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

OPP OFFICIAL RECORD
HEALTH EFFECTS DIVISION
SCIENTIFIC DATA REVIEWS
EPA SERIES 361

OFFICE OF PREVENTION, PESTICIDE AND TOXIC SUBSTANCES

MEMORANDUM

Date: 5/20/2009

SUBJECT: Pendimethalin. Response to Request for Amended Use Directions for Alfalfa Forage and Hay

PC Code: 108501
Decision No.: 398297, 398298
Petition No.: None
Risk Assessment Type: NA
TXR No.: NA
MRID No.: 47485601

DP Barcode: D357088, D357109, D357453
Registration No.: 241-418
Regulatory Action: Amended Use
Case No.: NA
CAS No.: 40487-42-1
40 CFR: §180.361

FROM: Douglas Dotson, Ph.D., Chemist D. Dotson
Registration Action Branch 2
Health Effects Division (7509P)

THROUGH: Richard Loranger, Ph.D., Senior Scientist R. Loranger
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TO: Philip Errico/James Tompkins, RM Team 25
Herbicide Branch
Registration Division (7505P)

BASF Chemical Company submitted a request to amend the use directions for the herbicide pendimethalin (N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine) on alfalfa forage and hay. The current use directions specify a maximum seasonal application rate of 4.0 lb ai/A and a PHI of 50 days. BASF is proposing to amend the label by adding the following label restriction: "Do not harvest alfalfa forage or hay less than 28 days after applying 2.1 quarts or less of Prowl H_2O." In support of the amended use request, BASF submitted a proposed supplemental label for the end-use product, Prowl H_2O Herbicide (EPA Registration Number 241-418). Tolerances for pendimethalin are established in 40CFR §180.361. Most of the tolerances are established at

Rec'd in RCC 5/22/2009 EL

either 0.10 or 0.20 ppm. Tolerances are established for alfalfa forage at 3.0 ppm, alfalfa hay at 4.0 ppm, and alfalfa seed at 0.1 ppm.

In support of the amended use request, BASF submitted field trial data for pendimethalin on alfalfa forage and hay (MRID 47485601) and an explanation as to why a tolerance increase is not necessary. The latter document is entitled: "Rationale for a Reduced Pre-Harvest Interval for Pendimethalin in Alfalfa Forage and Hay." The field trial study includes samples that were treated at 4.0, 2.0, and 1.0 lb ai/A. Samples were taken at PHIs of 14, 21, and 28 days. As stated above, however, the amended use pattern is for application of 2.0 lb ai/A (2.1 quarts of Prowl H_2O Herbicide) and a PHI of 28 days. The registrant entered the field trial data into HED's Tolerance Generator for NAFTA-Harmonized Tolerances. The plots and calculations for all trials were included in the rationale which was submitted. The individual field trial values were also included for the proposed scenarios (forage and hay, 2.0 lb ai/A, 28-day PHI).

The current tolerances for alfalfa forage and hay are 3.0 and 4.0 ppm, respectively. BASF feels that these tolerances are adequate for the proposed amended use. The maximum field trial values for forage and hay were 2.99 and 2.27 ppm, respectively. BASF gave the following statement as the rationale for not proposing a tolerance increase: "..., the NAFTA MRL Calculator values were not used because the statistical analysis conservatively over-calculated the MRL value and higher residue values in the dataset(s) do not fit the log normal distribution proposed by the MRL calculator. Therefore, the maximum measured residue values should be used instead."

HED reviewed the field trial data submitted in MRID 47485601 (D357088, 47485601.DER, D. Dotson, 5/20/2009). The OPPTS Series 860 Guidelines recommend that twelve field trials be performed for alfalfa. This number is reduced to nine when a tolerance is already established and the registrant is simply proposing a modified use pattern provided the existing tolerance does not need to be increased. Although the forage tolerance does need to be changed, the increase is small. The established hay tolerance is adequate. As a result, BASF submitted an adequate number of field trials. The geographic distribution of the field trials is also adequate. As a result, the alfalfa field trial data are adequate for tolerance-setting purposes.

HED entered the available field trial data into its Tolerance Generator for NAFTA-Harmonized Tolerances. As nine field trials were performed at the proposed application rate and PHI, eighteen field trial values are available for both forage and hay. The residues of concern for tolerance expression are pendimethalin and the metabolite CL202347, 4-[(1-ethylpropyl)amino]-2-methyl-3,5-dinitrobenzyl alcohol. In hay, the combined residues ranged from 0.11 ppm to 2.27 ppm. In forage, the combined residues ranged from 0.10 ppm to 2.99 ppm. The LOQ for both parent and metabolite is 0.05 ppm. The results of the statistical treatment of the data for both forage and hay can be found in Attachment 1.

For hay, HED's tolerance generator directs that the lognormality assumption should not be rejected. The tolerance is determined by lognormal EU Method 1. At the 99th percentile, the recommended tolerance is 4.0 ppm. The current tolerance for alfalfa hay is also 4.0 ppm. For forage, however, HED's tolerance generator directs that the lognormality assumption should be

rejected. The tolerance is determined by the California Method and recommended to be 3.5 ppm. The current tolerance for alfalfa forage is 3.0 ppm.

Conclusions

The submitted field trial data are adequate to support one application of pendimethalin to alfalfa at a rate of 2.0 lb ai/A, and to harvest forage and hay at a 28-day PHI. BASF is proposing to add the following label restriction to the Prowl H_2O label: "Do not harvest alfalfa forage or hay less than 28 days after applying 2.1 quarts or less of Prowl H_2O." The statement needs to be modified to stipulate that, if forage and/or hay are harvested at a 28-day PHI, the maximum seasonal application cannot exceed 2.0 lb ai/A. That is, no other applications may be made prior to the one application made at the 28-day PHI. If more than 2.0 lb ai/A are applied per season, the 50-day PHI must be maintained.

HED is in agreement with BASF that a revised tolerance is not needed for alfalfa hay. The current tolerance of 4.0 ppm for alfalfa, hay is adequate to support the proposed use directions. When BASF entered the field trial data into the tolerance generator, it treated the data slightly differently than HED did and, as a result, obtained a different value from the tolerance generator. In the calculation of combined residues, BASF assigned a residue value of zero to the metabolite when the residue was non-detectable. The limit of detection was 0.01 ppm. In three samples, the metabolite residue was non-detectable. For those three samples, the combined residues were 0.06 ppm, 0.06 ppm, and 0.07 ppm. HED assigned a value of 0.05 ppm to the metabolite when the residue was non-detectable. The combined residues in the three samples were 0.11 ppm, 0.11 ppm, and 0.12 ppm. BASF obtained a recommended tolerance of 6.0 ppm, whereas HED obtained a recommended tolerance of 4.0 ppm. Although HED used higher values for the combined residues, it obtained a lower recommended tolerance. HED has observed that greater variability in the data tends to cause the recommended tolerance to increase.

HED is not in agreement with BASF that a revised tolerance is not needed for alfalfa forage, however. Again, HED and BASF treated the non-detectable data differently. In the cases where the metabolite residue was non-detectable, BASF and HED treated the data the same way they did for the hay samples, described above. In cases where pendimethalin residue was below the LOQ of 0.05 ppm and the metabolite residue was non-detectable, BASF used the maximum likelihood estimator (MLE) to impute the values to be entered into the tolerance generator. There were three of these values. The values BASF used were 0.05 ppm, 0.036 ppm, and 0.022 ppm. For these samples, HED assigned a value of 0.05 ppm for both the parent and the metabolite, so the combined residue value was 0.10 ppm. As with the hay tolerance, even though HED used higher residue values for three samples, the recommended tolerance was lower. When BASF used the imputed values, a recommended a tolerance of 4.5 ppm was obtained. The tolerance generator directed that the 95/99 Rule should be used, and the log normality assumption should not be rejected. When HED used the combined LOQs for non-quantifiable residues, a recommended tolerance of 3.5 ppm was obtained. The tolerance generator directed that the California Method should be used and the log normality assumption should be rejected.

The current forage tolerance is 3.0 ppm and the highest field trial value is 2.99 ppm. HED is not of the opinion that a tolerance of 3.0 ppm is adequate to detect misuse of pendimethalin on alfalfa forage.

Recommendations

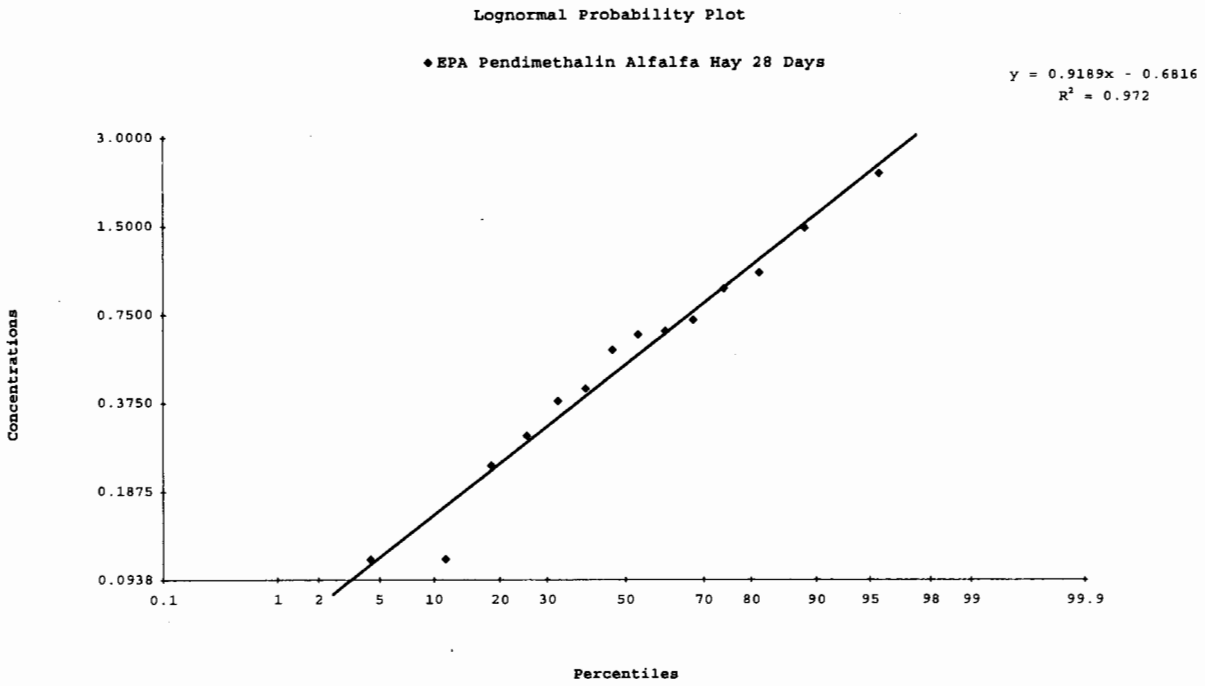
HED recommends that RD request that the registrant make a modification to the label amendment. BASF needs to add a statement that stipulates that, if forage and/or hay are harvested at a 28-day PHI, only the one application may be made during the growing season and it cannot exceed 2.0 lb ai/A.

HED recommends that RD request that the registrant propose an adequate tolerance for alfalfa, forage.

Attachment 1: Calculation of Recommended Tolerance for Alfalfa Hay

Residue values (ppm): 0.57, 0.66, 0.64, 0.72, 0.23, 0.29, 0.11, 0.11, 0.92, 1.04, 1.48, 2.27, 0.38, 0.42, 0.79, 1.15, 0.12, 0.12

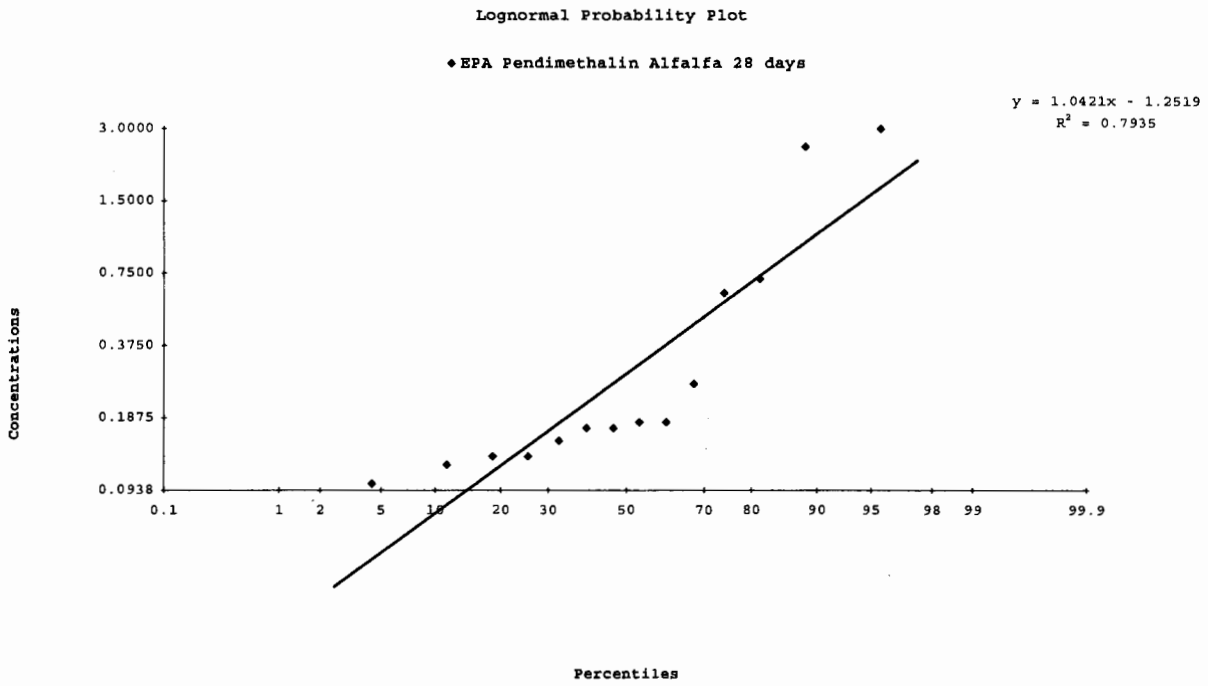
	Regulator:	EPA	
	Chemical:	Pendimethalin	
	Crop:	Alfalfa Hay	
	PHI:	28 Days	
	App. Rate:	2 lbs ai/A	
	Submitter:	BASF	
	n:	18	
	min:	0.11	
	max:	2.27	
	median;	0.61	
	average:	0.67	
	95th Percentile	99th Percentile	99.9th Percentile
EU Method I Normal	1.6 (2.5)	2.0 (3.0)	2.5 (--)
EU Method I Log Normal	2.5 (4.5)	4.0 (11)	8.0 (--)
EU Method II Distribution-Free		1.9	
California Method $\mu + 3\sigma$		2.5	
UPLMedian95th		4.0	
Approximate Shapiro-Francia Normality Test Statistic		0.9720 p-value > 0.05 : Do not reject lognormality assumption	


Lognormal Probability Plot
◆EPA Pendimethalin Alfalfa Hay 28 Days
y = 0.9189x - 0.6816
R² = 0.972
3.0000
1.5000
0.7500
0.3750
0.1875
0.0938
Concentrations
0.1
1
2
5
10
20
30
50
70
80
90
95
98
99
99.9
Percentiles

Attachment 2: Calculation of Recommended Tolerance for Alfalfa Forage

Residue values (ppm): 0.17, 0.17, 2.51, 2.99, 0.13, 0.13, 0.10, 0.26, 0.18, 0.15, 0.71, 0.62, 0.12, 0.18, 0.48, 0.27, 0.10, 0.10

	Regulator:	EPA	
	Chemical:	Pendimethalin	
	Crop:	Alfalfa	
	PHI:	28 days	
	App. Rate:	2 lb a.i./A	
	Submitter:	BASF	
	n:	18	
	min:	0.10	
	max:	2.99	
	median;	0.18	
	average:	0.52	
	95th Percentile	99th Percentile	99.9th Percentile
EU Method I Normal	1.9 (3.0)	2.5 (3.5)	3.5 (--)
EU Method I Log Normal	1.8 (4.5)	4.0 (13)	9.0 (--)
EU Method II Distribution-Free		1.1	
California Method $\mu + 3\sigma$		3.5	
UPLMedian95th		1.2	
Approximate Shapiro-Francia Normality Test Statistic		0.7935 p-value <= 0.01: Reject lognormality assumption	


Lognormal Probability Plot
EPA Pendimethalin Alfalfa 28 days
y = 1.0421x - 1.2519
R² = 0.7935
3.0000
1.5000
0.7500
0.3750
0.1875
0.0938
Concentrations
0.1
1
2
5
10
20
30
50
70
80
90
95
98
99
99.9
Percentiles

Primary Evaluator Douglas Dotson Date: 5/20/2009
Douglas Dotson, Ph.D., Chemist, RAB2/HED

Peer Reviewer Michael Doherty Date: 5/20/2009
Michael Doherty, Ph.D., Chemist, RAB2/HED

Note: This DER was originally prepared under contract by Versar, Inc. (6850 Versar Center, Springfield, VA 22151; submitted 2/0/2009). The DER has been reviewed by the Health Effects Division (HED) and revised to reflect current Office of Pesticide Programs (OPP) policies.

STUDY REPORTS:

47485601. Jordan, JM. (2008) Magnitude of Pendimethalin Residues in Alfalfa Following Application of Prowl H_2O Herbicide. BASF Study Number 253108. Unpublished study sponsored by BASF Corporation. 365 pages

EXECUTIVE SUMMARY:

BASF Corporation submitted field trial data for pendimethalin and its metabolite (CL 202347) in/on alfalfa grown for forage and hay. Nine crop field trials were conducted in the US and Canada in the 2007 growing season. The trials encompassed NAFTA growing regions 1 (PA; one trial), 5 (ND, WI, MN, and Manitoba (MB); one trial each), 7 (Saskatchewan (SK), one trial) 9 (ID; one trial), 10 (CA; one trial), and 11 (ID; one trial). At each trial site, one untreated control plot (treatment plot 1) and nine treated plots (treatment plots 2 through 10) were established. The treated plots received one broadcast foliar postemergence application of Prowl H_2O Herbicide, formulated as a 3.8 lb ai/gal aqueous capsule suspension with pendimethalin as the active ingredient. The target application rate for treatment plots 2 through 4 was 4.0 lb ai/A (4.5 kg ai/ha). The target application rate for treatment plots 5 through 7 was 2.0 lb ai/A (2.2 kg ai/ha). The target application rate for treatment plots 8 through 10 was 1.0 lb ai/A (1.1 kg ai/ha). There were no adjuvants added to the spray mixtures. The spray volume ranged from 20 to 31 gallons per acre (190 to 293 L/ha). The raw agricultural commodity (RAC) samples were collected at crop maturity. Samples of forage and hay were cut at maturity (beginning bloom stage) at target pre-harvest intervals (PHIs) of 28 ± 2 days for treatment plots 2, 5, and 8, 21 ± 2 days for treatment plots 3, 6, and 9, and 14 ± 2 days for treatment plots 4, 7, and 10. Additionally, samples of forage and hay were harvested at approximately 28 ± 7 days after the first cut of the same alfalfa and 28 ± 7 days after the second cut of the same alfalfa. The samples harvested for hay were allowed to dry to a moisture content of 10-20% prior to sample collection.

The RAC samples were placed in frozen storage at the test site (temperature not provided) and remained frozen through analysis. The storage temperature was <-5°C at the sample preparation/processing facility and <-20°C at the analytical laboratory. The maximum storage interval from collection to extraction was 328 days (10.8 months) for both forage and hay

samples. All sample extracts were analyzed within six days of extraction. The stability of pendimethalin residues has been demonstrated on a variety of crops stored frozen for 24 months, including alfalfa (forage, hay, and seed) (refer to MRIDs 42471903 and 42266301). The data adequately support the storage duration and conditions of the alfalfa forage and hay samples collected in these field trials.

Residues of pendimethalin and its metabolite in alfalfa forage and hay matrices were determined using GENCS (BASF South America) Method SOP-PA.0290, which is a slightly modified version of the BASF Analytical Method Number D0203 (MRID 46391002). In the method, residues are analyzed using high performance liquid chromatography with mass selective detection (HPLC-MS/MS). The validated limit of quantitation (LOQ) is 0.05 ppm for residues of each analyte in/on alfalfa RAC samples. The LOQ for the combined residues of pendimethalin (parent plus CL 202347) in alfalfa RAC samples is 0.10 ppm. The method was adequate for data collection based on acceptable concurrent method recoveries.

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 28 ± 2 days, contained maximum combined residues of pendimethalin of 9.91 ppm for the 4 lb ai/A treatment plots, 2.99 ppm for the 2 lb ai/A treatment plots, and 1.58 ppm for the 1 lb ai/A treatment plots. Maximum combined residues of pendimethalin in/on hay samples were 2.54, 2.27 and 2.86 ppm, respectively, for these treatment plots.

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 21 ± 2 days, contained maximum combined residues of pendimethalin in/on forage of 12.00 ppm for the 4 lb ai/A treatment plots, 8.32 ppm for the 2 lb ai/A treatment plots, and 2.48 ppm for the 1 lb ai/A treatment plots. Maximum combined residues in/on hay samples were 24.88, 16.6 and 4.60 ppm, respectively, for these treatment plots.

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 14 ± 2 days, contained maximum combined residues of pendimethalin in/on forage of 50.9 ppm for the 4 lb ai/A treatment plots, 36.9 ppm for the 2 lb ai/A treatment plots, and 5.77 ppm for the 1 lb ai/A treatment plots. Maximum combined residues in/on hay samples were 94.9, 35.7 and 12.3 ppm, respectively, for these treatment plots.

Combined residues of pendimethalin generally declined in forage and hay samples collected from subsequent (second and/or third) cuttings.

STUDY/WAIVER ACCEPTABILITY/DEFICIENCIES/CLARIFICATIONS:

Under the conditions and parameters used in the study, the field trial residue data are classified as scientifically acceptable, pending submittal of the sample storage temperature at the field test sites.

COMPLIANCE:

Signed and dated Good Laboratory Practice (GLP), Quality Assurance, and Data Confidentiality statements were provided. There were no GLP deviations which impacted the validity of the study.

A. BACKGROUND INFORMATION

Pendimethalin is a selective dinitroaniline herbicide (Group 3) that acts as a microtubule disruptor by inhibiting cell division and cell elongation in plants. The Product and Residue Chemistry Chapters for the Pendimethalin Reregistration Eligibility Decision (RED) were issued in December 1995, and the RED for Pendimethalin was issued in June 1997. Pendimethalin is registered for use on a wide variety of field and orchard crops, fruits, and vegetables. Formulations currently registered for food/feed uses include emulsifiable concentrate (EC), soluble concentrate/liquid (SC/L), water dispersible granule (WDG), and microencapsulated formulations. Pendimethalin is applied to soil as preplant, preemergence, and postemergence applications, including at lay-by, with ground or aerial equipment. The current use directions specify a maximum seasonal application rate of 4.0 lb ai/A and a PHI of 50 days. BASF is proposing to amend the label by adding the following statement to the Restrictions and Limitations section: "Do not harvest alfalfa forage or hay less than 28 days after applying 2.1 quarts or less of Prowl H_2O." An application of 2.1 quarts is equivalent to 2 lb ai.

TABLE A.1. Test Compound Nomenclature.

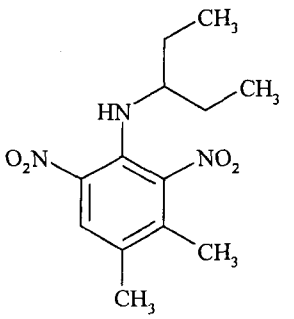
Chemical structure	
Common name	Pendimethalin
Company experimental name	BAS 455H, CL 92,553
IUPAC name	N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine
CAS name	N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine
CAS registry number	40487-42-1
End-use products (EPs)	Prowl® H_2O Herbicide (EPA Reg. No 241-418)

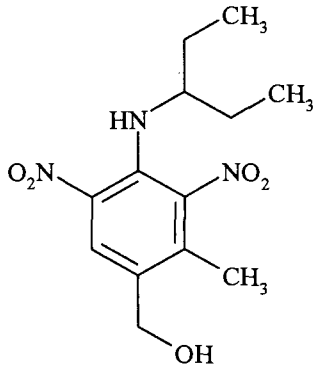
TABLE A.1. Test Compound Nomenclature.	
Chemical structure of metabolite CL 202347 (3,5-dinitrobenzyl alcohol metabolite)	 4-[(1-ethylpropyl)amino]-2-methyl-3,5-dinitrobenzyl alcohol

TABLE A.2. Physicochemical Properties of Pendimethalin.		
Parameter	Value	Reference
Melting point/range	54-58°C (TGAI)	Memo, D332750, C. Olinger, 3/31/2008
pH	4.7 (TGAI)	
Density	1.461 g/cm^3 (at room temperature)	
Water solubility of PAI	0.275 ppm at 25°C	
Solvent solubility of TGAI	Solvent — g/100 mL at 25 °C n-Heptane — 11.2 2-Propanol — 6.1 Acetone — 161.0 Toluene — 128.4 Methyl alcohol — 5.5 Dimethyl sulfoxide — 21.4 Methylene chloride — 232.0	
Vapor pressure	1.24 x 10^{-8} Pa at 20°C	
Dissociation constant, pK_a	Too small to measure	
Octanol/water partition coefficient, Log(K_{OW})	5.18	
UV/visible absorption spectrum	Molar extinction coefficients= 3.81 x 10^4 L/mole/cm at 234 nm 1.93 x 10^4 L/mole/cm at 280 nm	

B. EXPERIMENTAL DESIGN

B.1. Study Site Information

Refer to Table B.1.1 for trial site conditions, Table B.1.2 for study use patterns, and Table B.1.3 for geographic locations of submitted and requested trials.

TABLE B.1.1 Trial Site Conditions.

Trial Identification: City, State, Region; Year (Trial No.)	Soil characteristics			
	Type	% OM	pH	CEC (meq/100 g)
Lehigh, PA, Region 1; 2007 (RCN 070062)	Trexler Shale	---	---	---
Grand Forks, ND, Region 5; 2007 (RCN 070063)	Silt Loam	---	---	---
Pepin, WI, Region 5; 2007 (RCN 070064)	Silt Loam	---	---	---
Steele, MN, Region 5; 2007 (RCN 070065)	Clay Loam	---	---	---
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	Osborne Clay	---	---	---
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	Loam	---	---	---
Jerome, ID, Region 9; 2007 (RCN 070068)	Silt Loam	---	---	---
Tulare, CA, Region 10; 2007 (RCN 070069)	Loam	---	---	---
Payette, ID, Region 11; 2007 (RCN 070070)	Sandy Loam	---	---	---

The trial sites were maintained according to typical agricultural practices for each geographical region for the duration of the field phase. Fertilizer and maintenance chemicals were applied to the test sites as needed. The actual temperature and rainfall were within normal parameters during the residue study period with a few exceptions. According to the weather assessment in the Study Report, rainfall was slightly above normal at sites RCN 070064 (June through September) and RCN 070065 (except for June) and rainfall was below normal at sites RCN 070066, RCN 070067 (May and July), RCN 070068, and RCN 070069. Additionally, temperatures were stated as generally above normal at sites RCN 070065, RCN 070068, and RCN 070070. However, the Study Report also states that, at the site of trial R070065, the interval between the 2nd and 3rd sampling was 50 days because of slow plant growth that resulted from cooler than normal temperatures. At the site of trial R070067, some samples were not collected because poor weather prevented the growth of the alfalfa after the first cutting. Irrigation was applied as needed to maintain normal crop growth and development. Irrigation was used at trial sites RCN 070068, RCN 070069, and RCN 070070. It should be noted that the Study Report states that flood irrigation was prohibited; however, the plot information provided in Appendix B of the Study Report indicates that flood irrigation was used at trial site RCN 070069. According to the Study Report, the minor meteorological abnormalities noted above are not expected to have had a significant effect on the residue data from the alfalfa field trials.

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 2									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	26.0 (244)	4.16 (4.67)	N/A	4.16 (4.67)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 0 days after cutting	30.7 (287)	4.09 (4.59)	N/A	4.09 (4.59)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	25.0 (234)	4.00 (4.49)	N/A	4.00 (4.49)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	20.6 (193)	3.99 (4.47)	N/A	3.99 (4.47)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 3 days after cutting	31.3 (293)	4.18 (4.69)	N/A	4.18 (4.69)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 0 days after cutting	21.2 (199)	3.97 (4.46)	N/A	3.97 (4.46)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 5 days after cutting	23.9 (224)	3.98 (4.46)	N/A	3.98 (4.46)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 3 days after cutting	28.7 (269)	3.98 (4.46)	N/A	3.98 (4.46)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	29.9 (280)	3.98 (4.46)	N/A	3.98 (4.46)	None

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 15 of 78

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 3									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	28.6 (268)	4.16 (4.66)	N/A	4.16 (4.66)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 7 days after cutting	30.6 (286)	4.08 (4.58)	N/A	4.08 (4.58)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	25.5 (239)	4.08 (4.58)	N/A	4.08 (4.58)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	22.2 (208)	4.02 (4.51)	N/A	4.02 (4.51)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 10 days after cutting	29.9 (280)	4.12 (4.62)	N/A	4.12 (4.62)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 7 days after cutting	21.4 (200)	4.00 (4.49)	N/A	4.00 (4.49)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 12 days after cutting	23.6 (221)	4.00 (4.49)	N/A	4.00 (4.49)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 10 days after cutting	28.3 (265)	4.07 (4.56)	N/A	4.07 (4.56)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	30.3 (284)	4.04 (4.53)	N/A	4.04 (4.53)	None

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 16 of 78

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 4									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	28.4 (266)	4.13 (4.63)	N/A	4.13 (4.63)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 14 days after cutting	30.2 (283)	4.02 (4.51)	N/A	4.02 (4.51)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 18 days after cutting	25.1 (235)	4.02 (4.51)	N/A	4.02 (4.51)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	21.0 (197)	3.97 (4.45)	N/A	3.97 (4.45)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 17 days after cutting	30.0 (281)	4.12 (4.62)	N/A	4.12 (4.62)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	21.0 (196)	3.93 (4.40)	N/A	3.93 (4.40)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 20 days after cutting	23.6 (221)	3.99 (4.47)	N/A	3.99 (4.47)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	29.2 (273)	4.04 (4.53)	N/A	4.04 (4.53)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	30.0 (281)	4.00 (4.49)	N/A	4.00 (4.49)	None

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 17 of 78

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 5									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	26.0 (243)	2.08 (2.33)	N/A	2.08 (2.33)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 0 days after cutting	30.5 (285)	2.03 (2.28)	N/A	2.03 (2.28)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	25.2 (236)	2.02 (2.27)	N/A	2.02 (2.27)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	20.3 (190)	1.97 (2.21)	N/A	1.97 (2.21)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 3 days after cutting	30.4 (285)	2.09 (2.35)	N/A	2.09 (2.35)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 0 days after cutting	21.5 (201)	2.01 (2.25)	N/A	2.01 (2.25)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 5 days after cutting	24.3 (227)	2.02 (2.27)	N/A	2.02 (2.27)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 3 days after cutting	28.7 (268)	1.99 (2.23)	N/A	1.99 (2.23)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	30.0 (281)	2.00 (2.24)	N/A	2.00 (2.24)	None

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 18 of 78

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 6									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	28.2 (264)	2.05 (2.30)	N/A	2.05 (2.30)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 7 days after cutting	30.1 (282)	2.01 (2.25)	N/A	2.01 (2.25)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	25.3 (237)	2.02 (2.27)	N/A	2.02 (2.27)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	22.2 (208)	2.01 (2.25)	N/A	2.01 (2.25)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 10 days after cutting	29.9 (280)	2.06 (2.31)	N/A	2.06 (2.31)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 7 days after cutting	21.3 (199)	1.99 (2.23)	N/A	1.99 (2.23)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 12 days after cutting	23.6 (221)	2.00 (2.24)	N/A	2.00 (2.24)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 10 days after cutting	28.1 (263)	2.02 (2.26)	N/A	2.02 (2.26)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	30.7 (287)	2.05 (2.30)	N/A	2.05 (2.30)	None

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 19 of 78

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 7									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	28.4 (265)	2.06 (2.31)	N/A	2.06 (2.31)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 14 days after cutting	30.2 (283)	2.01 (2.25)	N/A	2.01 (2.25)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 18 days after cutting	25.1 (235)	2.01 (2.25)	N/A	2.01 (2.25)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	21.0 (196)	1.98 (2.22)	N/A	1.98 (2.22)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 17 days after cutting	30.1 (282)	2.06 (2.31)	N/A	2.06 (2.31)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	21.1 (198)	1.98 (2.21)	N/A	1.98 (2.21)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 20 days after cutting	24.4 (228)	2.06 (2.31)	N/A	2.06 (2.31)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	29.0 (271)	2.01 (2.25)	N/A	2.01 (2.25)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	30.0 (281)	2.00 (2.24)	N/A	2.00 (2.24)	None

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 20 of 78

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 8									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	26.1 (244)	1.05 (1.17)	N/A	1.05 (1.17)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 0 days after cutting	30.2 (283)	1.01 (1.13)	N/A	1.01 (1.13)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	25.1 (235)	1.00 (1.13)	N/A	1.00 (1.13)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	20.5 (192)	0.99 (1.11)	N/A	0.99 (1.11)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 3 days after cutting	30.0 (281)	1.05 (1.17)	N/A	1.05 (1.17)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 0 days after cutting	21.4 (200)	1.00 (1.12)	N/A	1.00 (1.12)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 5 days after cutting	23.5 (220)	0.98 (1.10)	N/A	0.98 (1.10)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 3 days after cutting	28.7 (269)	1.00 (1.12)	N/A	1.00 (1.12)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Stubble at 2 days after cutting	30.2 (283)	1.01 (1.13)	N/A	1.01 (1.13)	None

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 21 of 78

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 9									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	28.5 (267)	1.04 (1.16)	N/A	1.04 (1.16)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 7 days after cutting	29.8 (279)	0.99 (1.11)	N/A	0.99 (1.11)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	25.7 (241)	1.03 (1.16)	N/A	1.03 (1.16)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	22.2 (208)	1.01 (1.13)	N/A	1.01 (1.13)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 10 days after cutting	29.9 (280)	1.03 (1.16)	N/A	1.03 (1.16)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 7 days after cutting	21.2 (198)	0.99 (1.11)	N/A	0.99 (1.11)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 12 days after cutting	23.8 (223)	1.01 (1.13)	N/A	1.01 (1.13)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 10 days after cutting	27.7 (260)	1.00 (1.12)	N/A	1.00 (1.12)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 9 days after cutting	30.3 (284)	1.01 (1.13)	N/A	1.01 (1.13)	None

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 22 of 78

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State, Region; Year (Trial No.)	EP[1]	Application							Tank Mix Adjuvants
		App. No.	Application Method	Timing	Volume[2] GPA (L/ha)	Rate (lb a.i./A) (kg a.i./ha)	RTI[3] (days)	Total Rate (lb a.i./A) (kg a.i./ha)	
Treatment Plot 10									
Lehigh, PA, Region 1; 2007 (RCN 070062)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	28.5 (267)	1.04 (1.16)	N/A	1.04 (1.16)	None
Grand Forks, ND, Region 5; 2007 (RCN 070063)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 14 days after cutting	29.5 (276)	0.98 (1.10)	N/A	0.98 (1.10)	None
Pepin, WI, Region 5; 2007 (RCN 070064)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 18 days after cutting	25.3 (236)	1.01 (1.13)	N/A	1.01 (1.13)	None
Steele, MN, Region 5; 2007 (RCN 070065)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	21.0 (197)	0.99 (1.11)	N/A	0.99 (1.11)	None
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 17 days after cutting	30.6 (286)	1.03 (1.16)	N/A	1.03 (1.16)	None
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	21.4 (201)	1.00 (1.12)	N/A	1.00 (1.12)	None
Jerome, ID, Region 9; 2007 (RCN 070068)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 20 days after cutting	24.4 (228)	1.03 (1.16)	N/A	1.03 (1.16)	None
Tulare, CA, Region 10; 2007 (RCN 070069)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	29.1 (272)	1.01 (1.13)	N/A	1.01 (1.13)	None
Payette, ID, Region 11; 2007 (RCN 070070)	3.8 lb/gal CS	1	Broadcast Foliar	Vegetative, 16 days after cutting	29.6 (277)	0.99 (1.11)	N/A	0.99 (1.11)	None

[1] EP = End-use Product (BAS 455 38H, 3.8 lb/gal aqueous capsule suspension (CS) formulation)
[2] Spray volume in Gallons per acre or L/ha
[3] RTI = Retreatment Interval (reported as not applicable (N/A) because only one application was made).

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 23 of 78

TABLE B.1.3. Trial Numbers and Geographical Locations.

NAFTA Growing Zones	Alfalfa		
	Submitted	Requested	
		Canada	U.S.
1	1		1
2			1
3			
4			
5	4		6
6			
7	1		1
8			
9	1		1
10	1		1
11	1		1
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
Total	9	N/A	12

According to OPPTS 860.1500 (Crop Field Trials) Guidelines, the recommended number of alfalfa field trials when not part of a crop group is 12. When field trials are conducted with alfalfa as part of a crop group (Non-grass animal feeds) with clover, the recommended number of field trials would be 9 (4 of these should be from Region 5).

B.2. Sample Handling and Preparation

At each site, duplicate treated forage and hay RAC samples (weighing ≥1 kg or 0.5 kg each, respectively) were harvested. Samples of forage were collected at maturity (beginning bloom stage) and samples of hay from forage were allowed to dry to a moisture content of ~10-20% before collection.

The alfalfa forage and hay samples were promptly transferred to freezers (temperature not provided) after collection and were shipped ≤68 days later by freezer truck directly to BASF Agricultural Research Center (Research Triangle Park, NC). All samples were received frozen from the field and were stored in a freezer (<-5°C) at BASF Agricultural Research Center prior to homogenization. The alfalfa RAC samples were homogenized to a consistency appropriate for analysis using commercial processing equipment. The samples were processed with a vertical cutter/mixer with dry ice. The samples were stored frozen in plastic bags. The samples

were later shipped frozen on dry ice via air freight and ground transportation to the analytical laboratory, BASF South America, Global Environmental and Consumer Safety Laboratory (São Paulo, Brazil), where the samples were received frozen and in good condition and were stored in a freezer (<-20°C) until the time of analysis.

B.3. Analytical Methodology

Residues of pendimethalin and its metabolite CL 202347 in alfalfa forage and hay matrices were determined using GENCS (BASF South America) Method SOP-PA.0290, which is a slightly modified version of the BASF Analytical Method Number D0203 (refer to MRID 46391002). Briefly, residues of pendimethalin in/on alfalfa forage and hay samples are extracted with acidic aqueous methanol by homogenization (5 minutes) followed by mechanical shaking (10 minutes at 2000 rpm). An aliquot of the extract is diluted, mixed, and then cleaned-up on a C_{18} solid phase extraction (SPE) column eluted with methanol/water (9:1, v:v). The residues are then diluted with methanol/water (1:1, v:v) and analyzed by HPLC-MS/MS. Ion transitions from *m/z* 282 to 212 (pendimethalin) and *m/z* 298 to 228 (CL 202347) are monitored with MS/MS detection using the positive ionization mode. Quantitation was obtained using an external calibration curve of standards for each analyte.

The working method (SOP-PA.0290) differed from the referenced method (D0203) in the following two ways: the analyzed samples weighed 2 grams instead of 5 grams, and the extraction volume used was 50 mL instead of 100 mL. The HPLC instrumentation and conditions were also different from that suggested/recommended by the method. The HPLC/MS/MS instrument used was an API4000 instead of API3000, and the HPLC System was a 1200 Agilent Technologies instead of a PE LC-200 Micro pump. The injection volume was 25µL instead of 10µL. All other conditions and steps were the same. The expected retention time changed slightly because of the HPLC system used.

The validated limit of quantitation (LOQ) is 0.05 ppm for residues of each analyte in/on alfalfa RAC samples. The LOQ for the combined residues of pendimethalin (parent plus CL 202347) in alfalfa RAC samples is 0.10 ppm.

C. RESULTS AND DISCUSSION

GENCS (BASF South America) method SOP-PA.0290 was validated during a previous study on wheat commodities (MRID 46391002). The method was further validated by measuring the concurrent recoveries of pendimethalin and its metabolite CL 202347 in control samples of alfalfa forage and alfalfa hay fortified at 0.05 or 5.0 ppm. Recoveries for pendimethalin ranged from 72 to 110% in alfalfa forage and from 70 to 110% in alfalfa hay. Recoveries for CL 202347 ranged from 76 to 110% in alfalfa forage and from 70 to 110% in alfalfa hay. Recoveries were corrected, if needed, for apparent residues detected in the associated control samples. Apparent residues were less than the LOD in all control samples. Concurrent method

recovery results are presented in Table C.1. The method was adequate for data collection based on acceptable concurrent method recoveries.

Sample storage conditions and intervals are summarized in Table C.2. The samples were stored frozen from collection through analysis. The storage temperature at the field site was not provided. Samples were stored at <-5°C at the BASF Agricultural Research Center where samples were prepared and at <-20°C at BASF South America where samples were analyzed. The maximum storage interval from collection to extraction was 328 days (10.8 months) for both forage and hay samples. All sample extracts were analyzed within six days of extraction. The stability of pendimethalin residues has been adequately demonstrated on a variety of crops stored frozen for 24 months, including alfalfa forage, hay, and seed (MRIDs 42471903 and 42266301).

Residue data from the field trials are reported in Table C.3. A summary of the residue data is presented in Table C.4.

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 28 ± 2 days, contained maximum combined residues of pendimethalin of 9.91 ppm for the 4 lb ai/A treatment plots, 2.99 ppm for the 2 lb ai/A treatment plots, and 1.58 ppm for the 1 lb ai/A treatment plots. Maximum combined residues of pendimethalin in/on hay samples were 2.54, 2.27, and 2.86 ppm, respectively, for these treatment plots.

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 21 ± 2 days, contained maximum combined residues of pendimethalin in/on forage of 12.00 ppm for the 4 lb ai/A treatment plots, 8.32 ppm for the 2 lb ai/A treatment plots, and 2.48 ppm for the 1 lb ai/A treatment plots. Maximum combined residues in/on hay samples were 24.88, 16.6, and 4.60 ppm, respectively, for these treatment plots.

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 14 ± 2 days, contained maximum combined residues of pendimethalin in/on forage of 50.9 ppm for the 4 lb ai/A treatment plots, 36.9 ppm for the 2 lb ai/A treatment plots, and 5.77 ppm for the 1 lb ai/A treatment plots. Maximum combined residues in/on hay samples were 94.9, 35.7, and 12.3 ppm, respectively, for these treatment plots.

Combined residues of pendimethalin generally declined to significantly lower levels in forage and hay samples collected from subsequent (second and/or third) cuttings. The second cutting occurred 28 ± 2 days after the first cutting, and the third cutting occurred 28 ± 2 days after the second cutting.

Residues of pendimethalin and CL 202347were <0.05 ppm (<LOQ) in/on each of nine untreated control alfalfa forage and hay samples collected at the targeted sampling interval.

TABLE C.1. Summary of Concurrent Recoveries of Pendimethalin and Metabolites.

Matrix	Nominal Spike level (ppm)	Sample size (n)	Range of Recoveries[1] (%)	Mean ± std dev (%)
Pendimethalin				
Alfalfa Forage	0.05	58	72.0 to 110	93.7 ± 9.28
	5.0	33	72.0 to 110	93.2 ± 8.96
Alfalfa Hay	0.05	45	70.0 to 110	92.1 ± 12.0
	5.0	27	80.0 to 110	94.9 ± 7.80
CL 202347				
Alfalfa Forage	0.05	54	76.0 to 110	96.3 ± 10.1
	5.0	30	81.8 to 110	96.4 ± 5.99
Alfalfa Hay	0.05	47	70.0 to 110	86.6 ± 10.6
	5.0	26	84.0 to 110	99.0 ± 5.76

Notes: [1] According to the Study Report, recoveries were corrected for apparent residues (less than the LOQ) in the laboratory control samples as needed.

[2] There were some discrepancies between the number of values and % recoveries reported in the raw data and what was reported in the Study Report's summary table (Table 6). Additionally, it was unclear when recoveries were corrected for residue in the laboratory control samples (which were less than the LOQ). An explanation was not provided. The recoveries presented in this table represent the recoveries provided in the raw residue tables in Appendix C. There were no significant differences in the reported mean percent recoveries and standard deviations between the recoveries in the raw data and the summary table.

TABLE C.2. Summary of Storage Conditions.

Matrix (RAC)	Storage Temperature (°C)[1]	Actual Storage Duration (days)[2]	Interval of Demonstrated Storage Stability (days)
Alfalfa Forage	< -5	177 to 328 days (5.8 to 10.8 months)	24 months in alfalfa forage and hay for both pendimethalin and its metabolite (CL 202347)
Alfalfa Hay	< -5	182 to 328 days (6.0 to 10.8 months)	

Notes: [1] The samples were placed in frozen storage on the day of harvest (or the day of sample collection for hay) at the field test facilities and were shipped frozen 0-68 days later by freezer truck to BASF Agricultural Research Center. The storage temperatures at the field sites were not provided. All samples were received from the field frozen and good condition at BASF Agricultural Research Center and were placed in frozen storage (<-5°C) prior to processing. The samples were homogenized and were later shipped frozen via air freight (on dry ice) to the analytical laboratory, BASF South America, where the samples were received frozen and stored in a freezer (<-20°C) until the time of analysis.

[2] Actual storage duration is from sampling through extraction. The extracts were analyzed within 6 days of extraction.

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)[1, 2]		
						Pendimethalin	CL 202347	Total Pendimethalin
Lehigh, PA, Region 1; 2007 (RCN 070062)	Alfalfa American 403 T	Forage	2	4.16 (4.67)	28	9.75	0.16	9.91
						9.62	0.15	9.77
					63	0.65	0.06	0.71
						0.33	0.05	0.38
					100	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.16 (4.66)	21	0.78	<0.05	<0.83
						0.68	<0.05	<0.73
					56	0.55	0.09	0.64
						0.42	0.06	0.48
					93	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	4.13 (4.63)	14	0.38	<0.05	<0.43
						0.32	<0.05	<0.37
					49	0.38	0.07	0.45
						0.35	0.05	0.40
					86	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			5	2.08 (2.33)	28	0.12	<0.05	<0.17
						0.12	<0.05	<0.17
					63	0.13	<0.05	<0.18
						0.13	<0.05	<0.18
					100	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 28 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Lehigh, PA, Region 1; 2007 (RCN 070062)	Alfalfa American 403 T	Forage	6	2.05 (2.30)	21	0.24	<0.05	<0.29
						0.33	<0.05	<0.38
					56	0.2	<0.05	<0.25
						0.1	<0.05	<0.15
					93	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.06 (2.31)	14	3.54	0.08	3.62
						4.26	0.09	4.35
					49	0.08	<0.05	<0.13
						0.16	<0.05	<0.21
					86	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	1.05 (1.17)	28	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					63	0.12	<0.05	<0.17
						0.13	<0.05	<0.18
					100	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.04 (1.16)	21	0.27	<0.05	<0.32
						0.21	<0.05	<0.26
					56	0.11	<0.05	<0.16
						0.12	<0.05	<0.17
					93	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 29 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Lehigh, PA, Region 1; 2007 (RCN 070062)	Alfalfa American 403 T	Forage	10	1.04 (1.16)	14	2.75	0.06	2.81
						2.31	0.08	2.39
					49	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					86	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
		Hay	2	4.16 (4.67)	28	0.82	0.09	0.91
						0.94	0.09	1.03
					63	0.61	0.10	0.71
						0.70	0.10	0.80
					100	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.16 (4.66)	21	3.16	0.16	3.32
						3.41	0.19	3.60
					56	0.19	0.05	0.24
						0.18	0.05	0.23
					93	0.06	<0.05	<0.11
						0.07	<0.05	<0.12
			4	4.13 (4.63)	14	28.75	0.50	29.25
						26.42	0.49	26.91
					49	0.84	0.12	0.96
						0.93	0.15	1.08
					86	0.08	<0.05	<0.13
						0.08	<0.05	<0.13

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 30 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Lehigh, PA, Region 1; 2007 (RCN 070062)	Alfalfa American 403 T	Hay	5	2.08 (2.33)	28	0.50	0.07	0.57
						0.57	0.09	0.66
					63	0.07	<0.05	<0.12
						0.06	<0.05	<0.11
					100	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			6	2.05 (2.30)	21	1.60	0.12	1.72
						1.63	0.11	1.74
					56	0.28	0.06	0.34
						0.45	0.07	0.52
					93	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.06 (2.31)	14	9.39	0.25	9.64
						9.07	0.26	9.33
					49	0.08	<0.05	<0.13
						0.13	<0.05	<0.18
					86	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	1.05 (1.17)	28	0.16	<0.05	<0.21
						0.16	<0.05	<0.21
					63	0.18	<0.05	<0.23
						0.37	<0.05	<0.42
					100	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 31 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Lehigh, PA, Region 1; 2007 (RCN 070062)	Alfalfa American 403 T	Hay	9	1.04 (1.16)	21	0.76	0.05	0.81
						0.70	<0.05	<0.75
					56	0.06	<0.05	<0.11
						0.05	<0.05	<0.10
					93	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	1.04 (1.16)	14	6.55	0.16	6.71
						5.80	0.15	5.95
					49	0.26	<0.05	<0.31
						0.28	<0.05	<0.33
					86	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
Grand Forks, ND, Region 5; 2007 (RCN 070063)	Alfalfa Multi-F-2-955	Forage	2	4.09 (4.59)	27	0.3	<0.05	<0.35
						0.33	<0.05	<0.38
					56	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					86	0.05	<0.05	<0.10
						0.06	<0.05	<0.11
			3	4.08 (4.58)	20	1.23	0.06	1.29
						1.11	0.05	1.16
					49	0.11	<0.05	<0.16
						0.17	<0.05	<0.22
					79	<0.05	<0.05	<0.10
						0.06	<0.05	<0.11

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 32 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Grand Forks, ND, Region 5; 2007 (RCN 070063)	Alfalfa Multi-F-2-955	Forage	4	4.02 (4.51)	13	10.01	0.19	10.20
						10.59	0.18	10.77
					42	0.05	<0.05	0.1
						<0.05	<0.05	<0.10
					72	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			2.03 (2.28)	27		2.46	<0.05	<2.51
						2.94	<0.05	<2.99
					56	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					86	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			6	2.01 (2.25)	20	2.83	0.09	2.92
						2.91	0.09	3.00
					49	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					79	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.01 (2.25)	13	0.54	<0.05	<0.59
						0.68	<0.05	<0.73
					42	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					72	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 33 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Grand Forks, ND, Region 5; 2007 (RCN 070063)	Alfalfa Multi-F-2-955	Forage	8	1.01 (1.13)	27	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					56	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					86	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	0.99 (1.11)	20	0.2	<0.05	<0.25
						0.17	<0.05	<0.22
					49	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					79	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	0.98 (1.10)	13	0.81	<0.05	<0.86
						1.1	<0.05	<1.15
					42	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					72	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
		Hay	2	4.09 (4.59)	27	1.05	0.12	1.17
						0.87	0.13	1.00
					56	2.15	0.43	2.58
						1.86	0.38	2.24
					86	0.50	<0.05	<0.55
						0.29	<0.05	<0.34

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 34 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Grand Forks, ND, Region 5; 2007 (RCN 070063)	Alfalfa Multi-F-2-955	Hay	3	4.08 (4.58)	20	2.23	0.16	2.39
						2.99	0.22	3.21
					49	2.35	0.46	2.81
						2.40	0.43	2.83
					79	0.47	0.05	0.52
						0.44	<0.05	<0.49
			4	4.02 (4.51)	13	16.33	0.62	16.95
						14.62	0.53	15.15
					42	2.89	0.48	3.37
						2.13	0.34	2.47
					72	0.38	0.05	0.43
						0.40	<0.05	<0.45
			5	2.03 (2.28)	27	0.56	0.08	0.64
						0.64	0.08	0.72
					56	0.67	0.10	0.77
						0.88	0.10	0.98
					86	0.14	<0.05	<0.19
						0.09	<0.05	<0.14
			6	2.01 (2.25)	20	1.59	0.10	1.69
						1.52	0.10	1.62
					49	1.23	0.14	1.37
						1.51	0.15	1.66
					79	0.21	<0.05	<0.26
						0.17	<0.05	<0.22

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 35 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Grand Forks, ND, Region 5; 2007 (RCN 070063)	Alfalfa Multi-F-2-955	Hay	7	2.01 (2.25)	13	5.97	0.21	6.18
						5.28	0.23	5.51
					42	1.86	0.23	2.09
						2.46	0.26	2.72
					72	0.24	<0.05	<0.29
						0.25	<0.05	<0.30
			8	1.01 (1.13)	27	0.37	<0.05	<0.42
						0.18	<0.05	<0.23
					56	0.54	0.07	0.61
						0.31	0.05	0.36
					86	0.11	<0.05	<0.16
						0.10	<0.05	<0.15
			9	0.99 (1.11)	20	0.73	0.07	0.80
						0.64	0.06	0.70
					49	0.94	0.12	1.06
						0.80	0.14	0.94
					79	0.13	<0.05	<0.18
						0.09	<0.05	<0.14
			10	0.98 (1.10)	13	2.04	0.12	2.16
						2.29	0.12	2.41
					42	0.78	0.11	0.89
						0.56	0.09	0.65
					72	0.10	<0.05	<0.15
						0.08	<0.05	<0.13

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 36 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Pepin, WI, Region 5; 2007 (RCN 070064)	Alfalfa DKC 3417RR	Forage	2	4.00 (4.49)	29	0.56	0.06	0.62
						0.91	0.08	0.99
					57	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.08 (4.58)	22	2.95	0.10	3.05
						3.44	0.11	3.55
					50	0.05	<0.05	<0.10
						0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	4.02 (4.51)	13	2.84	0.08	2.92
						2.85	0.09	2.94
					41	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					69	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			5	2.02 (2.27)	29	0.08	<0.05	<0.13
						0.08	<0.05	<0.13
					57	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 37 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Pepin, WI, Region 5; 2007 (RCN 070064)	Alfalfa DKC 3417RR	Forage	6	2.02 (2.27)	22	1.26	0.06	1.32
						1.44	0.06	1.50
					50	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.01 (2.25)	13	1.2	0.06	1.26
						1.46	0.05	1.51
					41	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					69	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	1.00 (1.13)	29	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					57	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.03 (1.16)	22	0.25	<0.05	<0.30
						0.43	<0.05	<0.48
					50	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 38 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Pepin, WI, Region 5; 2007 (RCN 070064)	Alfalfa DKC 3417RR	Forage	10	1.01 (1.13)	13	1.3	0.07	1.37
						1.61	0.07	1.68
					41	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					69	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
		Hay	2	4.00 (4.49)	29	0.93	0.09	1.02
						1.20	0.11	1.31
					57	0.06	<0.05	<0.11
						0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.08 (4.58)	22	8.89	0.31	9.20
						8.97	0.28	9.25
					50	<0.05	<0.05	<0.10
						0.08	<0.05	<0.13
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	4.02 (4.51)	13	7.94	0.26	8.20
						9.19	0.26	9.45
					41	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					69	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 39 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Pepin, WI, Region 5; 2007 (RCN 070064)	Alfalfa DKC 3417RR	Hay	5	2.02 (2.27)	29	0.18	<0.05	<0.23
						0.24	<0.05	<0.29
					57	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			6	2.02 (2.27)	22	4.76	0.21	4.97
						3.54	0.19	3.73
					50	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.01 (2.25)	13	4.19	0.17	4.36
						3.94	0.15	4.09
					41	0.08	<0.05	<0.13
						0.07	<0.05	<0.12
					69	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	1.00 (1.13)	29	0.10	<0.05	0.15
						0.12	<0.05	0.17
					57	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 40 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Pepin, WI, Region 5; 2007 (RCN 070064)	Alfalfa DKC 3417RR	Hay	9	1.03 (1.16)	22	1.66	0.09	1.75
						2.13	0.10	2.23
					50	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	1.01 (1.13)	13	2.62	0.09	2.71
						2.28	0.09	2.37
					41	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					69	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
Steele, MN, Region 5; 2007 (RCN 070065)	Alfalfa Garst 6610	Forage	2	3.99 (4.47)	28	0.28	<0.05	<0.33
						0.10	<0.05	<0.15
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					109	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.02 (4.51)	21	0.77	<0.05	<0.82
						0.75	<0.05	<0.80
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					102	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 41 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Steele, MN, Region 5; 2007 (RCN 070065)	Alfalfa Garst 6610	Forage	4	3.97 (4.45)	14	15.90	0.20	16.10
						14.67	0.23	14.90
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					95	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			5	1.97 (2.21)	28	<0.05	<0.05	<0.10
						0.21	<0.05	<0.26
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					109	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			6	2.01 (2.25)	21	0.23	<0.05	<0.28
						0.27	<0.05	<0.32
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					102	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	1.98 (2.22)	14	3.54	0.10	3.64
						4.95	0.09	5.04
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					95	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 42 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Steele, MN, Region 5; 2007 (RCN 070065)	Alfalfa Garst 6610	Forage	8	0.99 (1.11)	28	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					109	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.01 (1.13)	21	0.16	<0.05	<0.21
						0.16	<0.05	<0.21
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					102	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	0.99 (1.11)	14	1.66	0.05	1.71
						2.02	<0.05	<2.07
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					95	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
		Hay	2	3.99 (4.47)	28	0.21	<0.05	<0.26
						0.16	<0.05	<0.21
					59	0.18	<0.05	<0.23
						0.20	<0.05	<0.25
					109	0.05	<0.05	<0.10
						0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 43 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Steele, MN, Region 5; 2007 (RCN 070065)	Alfalfa Garst 6610	Hay	3	4.02 (4.51)	21	1.13	0.08	1.21
						1.08	0.10	1.18
					52	0.12	<0.05	<0.17
						0.15	<0.05	<0.20
					102	0.46	<0.05	<0.51
						1.05	<0.05	<1.10
			4	3.97 (4.45)	14	19.74	0.57	20.31
						17.94	0.40	18.34
					45	0.22	<0.05	<0.27
						0.18	<0.05	<0.23
					95	0.16	<0.05	<0.21
						0.15	<0.05	<0.20
			5	1.97 (2.21)	28	0.06	<0.05	<0.11
						0.06	<0.05	<0.11
					59	0.07	<0.05	<0.12
						0.08	<0.05	<0.13
					109	0.05	<0.05	<0.10
						0.06	<0.05	<0.11
			6	2.01 (2.25)	21	0.28	<0.05	<0.33
						0.25	<0.05	<0.30
					52	0.05	<0.05	<0.10
						0.12	<0.05	<0.17
					102	0.07	<0.05	<0.12
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 44 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Steele, MN, Region 5; 2007 (RCN 070065)	Alfalfa Garst 6610	Hay	7	1.98 (2.22)	14	6.42	0.23	6.65
						6.36	0.21	6.57
					45	0.09	<0.05	<0.14
						0.07	<0.05	<0.12
					95	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	0.99 (1.11)	28	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					109	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.01 (1.13)	21	0.14	<0.05	0.19
						0.22	<0.05	0.27
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					102	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	0.99 (1.11)	14	2.18	0.09	2.27
						2.59	0.09	2.68
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					95	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 45 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	Alfalfa Magnum 3801	Forage	2	4.18 (4.69)	27	0.31	<0.05	<0.36
						0.28	0.05	0.33
					61	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					90	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.12 (4.62)	20	2.11	0.09	2.20
						3.84	0.12	3.96
					54	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					83	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	4.12 (4.62)	13	12.68	0.26	12.94
						9.38	0.12	9.50
					47	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					76	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			5	2.09 (2.35)	27	0.13	<0.05	<0.18
						0.10	<0.05	<0.15
					61	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					90	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 46 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	Alfalfa Magnum 3801	Forage	6	2.06 (2.31)	20	0.96	0.08	1.04
						1.50	0.09	1.59
					54	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					83	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.06 (2.31)	13	3.59	0.16	3.75
						2.78	0.13	2.91
					47	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					76	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	1.05 (1.17)	27	0.06	<0.05	<0.11
						0.06	<0.05	<0.11
					61	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					90	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.03 (1.16)	20	1.15	0.09	1.24
						1.23	0.09	1.32
					54	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					83	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 47 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	Alfalfa Magnum 3801	Forage	10	1.03 (1.16)	13	1.47	0.09	1.56
						1.52	0.12	1.64
					47	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					76	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
		Hay	2	4.18 (4.69)	27	0.73	0.14	0.87
						0.59	0.09	0.68
					61	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					90	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.12 (4.62)	20	10.86	1.29	12.15
						7.23	0.78	8.01
					54	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					83	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	4.12 (4.62)	13	37.58	3.23	40.81
						29.79	2.46	32.25
					47	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					76	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 48 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	Alfalfa Magnum 3801	Hay	5	2.09 (2.35)	27	0.78	0.14	0.92
						0.87	0.17	1.04
					61	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					90	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			6	2.06 (2.31)	20	5.00	0.54	5.54
						3.32	0.35	3.67
					54	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					83	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.06 (2.31)	13	10.02	0.95	10.97
						9.32	1.01	10.33
					47	<0.05	<0.05	<0.10
						0.05	<0.05	<0.10
					76	---	---	---
						---	---	---
			8	1.05 (1.17)	27	0.15	<0.05	0.20
						0.25	0.05	0.30
					61	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					90	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 49 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Portage la Prairie, MB Canada, Region 5; 2007 (RCN 070066)	Alfalfa Magnum 3801	Hay	9	1.03 (1.16)	20	2.93	0.37	3.30
						3.00	0.31	3.31
					54	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					83	---	---	---
						---	---	---
			10	1.03 (1.16)	13	3.85	0.37	4.22
						3.76	0.41	4.17
					47	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					76	---	---	---
						---	---	---
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)[3]	Alfalfa Algonquin	Forage	2	3:97 (4.46)	29	0.51	0.07	0.58
						0.46	0.06	0.52
					104	0.40	0.09	0.49
						---	---	---
					---	---	---	---
						---	---	---
			3	4.00 (4.49)	22	1.18	0.10	1.28
						2.10	0.17	2.27
					97	1.00	0.19	1.19
						---	---	---
					---	---	---	---
						---	---	---

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 50 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)[3]	Alfalfa Algonquin	Forage	4	3.93 (4.40)	13	14.65	0.37	15.02
						15.21	0.44	15.65
					88	0.96	0.22	1.18
						---	---	---
					---	---	---	---
						---	---	---
			5	2.01 (2.25)	29	0.61	0.10	0.71
						0.53	0.09	0.62
					104	0.28	0.08	0.36
						---	---	---
					---	---	---	---
						---	---	---
			6	1.99 (2.23)	22	0.37	0.05	0.42
						0.17	<0.05	0.22
					97	0.37	0.12	0.49
						---	---	---
					---	---	---	---
						---	---	---
			7	1.98 (2.21)	13	6.23	0.24	6.47
						5.07	0.17	5.24
					88	0.54	0.13	0.67
						---	---	---
					---	---	---	---
						---	---	---

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 51 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)[3]	Alfalfa Algonquin	Forage	8	1.00 (1.12)	29	<0.05	<0.05	<0.10
						0.05	<0.05	<0.10
					104	0.21	0.06	0.27
						---	---	---
					---	---	---	---
						---	---	---
			9	0.99 (1.11)	22	0.27	0.05	0.32
						0.07	<0.05	<0.12
					97	0.17	<0.05	<0.22
						---	---	---
					---	---	---	---
						---	---	---
			10	1.00 (1.12)	13	1.37	0.07	1.44
						1.42	0.06	1.48
					88	0.33	0.09	0.42
						---	---	---
					---	---	---	---
						---	---	---
		Hay	2	3.97 (4.46)	29	2.29	0.25	2.54
						1.04	0.11	1.15
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 52 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)[3]	Alfalfa Algonquin	Hay	3	4.00 (4.49)	22	3.44	0.33	3.77
						2.50	0.27	2.77
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---
			4	3.93 (4.40)	13	29.01	1.87	30.88
						30.10	1.98	32.08
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---
			5	2.01 (2.25)	29	1.30	0.18	1.48
						2.01	0.26	2.27
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---
			6	1.99 (2.23)	22	0.67	0.09	0.76
						0.40	0.06	0.46
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 53 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
314 Dundurn, SK Canada, Region 7; 2007 (RCN 070067)[3]	Alfalfa Algonquin	Hay	7	1.98 (2.21)	13	14.62	0.89	15.51
						16.06	0.84	16.90
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---
			8	1.00 (1.12)	29	0.08	<0.05	<0.13
						0.39	0.08	0.47
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---
			9	0.99 (1.11)	22	0.31	0.08	0.39
						0.66	0.13	0.79
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---
			10	1.00 (1.12)	13	7.07	0.42	7.49
						6.30	0.35	6.65
					---	---	---	---
						---	---	---
					---	---	---	---
						---	---	---

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 54 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Jerome, ID, Region 9; 2007 (RCN 070068)	Alfalfa Pioneer 54Q25	Forage	2	3.98 (4.46)	28	0.21	<0.05	<0.26
						0.13	<0.05	<0.18
					49	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					75	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.00 (4.49)	21	0.71	<0.05	<0.76
						0.07	0.06	0.13
					42	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					68	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	3.99 (4.47)	13	12.96	0.21	13.17
						14.55	0.25	14.80
					34	<0.05	<0.05	<0.10
						0.05	<0.05	<0.10
					60	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			5	2.02 (2.27)	28	0.07	<0.05	<0.12
						0.13	<0.05	<0.18
					49	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					75	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 55 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Jerome, ID, Region 9; 2007 (RCN 070068)	Alfalfa Pioneer 54Q25	Forage	6	2.00 (2.24)	21	0.39	<0.05	<0.44
						0.42	<0.05	<0.47
					42	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					68	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.06 (2.31)	13	5.01	0.10	5.11
						6.84	0.12	6.96
					34	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					60	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	0.98 (1.10)	28	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					49	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					75	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.01 (1.13)	21	0.11	<0.05	<0.16
						0.13	<0.05	<0.18
					42	1.44	0.05	1.49
						1.42	0.05	1.47
					68	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 56 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Jerome, ID, Region 9; 2007 (RCN 070068)	Alfalfa Pioneer 54Q25	Forage	10	1.03 (1.16)	13	1.28	0.05	1.33
						1.40	<0.05	<1.45
					34	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					60	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
		Hay	2	3.98 (4.46)	28	0.29	<0.05	<0.34
						0.24	<0.05	<0.29
					49	0.05	<0.05	<0.10
						0.05	<0.05	<0.10
					75	0.32	<0.05	<0.37
						0.25	<0.05	<0.30
			3	4.00 (4.49)	21	1.34	0.08	1.42
						1.66	0.09	1.75
					42	<0.05	<0.05	<0.10
						0.09	<0.05	<0.14
					68	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	3.99 (4.47)	13	35.41	1.11	36.52
						37.06	0.99	38.05
					34	0.11	<0.05	<0.16
						0.12	<0.05	<0.17
					60	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 57 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Jerome, ID, Region 9; 2007 (RCN 070068)	Alfalfa Pioneer 54Q25	Hay	5	2.02 (2.27)	28	0.33	<0.05	<0.38
						0.37	<0.05	<0.42
					49	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					75	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			6	2.00 (2.24)	21	1.02	0.06	1.08
						1.04	0.07	1.11
					42	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					68	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.06 (2.31)	13	14.11	0.54	14.65
						12.92	0.60	13.52
					34	<0.05	<0.05	<0.10
						0.11	<0.05	<0.16
					60	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	0.98 (1.10)	28	0.06	<0.05	<0.11
						0.08	<0.05	<0.13
					49	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					75	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 58 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Jerome, ID, Region 9; 2007 (RCN 070068)	Alfalfa Pioneer 54Q25	Hay	9	1.01 (1.13)	21	0.33	<0.05	<0.38
						0.27	<0.05	<0.32
					42	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					68	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	1.03 (1.16)	13	4.70	0.24	4.94
						3.45	0.22	3.67
					34	0.05	<0.05	<0.10
						0.06	<0.05	<0.11
					60	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
Tulare, CA, Region 10; 2007 (RCN 070069)	Alfalfa Germain WL 516	Forage	2	3.98 (4.46)	29	0.48	0.05	0.53
						0.30	<0.05	<0.35
					55	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					84	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.07 (4.56)	21	9.16	0.45	9.61
						11.75	0.25	12.00
					47	0.05	<0.05	<0.10
						0.10	<0.05	<0.15
					76	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 59 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Tulare, CA, Region 10; 2007 (RCN 070069)	Alfalfa Germain WL 516	Forage	4	4.04 (4.53)	15	45.35	1.09	46.44
						49.75	1.19	50.94
					41	0.13	<0.05	<0.18
						0.13	<0.05	<0.18
					70	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			5	1.99 (2.23)	29	0.40	0.08	0.48
						0.22	<0.05	<0.27
					55	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					84	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			6	2.02 (2.26)	21	4.09	0.22	4.31
						8.06	0.26	8.32
					47	0.07	<0.05	<0.12
						<0.05	<0.05	<0.10
					76	0.06	<0.05	<0.11
						<0.05	<0.05	<0.10
			7	2.01 (2.25)	15	36.12	0.83	36.95
						26.06	0.52	26.58
					41	0.06	<0.05	<0.11
						0.06	<0.05	<0.11
					70	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 60 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Tulare, CA, Region 10; 2007 (RCN 070069)	Alfalfa Germain WL 516	Forage	8	1.00 (1.12)	29	1.50	0.08	1.58
						0.88	0.07	0.95
					55	0.08	<0.05	<0.13
						0.14	<0.05	<0.19
					84	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.00 (1.12)	21	1.40	0.11	1.51
						2.36	0.12	2.48
					47	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					76	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	1.01 (1.13)	15	3.93	0.16	4.09
						5.55	0.22	5.77
					41	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					70	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
		Hay	2	3.98 (4.46)	29	1.01	0.09	1.10
						0.73	0.11	0.84
					55	0.09	<0.05	<0.14
						0.08	<0.05	<0.13
					84	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 61 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Tulare, CA, Region 10; 2007 (RCN 070069)	Alfalfa Germain WL 516	Hay	3	4.07 (4.56)	21	23.86	0.47	24.33
						24.29	0.59	24.88
					47	0.27	<0.05	<0.32
						0.18	<0.05	<0.23
					76	0.13	<0.05	<0.18
						<0.05	<0.05	<0.10
			4	4.04 (4.53)	15	76.82	1.66	78.48
						93.18	1.72	94.90
					41	0.24	<0.05	<0.29
						0.39	0.05	0.44
					70	0.06	<0.05	<0.11
						<0.05	<0.05	<0.10
			5	1.99 (2.23)	29	0.71	0.08	0.79
						0.99	0.16	1.15
					55	0.08	<0.05	<0.13
						0.08	<0.05	<0.13
					84	<0.05	<0.05	<0.10
						0.05	<0.05	<0.10
			6	2.02 (2.26)	21	11.79	0.28	12.07
						16.16	0.46	16.62
					47	0.14	<0.05	<0.19
						0.14	<0.05	<0.19
					76	0.05	<0.05	<0.10
						0.11	<0.05	<0.16

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 62 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Tulare, CA, Region 10; 2007 (RCN 070069)	Alfalfa Germain WL 516	Hay	7	2.01 (2.25)	15	34.46	0.68	35.14
						35.00	0.73	35.73
					41	0.14	<0.05	<0.19
						0.33	<0.05	<0.38
					70	0.07	<0.05	<0.12
						<0.05	<0.05	<0.10
			8	1.00 (1.12)	29	2.75	0.11	2.86
						2.63	0.11	2.74
					55	0.33	<0.05	<0.38
						0.35	<0.05	<0.40
					84	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.00 (1.12)	21	4.48	0.12	4.60
						3.23	0.18	3.41
					47	0.09	<0.05	<0.14
						<0.05	<0.05	<0.10
					76	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	1.01 (1.13)	15	12.03	0.30	12.33
						11.21	0.26	11.47
					41	0.08	<0.05	<0.13
						0.11	<0.05	<0.16
					70	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 63 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Payette, ID, Region 11; 2007 (RCN 070070)	Alfalfa Agate	Forage	2	3.98 (4.46)	29	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					92	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.04 (4.53)	22	0.05	<0.05	<0.10
						0.05	<0.05	<0.10
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	4.00 (4.49)	15	1.38	<0.05	<1.43
						1.58	<0.05	<1.63
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			5	2.00 (2.24)	29	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					92	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 64 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Payette, ID, Region 11; 2007 (RCN 070070)	Alfalfa Agate	Forage	6	2.05 (2.30)	22	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.00 (2.24)	15	0.77	<0.05	<0.82
						0.80	<0.05	<0.85
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	1.01 (1.13)	29	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					92	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			9	1.01 (1.13)	22	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 65 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Payette, ID, Region 11; 2007 (RCN 070070)	Alfalfa Agate	Forage	10	0.99 (1.11)	15	0.23	<0.05	<0.28
						0.16	<0.05	<0.21
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
		Hay	2	3.98 (4.46)	29	0.13	<0.05	<0.18
						0.11	<0.05	<0.16
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					92	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			3	4.04 (4.53)	22	0.34	<0.05	<0.39
						0.40	<0.05	<0.45
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			4	4.00 (4.49)	15	3.14	0.08	3.22
						3.37	0.09	3.46
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 66 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Payette, ID, Region 11; 2007 (RCN 070070)	Alfalfa Agate	Hay	5	2.00 (2.24)	29	0.07	<0.05	<0.12
						0.07	<0.05	<0.12
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					92	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			6	2.05 (2.30)	22	0.16	<0.05	<0.21
						0.18	<0.05	<0.23
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			7	2.00 (2.24)	15	1.32	0.05	1.37
						1.27	0.05	1.32
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			8	1.01 (1.13)	29	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					59	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					92	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 67 of 78

TABLE C.3. Residue Data from Crop Field Trials with Pendimethalin.

Trial Identification: City, State, Region; Year (Trial No.)	Type Variety	Crop Part	Plot #	Total Rate lb a.i./A (g ai/ha)	PHI (days)	Uncorrected Residue as Parent Equivalents (ppm)		
						Pendimethalin	CL 202347	Total Pendimethalin
Payette, ID, Region 11; 2007 (RCN 070070)	Alfalfa Agate	Hay	9	1.01 (1.13)	22	0.09	<0.05	<0.14
						0.09	<0.05	<0.14
					52	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					85	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
			10	0.99 (1.11)	15	0.44	<0.05	<0.49
						0.42	<0.05	<0.47
					45	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10
					78	<0.05	<0.05	<0.10
						<0.05	<0.05	<0.10

1 LOQ = 0.05 ppm for each analyte. LOQ for total Pendimethalin is 0.10 ppm.
2 Combined residues of pendimethalin (parent + CL 202347), as parent equivalents (MWCF = 281.3/297.3=0.9462). For calculation of combined residues, individual residues <LOQ were assigned a value of 0.05 ppm
3 Some samples were not collected at trial R070067 because of poor weather which prevented the growth of alfalfa after the first cutting.

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 68 of 78

TABLE C.4. Summary of Residue Data from Crop Field Trials with Pendimethalin

Matrix	Total Applic. Rate (lb a.i./A)	PHI [2] (days)	Residue Levels [1] (ppm)						
			n	Min.	Max.	HAFT[3]	Median (STMdR)	Mean (STMR)	Std. Dev.
Pendimethalin									
Alfalfa Forage	4.0	27 – 29	18	<0.05	9.75	9.69	0.31	1.37	3.03
		2nd Cutting (49 – 104)	17	<0.05	0.65	0.49	0.05	0.12	0.17
		3rd Cutting (75 – 109)	16	<0.05	0.06	0.06	<0.05	0.05	0.0
		20 - 22	18	<0.05	11.75	10.46	1.15	2.37	3.18
		2nd Cutting (42 – 97)	17	<0.05	1.00	1.00	0.05	0.17	0.26
		3rd Cutting (68 – 102)	16	<0.05	0.06	0.06	0.05	0.05	0.0
		13 – 15	18	0.32	49.75	47.55	11.64	13.06	13.80
		2nd Cutting (34 – 88)	17	<0.05	0.96	0.96	<0.05	0.15	0.23
		3rd Cutting (60 – 95)	16	<0.05	<0.05	<0.05	NA	NA	NA
	2.0	27 – 29	18	<0.05	2.94	2.7	0.13	0.46	0.83
		2nd Cutting (49 – 104)	17	<0.05	0.28	0.28	<0.05	0.07	0.06
		3rd Cutting (75 – 109)	16	<0.05	<0.05	<0.05	NA	NA	NA
		20 - 22	18	<0.05	8.06	6.08	0.41	1.42	2.02
		2nd Cutting (42 – 97)	17	<0.05	0.37	0.37	<0.05	0.08	0.08
		3rd Cutting (68 – 102)	16	<0.05	0.06	0.06	<0.05	0.05	0.0
		13 – 15	18	0.54	36.12	31.09	3.57	6.30	9.39
		2nd Cutting (34 – 88)	17	<0.05	0.54	0.54	<0.05	0.09	0.12
		3rd Cutting (60 – 95)	16	<0.05	<0.05	<0.05	NA	NA	NA
	1.0	27 – 29	18	<0.05	1.50	1.19	<0.05	0.18	0.38
		2nd Cutting (49 – 104)	17	<0.05	0.21	0.21	<0.05	0.08	0.05
		3rd Cutting (75 – 109)	16	<0.05	<0.05	<0.05	NA	NA	NA
		20 - 22	18	<0.05	2.36	1.88	0.21	0.48	0.63
		2nd Cutting (42 – 97)	17	<0.05	1.44	1.43	<0.05	0.23	0.45
		3rd Cutting (68 – 102)	16	<0.05	<0.05	<0.05	NA	NA	NA
		13 – 15	18	0.16	5.55	4.74	1.45	1.77	1.28
		2nd Cutting (34 – 88)	17	<0.05	0.33	0.33	<0.05	0.07	0.07
		3rd Cutting (60 – 95)	16	<0.05	<0.05	<0.05	NA	NA	NA

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 69 of 78

TABLE C.4. Summary of Residue Data from Crop Field Trials with Pendimethalin

Matrix	Total Applic. Rate (lb a.i./A)	PHI [2] (days)	Residue Levels [1] (ppm)						
			n	Min.	Max.	HAFT[3]	Median (STMdR)	Mean (STMR)	Std. Dev.
Pendimethalin									
Alfalfa Hay	4.0	27 – 29	18	0.11	2.29	1.67	0.78	0.74	0.53
		2nd Cutting (49 – 63)	16	<0.05	2.15	2.01	0.07	0.39	0.66
		3rd Cutting (75 – 109)	16	<0.05	0.50	0.40	<0.05	0.12	0.14
		20 - 22	18	0.34	24.29	24.08	3.08	5.99	7.29
		2nd Cutting (42 – 56)	16	<0.05	2.40	2.38	0.11	0.39	0.78
		3rd Cutting (68 – 102)	16	<0.05	1.05	0.76	<0.05	0.20	0.28
		13 – 15	18	3.14	93.18	85.00	27.59	28.69	23.43
		2nd Cutting (34 – 88)	16	<0.05	2.89	2.51	0.15	0.52	0.83
		3rd Cutting (60 – 95)	16	<0.05	0.40	0.39	<0.05	0.11	0.11
	2.0	27 – 29	18	0.06	2.01	1.66	0.53	0.57	0.50
		2nd Cutting (49 – 63)	16	<0.05	0.88	0.78	0.06	0.15	0.25
		3rd Cutting (75 – 109)	16	<0.05	0.14	0.12	<0.05	0.06	0.02
		20 - 22	18	0.16	16.16	13.98	1.56	3.05	4.32
		2nd Cutting (42 – 56)	16	<0.05	1.51	1.37	<0.05	0.27	0.45
		3rd Cutting (68 – 102)	16	<0.05	0.21	0.19	<0.05	0.07	0.05
		13 – 15	18	1.27	35.00	34.73	9.20	11.10	9.62
		2nd Cutting (34 – 88)	16	<0.05	2.46	2.16	0.08	0.35	0.72
		3rd Cutting (60 – 95)	14	<0.05	0.25	0.25	<0.05	0.08	0.07
	1.0	27 – 29	18	<0.05	2.75	2.69	0.14	0.43	0.83
		2nd Cutting (49 – 63)	16	<0.05	0.54	0.43	<0.05	0.16	0.16
		3rd Cutting (75 – 109)	16	<0.05	0.11	0.11	<0.05	0.06	0.02
		20 - 22	18	<0.05	4.48	3.86	0.68	1.24	1.34
		2nd Cutting (42 – 56)	16	<0.05	0.94	0.87	<0.05	0.16	0.28
		3rd Cutting (68 – 102)	14	<0.05	0.13	0.11	<0.05	0.06	0.02
		13 – 15	18	0.42	12.03	11.62	3.61	4.42	3.26
		2nd Cutting (34 – 88)	16	<0.05	0.78	0.67	<0.05	0.16	0.22
		3rd Cutting (60 – 95)	14	<0.05	0.10	0.09	<0.05	0.06	0.02

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 70 of 78

TABLE C.4. Summary of Residue Data from Crop Field Trials with Pendimethalin

Matrix	Total Applic. Rate (lb a.i./A)	PHI [2] (days)	Residue Levels [1] (ppm)						
			n	Min.	Max.	HAFT[3]	Median (STMdR)	Mean (STMR)	Std. Dev.
CL 202347									
Alfalfa Forage	4.0	27 – 29	18	<0.05	0.16	0.16	<0.05	0.06	0.03
		2nd Cutting (49 – 104)	17	<0.05	0.09	0.09	<0.05	0.05	0.01
		3rd Cutting (75 – 109)	16	<0.05	<0.05	<0.05	NA	NA	NA
		20 - 22	18	<0.05	0.45	0.35	0.06	0.11	0.10
		2nd Cutting (42 – 97)	17	<0.05	0.19	0.19	<0.05	0.06	0.03
		3rd Cutting (68 – 102)	16	<0.05	<0.05	<0.05	NA	NA	NA
		13 – 15	18	<0.05	1.19	1.14	0.19	0.28	0.33
		2nd Cutting (34 – 88)	17	<0.05	0.22	0.22	<0.05	0.06	0.04
		3rd Cutting (60 – 95)	16	<0.05	<0.05	<0.05	NA	NA	NA
	2.0	27 – 29	18	<0.05	0.10	0.09	<0.05	0.06	0.02
		2nd Cutting (49 – 104)	17	<0.05	0.08	0.08	<0.05	0.05	0.01
		3rd Cutting (75 – 109)	16	<0.05	<0.05	<0.05	NA	NA	NA
		20 - 22	18	<0.05	0.26	0.24	<0.05	0.08	0.06
		2nd Cutting (42 – 97)	17	<0.05	0.12	0.12	<0.05	0.05	0.02
		3rd Cutting (68 – 102)	16	<0.05	<0.05	<0.05	NA	NA	NA
		13 – 15	18	<0.05	0.83	0.68	0.10	0.16	0.20
		2nd Cutting (34 – 88)	17	<0.05	0.13	0.13	<0.05	0.05	0.02
		3rd Cutting (60 – 95)	16	<0.05	<0.05	<0.05	NA	NA	NA
	1.0	27 – 29	18	<0.05	0.08	0.07	<0.05	0.05	0.01
		2nd Cutting (49 – 104)	17	<0.05	0.06	0.06	<0.05	0.05	0.00
		3rd Cutting (75 – 109)	16	<0.05	<0.05	<0.05	NA	NA	NA
		20 - 22	18	<0.05	0.12	0.12	<0.05	0.06	0.02
		2nd Cutting (42 – 97)	17	<0.05	<0.05	<0.05	NA	NA	NA
		3rd Cutting (68 – 102)	16	<0.05	<0.05	<0.05	NA	NA	NA
		13 – 15	18	<0.05	0.22	0.19	0.06	0.08	0.05
		2nd Cutting (34 – 88)	17	<0.05	0.09	0.09	<0.05	0.05	0.01
		3rd Cutting (60 – 95)	16	<0.05	<0.05	<0.05	NA	NA	NA

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 71 of 78

TABLE C.4. Summary of Residue Data from Crop Field Trials with Pendimethalin

Matrix	Total Applic. Rate (lb a.i./A)	PHI [2] (days)	Residue Levels [1] (ppm)						
			n	Min.	Max.	HAFT[3]	Median (STMdR)	Mean (STMR)	Std. Dev.
CL 202347									
Alfalfa Hay	4.0	27 – 29	18	<0.05	0.25	0.18	0.09	0.10	0.05
		2nd Cutting (49 – 63)	16	<0.05	0.43	0.40	<0.05	0.10	0.12
		3rd Cutting (75 – 109)	16	<0.05	<0.05	<0.05	NA	NA	NA
		20 - 22	18	<0.05	1.29	1.03	0.20	0.31	0.31
		2nd Cutting (42 – 56)	16	<0.05	0.46	0.44	<0.05	0.10	0.14
		3rd Cutting (68 – 102)	16	<0.05	<0.05	<0.05	NA	NA	NA
		13 – 15	18	0.08	3.23	2.84	0.59	1.05	0.91
		2nd Cutting (34 – 88)	16	<0.05	0.48	0.41	<0.05	0.11	0.13
		3rd Cutting (60 – 95)	16	<0.05	<0.05	<0.05	NA	NA	NA
	2.0	27 – 29	18	<0.05	0.26	0.22	0.07	0.09	0.06
		2nd Cutting (49 – 63)	16	<0.05	0.10	0.10	<0.05	0.06	0.02
		3rd Cutting (75 – 109)	16	<0.05	<0.05	<0.05	NA	NA	NA
		20 - 22	18	<0.05	0.54	0.44	0.10	0.16	0.15
		2nd Cutting (42 – 56)	16	<0.05	0.15	0.15	<0.05	0.06	0.03
		3rd Cutting (68 – 102)	16	<0.05	<0.05	<0.05	NA	NA	NA
		13 – 15	18	<0.05	1.01	0.98	0.25	0.45	0.33
		2nd Cutting (34 – 88)	16	<0.05	0.26	0.25	<0.05	0.07	0.07
		3rd Cutting (60 – 95)	14	<0.05	<0.05	<0.05	NA	NA	NA
	1.0	27 – 29	18	<0.05	0.11	0.11	<0.05	0.06	0.02
		2nd Cutting (49 – 63)	16	<0.05	0.07	0.06	<0.05	0.05	0.00
		3rd Cutting (75 – 109)	16	<0.05	<0.05	<0.05	NA	NA	NA
		20 - 22	18	<0.05	0.37	0.34	0.06	0.11	0.09
		2nd Cutting (42 – 56)	16	<0.05	0.14	0.13	<0.05	0.06	0.03
		3rd Cutting (68 – 102)	14	<0.05	<0.05	<0.05	NA	NA	NA
		13 – 15	18	<0.05	0.42	0.39	0.16	0.20	0.12
		2nd Cutting (34 – 88)	16	<0.05	0.11	0.10	<0.05	0.06	0.02
		3rd Cutting (60 – 95)	14	<0.05	<0.05	<0.05	NA	NA	NA

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 72 of 78

TABLE C.4. Summary of Residue Data from Crop Field Trials with Pendimethalin

Matrix	Total Applic. Rate (lb a.i./A)	PHI [2] (days)	Residue Levels [1] (ppm)						
			n	Min.	Max.	HAFT[3]	Median (STMdR)	Mean (STMR)	Std. Dev.
Total Pendimethalin									
Alfalfa Forage	4.0	27 – 29	18	<0.1	9.91	9.84	0.36	1.43	3.07
		2nd Cutting (49 – 104)	17	<0.1	0.71	0.54	<0.1	0.18	0.18
		3rd Cutting (75 – 109)	16	<0.1	0.11	0.11	<0.1	0.10	0.0
		20 - 22	18	<0.1	12.00	10.81	1.22	2.48	3.26
		2nd Cutting (42 – 97)	17	<0.1	1.19	1.19	<0.1	0.23	0.29
		3rd Cutting (68 – 102)	16	<0.1	0.11	0.11	<0.1	0.10	0.0
		13 – 15	18	0.37	50.94	48.69	11.86	13.34	14.12
		2nd Cutting (34 – 88)	17	<0.1	1.18	1.18	<0.1	0.21	0.27
		3rd Cutting (60 – 95)	16	<0.1	<0.1	<0.1	NA	NA	NA
	2.0	27 – 29	18	<0.1	2.99	2.75	0.18	0.52	0.83
		2nd Cutting (49 – 104)	17	<0.1	0.36	0.36	0.10	0.12	0.07
		3rd Cutting (75 – 109)	16	<0.1	<0.1	<0.1	NA	NA	NA
		20 - 22	18	<0.1	8.32	6.31	0.46	1.50	2.08
		2nd Cutting (42 – 97)	17	<0.1	0.49	0.49	<0.1	0.14	0.10
		3rd Cutting (68 – 102)	16	<0.1	0.11	0.11	<0.1	0.10	0.0
		13 – 15	18	0.59	36.95	31.77	3.70	6.47	9.59
		2nd Cutting (34 – 88)	17	<0.1	0.67	0.67	0.10	0.14	0.14
		3rd Cutting (60 – 95)	16	<0.1	<0.1	<0.1	NA	NA	NA
	1.0	27 – 29	18	<0.1	1.58	1.26	<0.1	0.23	0.39
		2nd Cutting (49 – 104)	17	<0.1	0.27	0.27	<0.1	0.13	0.05
		3rd Cutting (75 – 109)	16	<0.1	<0.1	<0.1	NA	NA	NA
		20 - 22	18	<0.1	2.48	2.00	0.26	0.54	0.66
		2nd Cutting (42 – 97)	17	<0.1	1.49	1.48	<0.1	0.28	0.45
		3rd Cutting (68 – 102)	16	<0.1	<0.1	<0.1	NA	NA	NA
		13 – 15	18	0.21	5.77	4.93	1.52	1.85	1.32
		2nd Cutting (34 – 88)	17	<0.1	0.42	0.42	<0.1	0.12	0.08
		3rd Cutting (60 – 95)	16	<0.1	<0.1	<0.1	NA	NA	NA

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 73 of 78

TABLE C.4. Summary of Residue Data from Crop Field Trials with Pendimethalin

Matrix	Total Applic. Rate (lb a.i./A)	PHI [2] (days)	Residue Levels [1] (ppm)						
			n	Min.	Max.	HAFT[3]	Median (STMdR)	Mean (STMR)	Std. Dev.
Total Pendimethalin									
Alfalfa Hay	4.0	27 – 29	18	0.16	2.54	1.84	0.89	0.84	0.58
		2nd Cutting (49 – 63)	16	<0.1	2.58	2.41	0.12	0.49	0.78
		3rd Cutting (75 – 109)	16	<0.1	0.55	0.45	<0.1	0.17	0.14
		20 - 22	18	0.39	24.88	24.60	3.26	6.29	7.48
		2nd Cutting (42 – 56)	16	<0.1	2.83	2.82	0.16	0.49	0.91
		3rd Cutting (68 – 102)	16	<0.1	1.10	0.81	<0.1	0.25	0.28
		13 – 15	18	3.22	94.90	86.69	28.08	29.73	23.94
		2nd Cutting (34 – 88)	16	<0.1	3.37	2.92	0.20	0.63	0.96
		3rd Cutting (60 – 95)	16	<0.1	0.45	0.44	<0.1	0.16	0.11
	2.0	27 – 29	18	0.11	2.27	1.87	0.60	0.67	0.56
		2nd Cutting (49 – 63)	16	<0.1	0.98	0.88	0.11	0.21	0.27
		3rd Cutting (75 – 109)	16	<0.1	0.19	0.17	0.10	0.11	0.02
		20 - 22	18	0.21	16.62	14.35	1.66	3.21	4.43
		2nd Cutting (42 – 56)	16	<0.1	1.66	1.52	<0.1	0.33	0.48
		3rd Cutting (68 – 102)	16	<0.1	0.26	0.24	<0.1	0.12	0.05
		13 – 15	18	1.32	35.73	35.43	9.48	11.54	9.82
		2nd Cutting (34 – 88)	16	<0.1	2.72	2.41	0.13	0.43	0.78
		3rd Cutting (60 – 95)	14	<0.1	0.30	0.30	<0.1	0.13	0.07
	1.0	27 – 29	18	<0.1	2.86	2.80	0.19	0.49	0.85
		2nd Cutting (49 – 63)	16	<0.1	0.61	0.48	<0.1	0.21	0.17
		3rd Cutting (75 – 109)	16	<0.1	0.16	0.16	<0.1	0.11	0.02
		20 - 22	18	0.14	4.60	4.01	0.77	1.35	1.40
		2nd Cutting (42 – 56)	16	<0.1	1.06	1.00	<0.1	0.22	0.31
		3rd Cutting (68 – 102)	14	<0.1	0.18	0.16	<0.1	0.11	0.02
		13 – 15	18	0.47	12.33	11.90	3.92	4.62	3.34
		2nd Cutting (34 – 88)	16	<0.1	0.89	0.77	<0.1	0.22	0.23
		3rd Cutting (60 – 95)	14	<0.1	0.15	0.14	<0.1	0.11	0.02

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 74 of 78

Notes:

[1] LOQ = 0.05 ppm for each analyte. LOQ for total Pendimethalin was 0.10 ppm.
Statistical calculations were performed using a value of LOQ when residues were reported as <LOQ.
Total pendimethalin residues represent the parent plus CL 202347, expressed as parent equivalents.
[2] Second cutting occurred 28 ± 2 days after the first cutting and the third cutting occurred 28 ± 2 days after the second cutting.
[3] HAFT = Highest Average Field Trial.
NA = Not applicable, not calculated.

EPA's Records Disposition Schedule PEST 361 Scientific Data Reviews HED Records Center - File R170314 - Page 75 of 78

D. CONCLUSION

Data were provided from nine crop field trials on alfalfa conducted in NAFTA Region 1 (PA, one trial), Region 5 (ND, WI, MN, and MB, one trial each), Region 7 (SK, one trial), Region 9 (ID, one trial), Region 10 (CA, one trial), and Region 11 (ID, one trial) during the 2007 growing season. The submitted field trial data are adequate and reflect the use of a single broadcast foliar application of Prowl H_2O Herbicide, formulated as an aqueous capsule suspension with pendimethalin as the active ingredient. Applications were made at a target application rate of 4.0, 2.0, or 1.0 lb ai/A to established alfalfa crops. Samples of forage and hay were cut at maturity targeting 28 ± 2 day PHI (primary cutting), 21 ± 2 day PHI (primary cutting) or 14 ± 2 day PHI (primary cutting). From all plots, samples of forage and hay were also harvested at approximately 28 ± 7 days after first cut of the same alfalfa (second cutting) and 28 ± 7 days after second cut of the same alfalfa (third cutting).

Based on concurrent recoveries, an acceptable method was used for the quantitation of pendimethalin and its metabolite CL 202347 in alfalfa matrices (forage and hay).

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 28 ± 2 days contained maximum combined residues of pendimethalin of 9.91 ppm for the 4 lb ai/A treatment plots, 2.99 ppm for the 2 lb ai/A treatment plots, and 1.58 ppm for the 1 lb ai/A treatment plots. Maximum combined residues of pendimethalin in/on hay samples were 2.54, 2.27, and 2.86 ppm, respectively, for these treatment plots.

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 21 ± 2 days contained maximum combined residues of pendimethalin in/on forage of 12.00 ppm for the 4 lb ai/A treatment plots, 8.32 ppm for the 2 lb ai/A treatment plots, and 2.48 ppm for the 1 lb ai/A treatment plots. Maximum combined residues in/on hay samples were 24.88, 16.6, and 4.60 ppm, respectively, for these treatment plots.

Alfalfa forage treated with a single broadcast foliar postemergence application of pendimethalin and harvested at a PHI of 14 ± 2 days contained maximum combined residues of pendimethalin in/on forage of 50.9 ppm for the 4 lb ai/A treatment plots, 36.9 ppm for the 2 lb ai/A treatment plots, and 5.77 ppm for the 1 lb ai/A treatment plots. Maximum combined residues in/on hay samples were 94.9, 35.7, and 12.3 ppm, respectively, for these treatment plots.

Combined residues of pendimethalin generally declined to significantly lower levels in forage and hay samples collected from subsequent (second and or third) cuttings.

The residue trial was not adversely impacted by the farming practices or environmental conditions of the trials. The crops were grown and maintained according to typical agricultural practices for each geographical region. The crop varieties selected were typical for commercial production in the area.

E. REFERENCES

6F7098 Pendimethalin. Data to Support Full Registration of Prowl® H_2O Herbicide on Cotton and Rice: Residue Data and Permanent Tolerance Proposals for Crayfish, Cotton, and Rice. Summary of Analytical Chemistry and Residue Data. PRIA R17 and R35, D332750, C. Olinger, 3/31/2008

Method Validation of BASF Analytical Method D0203 entitled: "Method for Determination of Pendimethalin (BAS 455 H) and its Metabolite CL 202347 Residues in Wheat Forage, Hay, Grain and Straw using LC/MS/MS," J. Stewart, 2004

Pendimethalin (CL 92553): Freezer Stability of CL 92553 and CL 202347 in Alfalfa Green Forage, Hay and Seed Over a 24-month Period, S. Witkonton, 1992

F. DOCUMENT TRACKING

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