVEABLE FAT	7F3476			0.050000
53005MA	SHEEP(BONELESS)-LEAN (W/O REMOVEABLE FAT	0F3876	0.050000		
53006BA	PORK-MEAT BYPRODUCTS	7F3476			0.050000
53006BA	PORK-MEAT BYPRODUCTS	0F3876	0.150000		
53006BB	PORK(ORGAN MEATS)-OTHER	7F3476			0.050000
53006BB	PORK(ORGAN MEATS)-OTHER	0F3876	0.150000		
53006FA	PORK(BONELESS)-FAT (INCLUDING LARD)	7F3476			0.050000
53006FA	PORK(BONELESS)-FAT (INCLUDING LARD)	0F3876	0.150000		
53006KA	PORK(ORGAN MEATS)-KIDNEY	7F3476			0.050000
53006KA	PORK(ORGAN MEATS)-KIDNEY	0F3876	0.150000		
53006LA	PORK(ORGAN MEATS)-LIVER	7F3476			0.300000

Table 1.

CHEMICAL INFORMATION FOR CASWELL NUMBER 723K DATE: 05/02/95 PAGE: 3

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FOOD CODE	FOOD NAME	PETITION NUMBER	TOLERANCE (PPM) NEW	PENDING	PUBLISHED
53006LA	PORK(ORGAN MEATS)-LIVER	0F3876	0.700000		
53006MA	PORK(BONELESS)-LEAN (W/O REMOVEABLE FAT)	7F3476			0.050000
53006MA	PORK(BONELESS)-LEAN (W/O REMOVEABLE FAT)	0F3876	0.050000		
55008BA	TURKEY-BYPRODUCTS	7F3476			0.020000
55008LA	TURKEY-GIBLETS (LIVER)	7F3476			0.020000
55008MA	TURKEY-FLESH(W/O SKIN, W/O BONES)	7F3476			0.020000
55008MB	TURKEY-FLESH(+SKIN,W/O BONES)	7F3476			0.020000
55008MC	TURKEY-UNSPECIFIED	7F3476			0.020000
55013BA	POULTRY,OTHER-BYPRODUCTS	7F3476			0.020000
55013LA	POULTRY,OTHER-GIBLETS(LIVER)	7F3476			0.020000
55013MA	POULTRY,OTHER-FLESH (+SKIN,W/O BONES)	7F3476			0.020000
55014AA	EGGS-WHOLE	7F3476			0.020000
55014AB	EGGS-WHITE ONLY	7F3476			0.020000
55014AC	EGGS-YOLK ONLY	7F3476			0.020000
55015BA	CHICKEN-BYPRODUCTS	7F3476			0.020000
55015LA	CHICKEN-GIBLETS(LIVER)	7F3476			0.020000
55015MA	CHICKEN-FLESH(W/O SKIN,W/O BONES)	7F3476			0.020000
55015MB	CHICKEN-FLESH(+SKIN,W/O BONES)	7F3476			0.020000

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Table 2.

TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS DATE: 05/02/95 PAGE: 1

CHEMICAL INFORMATION	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
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POPULATION SUBGROUP	TOTAL TMRC (MG/KG BODY WEIGHT/DAY) CURRENT TMRC*	NEW TMRC**	NEW TMRC AS PERCENT OF RFD	DIFFERENCE AS PERCENT OF RFD	EFFECT OF ANTICIPATED RESIDUES ARC	%RFD
U.S. POPULATION - 48 STATES	0.002319	0.004153	16.611228	7.335780		
U.S. POPULATION - SPRING SEASON	0.002189	0.003897	15.586768	6.831536		
U.S. POPULATION - SUMMER SEASON	0.002656	0.004457	17.829496	7.206548		
U.S. POPULATION - FALL SEASON	0.002246	0.004171	16.682500	7.699960		
U.S. POPULATION - WINTER SEASON	0.002187	0.004087	16.349252	7.602232		
NORTHEAST REGION	0.002614	0.004524	18.095892	7.641560		
NORTH CENTRAL REGION	0.002321	0.004233	16.930000	7.645644		
SOUTHERN REGION	0.001773	0.003361	13.445736	6.355276		
WESTERN REGION	0.002866	0.004908	19.631156	8.165592		
HISPANICS	0.002531	0.004846	19.385820	9.263040		
NON-HISPANIC WHITES	0.002398	0.004229	16.914072	7.323668		
NON-HISPANIC BLACKS	0.001717	0.003317	13.269628	6.403272		
NON-HISPANIC OTHERS	0.002264	0.004300	17.200628	8.144440		
NURSING INFANTS (< 1 YEAR OLD)	0.007318	0.010188	40.751500	11.479500		
NON-NURSING INFANTS (< 1 YEAR OLD)	0.014581	0.025335	101.340344	43.017468		
FEMALES (13+ YEARS, PREGNANT)	0.001674	0.002957	11.827084	5.129988		
FEMALES 13+ YEARS, NURSING	0.002136	0.003835	15.339328	6.795300		
CHILDREN (1-6 YEARS OLD)	0.006399	0.011523	46.090248	20.494192		
CHILDREN (7-12 YEARS OLD)	0.003317	0.006496	25.984784	12.714912		
MALES (13-19 YEARS OLD)	0.001718	0.003711	14.842492	7.969476		
FEMALES (13-19 YEARS OLD, NOT PREG. OR NURSING)	0.001558	0.003078	12.312128	6.078832		
MALES (20 YEARS AND OLDER)	0.001395	0.002446	9.782768	4.203368		
FEMALES (20 YEARS AND OLDER, NOT PREG. OR NURS)	0.001514	0.002446	9.785088	3.728112		

*Current TMRC does not include new or pending tolerances.
**New TMRC includes new, pending, and published tolerances.

Table 3: Myclobutanil on Almonds

TOLERANCE ASSESSMENT SUMMARY FOR Myclobutanil (Systane/Rally) DATE: 05/02/95
CASWELL #723K

ANALYSIS FOR POPULATION SUB-GROUP: U.S. POPULATION - 48 STATES

EXISTING TOLERANCES (PUBLISHED ONLY)		
RESULT IN A TMRC OF:	0.002319	MG/KG/DAY
THE EXISTING TMRC IS EQUIVALENT TO:	9.275	% OF THE ADI.
PROPOSED NEW TOLERANCES (CURRENT PETITION ONLY)		
RESULT IN A TMRC OF:	0.001773	MG/KG/DAY
THESE NEW TOLERANCES WILL OCCUPY:	7.089	% OF THE ADI.
IF THE NEW TOLERANCES (CURRENT PETITION ONLY)		
ARE APPROVED THE RESULTANT TMRC WILL BE:	0.004092	MG/KG/DAY
THE NEW TMRC WILL OCCUPY	16.365	% OF THE ADI.
OTHER PENDING TOLERANCES EXCLUDING THE		
CURRENT NEW PETITION HAVE A TMRC OF:	0.000062	MG/KG/DAY
THIS TMRC WILL OCCUPY	0.246	% OF THE ADI.
IF ALL PENDING TOLERANCES (INCLUDING THE		
CURRENT NEW PETITION) ARE GRANTED		
THE RESULTANT TMRC WILL BE:	0.004153	MG/KG/DAY
THE TOTAL TMRC WILL OCCUPY	16.611	% OF THE ADI.

ANALYSIS FOR POPULATION SUB-GROUP: NON-NURSING INFANTS (< 1 YEAR OLD)

EXISTING TOLERANCES (PUBLISHED ONLY)		
RESULT IN A TMRC OF:	0.014581	MG/KG/DAY
THE EXISTING TMRC IS EQUIVALENT TO:	58.323	% OF THE ADI.
PROPOSED NEW TOLERANCES (CURRENT PETITION ONLY)		
RESULT IN A TMRC OF:	0.009966	MG/KG/DAY
THESE NEW TOLERANCES WILL OCCUPY:	39.861	% OF THE ADI.
IF THE NEW TOLERANCES (CURRENT PETITION ONLY)		
ARE APPROVED THE RESULTANT TMRC WILL BE:	0.024547	MG/KG/DAY
THE NEW TMRC WILL OCCUPY	98.184	% OF THE ADI.
OTHER PENDING TOLERANCES EXCLUDING THE		
CURRENT NEW PETITION HAVE A TMRC OF:	0.000790	MG/KG/DAY
THIS TMRC WILL OCCUPY	3.156	% OF THE ADI.
IF ALL PENDING TOLERANCES (INCLUDING THE		
CURRENT NEW PETITION) ARE GRANTED		
THE RESULTANT TMRC WILL BE:	0.025336	MG/KG/DAY
THE TOTAL TMRC WILL OCCUPY	101.340	% OF THE ADI.

ANALYSIS FOR POPULATION SUB-GROUP: CHILDREN (1-6 YEARS OLD)

EXISTING TOLERANCES (PUBLISHED ONLY)		
RESULT IN A TMRC OF:	0.006400	MG/KG/DAY
THE EXISTING TMRC IS EQUIVALENT TO:	25.596	% OF THE ADI.
PROPOSED NEW TOLERANCES (CURRENT PETITION ONLY)		
RESULT IN A TMRC OF:	0.004993	MG/KG/DAY
THESE NEW TOLERANCES WILL OCCUPY:	19.970	% OF THE ADI.
IF THE NEW TOLERANCES (CURRENT PETITION ONLY)		
ARE APPROVED THE RESULTANT TMRC WILL BE:	0.011392	MG/KG/DAY
THE NEW TMRC WILL OCCUPY	45.566	% OF THE ADI.
OTHER PENDING TOLERANCES EXCLUDING THE		
CURRENT NEW PETITION HAVE A TMRC OF:	0.000132	MG/KG/DAY
THIS TMRC WILL OCCUPY	0.524	% OF THE ADI.
IF ALL PENDING TOLERANCES (INCLUDING THE		
CURRENT NEW PETITION) ARE GRANTED		
THE RESULTANT TMRC WILL BE:	0.011523	MG/KG/DAY
THE TOTAL TMRC WILL OCCUPY	46.090	% OF THE ADI.

13544

R149033

Chemical: Myclobutanil

PC Code:
128857
HED File Code: 14000 Risk Reviews
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File ID: 00000000
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