



Office of Prevention, Pesticides,
and Toxic Substances

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SUBJECT: Aquatic exposure EECs for Pendimethalin for Use on Selected Crops in Washington, Oregon, and California

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This memorandum contains the aquatic EECs for selected pendimethalin uses in Washington, Oregon, and California. These uses include almonds, potatoes, peas, and corn. Parent pendimethalin is the only significant non-volatile residue, therefore, the EECs were calculated for parent pendimethalin only. Both aerial and ground applications were modeled at the request of FEAD.

I. General Conclusions

EFED estimated concentrations in surface water using Tier II screening level surface water modeling. These EECs may be used for acute and chronic exposure assessments. The PRZM-EXAMS concentrations ranged from 0.96 to 7.8 ug/L for peak values and 0.08 to 1.4 ug/L for annual mean values (Table 1). Table 2 contains the inputs for the surface water modeling

II. Use Summary

Pendimethalin is a dinitroaniline herbicide registered for use on annual grasses and broadleaf weeds associated with terrestrial food crop and terrestrial non-food crop use groups. It is a cell growth inhibitor that prevents seedling development and is herbicidally active on the roots and coleoptiles of susceptible weeds. Pendimethalin does not control weeds postemergence and must be soil applied. Formulations include a 3.3 emulsifiable concentrate, a 4.0 emulsifiable concentrate, a 60DG water dispersible granule, and a fertilizer formulation. Application rates range from 1.0 to 4.0 lbs ai/A. Total pendimethalin use ranges from 14 to 25 million pounds active ingredient annually, with the largest usage occurring on soybeans, cotton, and corn.

III. Environmental Fate Summary

Pendimethalin dissipates in the environment by binding to soil, metabolizing microbes, and volatilizing. Persistence decreased with increased temperature, increased moisture and decreased soil organic carbon. Pendimethalin residues are tightly bound to soil and sediment particles.

Pendimethalin is stable to sterile hydrolysis, soil photolysis, and anaerobic soil metabolism, but degrades slowly under aqueous photolysis conditions with a calculated half-life of 21 days. Aerobic soil metabolism half-lives range from 42-1322 days with 172 days used for the purpose of exposure assessment. Pendimethalin forms many minor (<10% of applied) degradates that consist primarily of an intact benzene ring with rearranged alkyl groups.

Anaerobic aquatic metabolism half-lives ranged from 6 to 105 days. Aqueous residues of parent pendimethalin and its degradates bind to sediment in anaerobic aquatic metabolism and soil mobility studies. This is consistent with mobility studies which indicated that pendimethalin is essentially immobile in all soils studied.

Terrestrial field dissipation data that are consistent with laboratory data have also been provided. The calculated half-life of pendimethalin in a field study (almond orchard in California) was 34 days. Although the orchard site is not a major use site for pendimethalin, the resulting half-life is consistent with the results from other soil metabolism studies. There do not appear to be any differences in the dissipation pattern between the 3.3 EC and 3.8 CS formulations of pendimethalin, based on similarities in half-lives at similar locations. In LA and MS, the half-lives ranged from 4 to 82 days, with most studies containing half-lives of <20 days. In Indiana, the half-lives ranged from 84-115 days. The difference in half-lives between LA/MS and Indiana can be attributed to the soil and climactic differences between the two locations. No leaching and minimal volatility were observed, which is consistent with the results of the laboratory studies.

The half-life in the aquatic field dissipation study (MRID 44527601) was 15 days, and virtually all residues were present in the top layer of sediment once the field was flooded. These field observations are consistent with the laboratory data that show limited mobility of pendimethalin.

Pendimethalin accumulated readily in bluegill sunfish with BCFs of 1400X in edible portions, 5800X in non-edible portions, and 5100X in whole fish. Depuration was rapid.

Pendimethalin may contaminate surface water from spray drift associated with aerial and ground spray application, runoff from rainfall events, or through irrigation waters (chemigation). However, the high affinity for pendimethalin to sorb to soil and sediment particles should limit concentrations of pendimethalin in surface waters. Pendimethalin was detected in surface water samples at a maximum of 3.66 µg/L in selected Lower Great Lake Tributaries during 1982-1985. In a study of the spatial and temporal distributions of pesticides and nutrients in the Mississippi River and its tributaries, dissolved pendimethalin was not detected in surface water sample above the reporting limit of 0.018 µg/L. However, analysis of surface water monitoring results found in the STORET database, a compilation of monitoring data from various states, showed that the maximum concentration of pendimethalin was 17.6 µg/L (ppb) for a surface water sample collected in Ohio; the next highest reported concentration was 10 µg/L (1-10 µg/L). From the STORET data (excluding the highest Ohio sampling results), the maximum concentrations of pendimethalin in surface water samples range from 0.01 to 3.2 µg/L.

Table 1. Tier II Aquatic Exposure EEC's for Pendimethalin using PRZM 3.12/EXAMS 2.98.04 for Use on Some Outdoor Crops

Parent Pendimethalin ¹	Peak EEC (ppb)	4 Day EEC (ppb)	21 Day EEC (ppb)	60 Day EEC (ppb)	90 Day EEC (ppb)	Annual Mean (ppb)	Overall Mean
California Almonds (ground)	0.96	0.62	0.23	0.15	0.13	0.08	0.04
California Almonds (aerial)	2.8	1.7	0.6	0.3	0.2	0.1	0.1
Oregon/ Washington Potato ² (ground)	1.0	0.61	0.29	0.19	0.17	0.09	0.07
Oregon/ Washington Potato ² (aerial)	4.1	2.5	0.9	0.5	0.4	0.2	0.2
Oregon Peas ³ (ground)	4.2	3.1	1.6	1.3	1.2	0.9	0.7
Oregon Peas ³ (aerial)	4.9	3.2	1.9	1.3	1.2	1.0	0.8
Oregon Corn ⁴ (ground)	6.1	4.4	2.9	1.9	1.7	1.3	1.1
Oregon Corn ⁴ (aerial)	7.8	5.2	2.9	1.9	1.7	1.4	1.2

¹ Parent pendimethalin was the only significant residue in environmental fate studies.

² Used Idaho potato because no scenarios exists for Oregon or Washington potato. The Idaho potato scenario is also on the east side of the Cascade Mountains. Comparison of monthly rainfall averages from Idaho weather (W24156.dvf) and Oregon weather (W24155.dvf) show very similar results, as do the EECs from modeling both weather files with the Idaho scenario.

³ Used Oregon snapbeans because no scenario exists for Oregon Peas. The 3/1/04 email from Sid Abel of EFED to Stephanie Syslo of EFED states snapbeans are good surrogate because snapbean scenario is more conservative.

⁴ Used Oregon sweet corn due to lack of characterization data for Oregon corn scenario. WA corn scenario does not exist. The Prowl label allows for all types of corn. Marion County grows both kinds, and is in the Willamette River Valley, which is more conservative than east of the Cascade Mountains.

Table 2. Surface Water Exposure Inputs for Pendimethalin.

MODEL INPUT VARIABLE	INPUT VALUE	COMMENTS
Application Rate (kg/ha)		Crops and Scenarios
Oregon/Washington potato	1.68	Maximum rates assuming clay soil
Oregon/Washington corn	2.24	Used ID potato because no scenarios exists
Oregon peas	1.68	Used Oregon sweet corn due to lack of characterization data for Oregon corn scenario. WA corn scenario does not exist.
CA almonds	1.15	Used Oregon snapbeans because no scenario exists
		Assumes 100 trees/A. 12 feet in diameter, and area treated is area under trees
		(100 trees/A * $\pi * 6^2 * 3.964 \text{ lb ai./A} * 43560) * 1.12$
		Non-bearing trees only
Maximum No. of Applications		
All modeled crops	1	California DPR 2002 Use Summary
		Ag Census 1997
		Washington State Extension Service
Interval between applications	Not applicable	One application Only
Application Date(s)		
Oregon/Washington potato	April 15	Best Professional Judgement based on use pattern of pendimethalin as preemergence herbicide and planting dates listed in scenario documentation.
Oregon/Washington corn	May 1	
Oregon peas	June 1	
CA almonds	May 15	
Method of application		
Oregon/Washington potato	Ground for all	Best Professional Judgement
Oregon/Washington corn		
Oregon peas		
CA almonds		
Application Efficiency		Per 2/28/02 Input Parameter Guidance
Oregon/Washington potato	0.99 for all	
Oregon/Washington corn	(ground)	
Oregon peas	0.95 for all	
CA almonds	(aerial)	
Spray Drift		Based on 2/28/02 Input Parameter Guidance
Ground Applications	0.01	
Aerial Applications	0.05	
K_{oc}	19,768	Average Koc from 9 soils (MRID 00153765, 43041901), range of 7,011 to 43,863 ml/g
Aerobic Soil Metabolic Half-life (days) parent	516	Half-life of 172 days multiplied by 3. This half-life was determined by considering the temperature and moisture content of tested soils (25 C and 50-75 % Field Capacity). (Walker and Bond, 1977).

Incorporation depth (for ground application only) All outdoor uses	0	Broadcast application
Solubility (mg/L.)	3.75	Solubility multiplied by 10 per 2/28/02 guidance RED Chapter
Aerobic Aquatic Metabolic Half-life (days) parent	136	Anaerobic Aquatic Metabolism half-life*2 Per 2/28/02 guidance
Anaerobic Aquatic Metabolism half-life (days) parent	68	upper 90 th CB on mean using half-lives of 6, 30, 33, 45, 52, 59, 62, 69, and 105 days Pendimethalin RED
Photolysis Half-life (days)	17	MRIDs 00153763;43808201

Appendix A. PRZM-EXAMS Outputs for Modeled Scenarios for Pendimethalin

Oregon Peas (using Oregon Snapbeans) - Ground Application

stored as orsnbean.out

Chemical: pendimethalin

PRZM environment: ORsnbeansC.txt

modified Satday, 12 October 2002 at
17:20:58

EXAMS environment: pond298.exv

modified Thuday, 29 August 2002 at
16:33:30

Metfile: w24232.dvf

modified Wedday, 3 July 2002 at 09:06:10

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961		2.011	1.325	0.683	0.421	0.333
1962		2.883	1.954	1.115	0.869	0.814
1963		2.166	1.449	1.011	0.881	0.813
1964		4.232	3.289	1.619	1.122	0.896
1965		3.060	2.345	1.277	1.125	1.063
1966		2.663	2.136	1.303	1.059	1.049
1967		2.566	2.083	1.213	0.932	0.888
1968		2.486	2.020	1.437	1.175	1.117
1969		2.749	2.010	1.431	1.156	1.090
1970		2.761	1.947	1.467	1.274	1.185
1971		2.453	1.755	1.265	1.109	1.088
1972		2.785	2.331	1.373	1.116	1.055
1973		4.348	3.105	2.099	1.584	1.203
1974		2.811	2.331	1.626	1.376	1.320
1975		2.460	1.785	1.150	0.996	0.957
1976		1.637	1.476	1.058	0.964	0.934
1977		3.086	2.330	1.463	1.044	0.800
1978		2.329	1.535	1.080	0.975	0.916
1979		2.521	1.921	1.207	1.040	0.931
1980		3.992	2.856	1.468	1.173	0.984
1981		2.971	2.097	1.487	1.309	1.207
1982		2.394	1.727	1.346	1.189	1.132
1983		2.020	1.487	1.257	1.111	1.071
1984		3.385	2.303	1.407	1.180	0.982
1985		3.699	2.708	1.378	0.950	0.863
1986		2.217	1.661	1.181	0.856	0.808
1987		4.599	3.290	1.915	1.057	0.878
1988		3.039	2.135	1.298	1.065	1.010
1989		3.900	2.541	1.197	0.858	0.826
1990		2.339	1.649	1.177	1.051	0.982

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032		4.599	3.290	2.099	1.584	1.320
0.065		4.348	3.289	1.915	1.376	1.207

0.097	4.232	3.105	1.626	1.309	1.203	0.912
0.129	3.992	2.856	1.619	1.274	1.185	0.905
0.161	3.900	2.708	1.487	1.189	1.132	0.870
0.194	3.699	2.541	1.468	1.180	1.117	0.869
0.226	3.385	2.345	1.467	1.175	1.090	0.835
0.258	3.086	2.331	1.463	1.173	1.088	0.827
0.290	3.060	2.331	1.437	1.156	1.071	0.802
0.323	3.039	2.330	1.431	1.125	1.063	0.799
0.355	2.971	2.303	1.407	1.122	1.055	0.789
0.387	2.883	2.136	1.378	1.116	1.049	0.774
0.419	2.811	2.135	1.373	1.111	1.010	0.770
0.452	2.785	2.097	1.346	1.109	0.984	0.763
0.484	2.761	2.083	1.303	1.065	0.982	0.760
0.516	2.749	2.020	1.298	1.059	0.982	0.757
0.548	2.663	2.010	1.277	1.057	0.957	0.743
0.581	2.566	1.954	1.265	1.051	0.934	0.729
0.613	2.521	1.947	1.257	1.044	0.931	0.728
0.645	2.486	1.921	1.213	1.040	0.916	0.707
0.677	2.460	1.785	1.207	0.996	0.896	0.685
0.710	2.453	1.755	1.197	0.975	0.888	0.684
0.742	2.394	1.727	1.181	0.964	0.878	0.673
0.774	2.339	1.661	1.177	0.950	0.863	0.662
0.806	2.329	1.649	1.150	0.932	0.826	0.637
0.839	2.217	1.535	1.115	0.881	0.814	0.635
0.871	2.166	1.487	1.080	0.869	0.813	0.624
0.903	2.020	1.476	1.058	0.858	0.808	0.484
0.935	2.011	1.449	1.011	0.856	0.800	0.439
0.968	1.637	1.325	0.683	0.421	0.333	0.102
0.1	4.208	3.080	1.625	1.306	1.201	0.912
					Average of yearly averages:	0.728

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File: orsnbean

Metfile:

w24232.d

vf

PRZM scenario:

ORsnbeansC.txt

EXAMS environment file:

pond298.exv

Chemical Name:

pendimethalin

Description

Variable	Value	Units	Comment
Name			s

Molecular weight

mwt 281 g/mol

Henry's Law Const.

henry atm-m³/mol

Vapor Pressure

vapr 5.60E-11 torr

Solubility

sol 3.75 mg/L

Kd

Kd mg/L

Koc	Koc	19768 mg/L	
Photolysis half-life	kdp	17 days	Half-life
Aerobic Aquatic Metabolism	kbacw	136 days	Halfife
Anaerobic Aquatic Metabolism	kbacs	68 days	Halfife
Aerobic Soil Metabolism	asm	516 days	Halfife
Hydrolysis:	pH 5	0 days	Half-life
Hydrolysis:	pH 7	0 days	Half-life
Hydrolysis:	pH 9	0 days	Half-life
Method:	CAM	1 integer	See PRZM manual
Incorporation Depth:	DEPI	0 cm	
Application Rate:	TAPP	1.68 kg/ha	
Application Efficiency:	APPEFF	0.99 fraction	
Spray Drift	DRFT	0.01 fraction of application rate applied to pond	
Application Date	Date	6-Jan dd/mm or dd/mmm or dd-mm or dd-mmm	
Record	FILTRA		
17:			
	IPSCND	1	
	UPTKF		
Record	PLVKRT		
18:			
	PLDKRT		
	FEXTRC	0.5	
Flag for Index Res. Run	IR	Pond	
Flag for RUNOFF	none	none, monthly or total(average of entire run)	
runoff			
calc.			

Oregon Peas (using Oregon Snapbeans) -Aerial Application

stored as snbeanae.out

Chemical: pendimethalin

PRZM environment: ORsnbeansC.txt

modified Satday, 12 October 2002 at 17:20:58

EXAMS environment: pond298.exv

modified Thuday, 29 August 2002 at 16:33:30

Metfile: w24232.dvf

modified Wedday, 3 July 2002 at 09:06:10

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	4.007	2.327	0.733	0.460	0.378	0.173
1962	4.385	2.740	1.140	0.911	0.856	0.571
1963	4.661	2.996	1.361	0.964	0.944	0.771
1964	4.613	3.229	1.626	1.153	0.921	0.794
1965	4.746	3.080	1.490	1.145	1.083	0.882
1966	4.714	3.047	1.408	1.079	1.067	0.856
1967	4.651	2.980	1.339	0.953	0.910	0.765
1968	5.218	3.341	1.488	1.200	1.148	0.943
1969	4.726	3.056	1.444	1.174	1.106	0.988
1970	4.801	3.131	1.485	1.285	1.198	0.948
1971	4.811	3.141	1.499	1.128	1.105	0.984
1972	4.744	3.076	1.443	1.134	1.072	0.853
1973	4.622	3.058	2.091	1.594	1.233	0.883

1974	4.906	3.236	1.625	1.383	1.328	1.025
1975	4.699	3.034	1.398	1.033	0.977	0.840
1976	4.680	3.016	1.383	0.989	0.958	0.716
1977	4.359	2.755	1.477	1.076	0.845	0.537
1978	4.663	2.994	1.353	0.998	0.939	0.756
1979	4.518	2.852	1.235	1.071	0.967	0.745
1980	4.700	3.050	1.483	1.199	1.002	0.870
1981	4.710	3.044	1.771	1.330	1.238	0.999
1982	4.806	3.135	1.489	1.205	1.148	0.913
1983	4.741	3.074	1.502	1.121	1.086	0.905
1984	4.619	2.972	1.529	1.205	1.019	0.844
1985	4.622	3.129	1.959	1.230	1.040	0.826
1986	4.576	2.909	1.273	0.882	0.835	0.721
1987	4.622	3.226	1.905	1.083	0.902	0.809
1988	4.996	3.339	1.543	1.082	1.026	0.840
1989	4.580	2.913	1.278	0.896	0.850	0.722
1990	4.659	2.989	1.374	1.069	1.000	0.808

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032	5.218	3.341	2.091	1.594	1.328	1.025
0.065	4.996	3.339	1.959	1.383	1.238	0.999
0.097	4.906	3.236	1.905	1.330	1.233	0.988
0.129	4.811	3.229	1.771	1.285	1.198	0.984
0.161	4.806	3.226	1.626	1.230	1.148	0.948
0.194	4.801	3.141	1.625	1.205	1.148	0.943
0.226	4.746	3.135	1.543	1.205	1.106	0.913
0.258	4.744	3.131	1.529	1.200	1.105	0.905
0.290	4.741	3.129	1.502	1.199	1.086	0.883
0.323	4.726	3.080	1.499	1.174	1.083	0.882
0.355	4.714	3.076	1.490	1.153	1.072	0.870
0.387	4.710	3.074	1.489	1.145	1.067	0.856
0.419	4.700	3.058	1.488	1.134	1.040	0.853
0.452	4.699	3.056	1.485	1.128	1.026	0.844
0.484	4.680	3.050	1.483	1.121	1.019	0.840
0.516	4.663	3.047	1.477	1.083	1.002	0.840
0.548	4.661	3.044	1.444	1.082	1.000	0.826
0.581	4.659	3.034	1.443	1.079	0.977	0.809
0.613	4.651	3.016	1.408	1.076	0.967	0.808
0.645	4.622	2.996	1.398	1.071	0.958	0.794
0.677	4.622	2.994	1.383	1.069	0.944	0.771
0.710	4.622	2.989	1.374	1.033	0.939	0.765
0.742	4.619	2.980	1.361	0.998	0.921	0.756
0.774	4.613	2.972	1.353	0.989	0.910	0.745
0.806	4.580	2.913	1.339	0.964	0.902	0.722
0.839	4.576	2.909	1.278	0.953	0.856	0.721
0.871	4.518	2.852	1.273	0.911	0.850	0.716
0.903	4.385	2.755	1.235	0.896	0.845	0.571
0.935	4.359	2.740	1.140	0.882	0.835	0.537
0.968	4.007	2.327	0.733	0.460	0.378	0.173

0.1	4.9	3.2	1.9	1.3	1.2	1.0
					Average of yearly averages:	0.8

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File: snbeanae

Metfile: w24232.dv
f

PRZM scenario: ORsnbeansC.txt

EXAMS environment file: pond298.exv

Chemical Name: pendimethalin

Description	Variable Name	Value	Units	Comments
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Molecular weight	mwt	281	g/mol	
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Henry's Law Const.	henry		atm-m ³ /mol	
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Vapor Pressure	vapr	5.60E-11	torr	
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Solubility	sol	3.75	mg/L	
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Kd	Kd		mg/L	
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Koc	Koc	19768	mg/L	
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Photolysis half-life	kdp	17	days	Half-life
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Aerobic Aquatic Metabolism	kbacw	136	days	Halfife
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Anaerobic Aquatic Metabolism	kbacs	68	days	Halfife
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Aerobic Soil Metabolism	asm	516	days	Halfife
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Hydrolysis:	pH 5	0	days	Half-life
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Hydrolysis:	pH 7	0	days	Half-life
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Hydrolysis:	pH 9	0	days	Half-life
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Method:	CAM	1	integer	See PRZM manual
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Incorporation Depth:	DEPI	0	cm	
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Application Rate:	TAPP	1.68	kg/ha	
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Application Efficiency:	APPEFF	0.95	fraction	
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Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
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Application Date	Date	6-Jan	dd/mm or dd/mmm or dd-mm or dd-mmm	
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Record 17:	FILTRA			
	IPSCND	1		

	UPTKF			
Record 18:	PLVKRT			

	PLDKRT			
	FEXTRC	0.5		

Flag for Index Res. Run	IR	Pond		
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Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	
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Oregon Corn (using Oregon Sweet Corn) Ground Application

stored as orswcorn.out

Chemical: pendimethalin

PRZM environment: ORswcornC.txt

EXAMS environment: pond298.exv

Metfile: w24232.dvf

Water segment concentrations (ppb)

modified Satday, 12 October 2002 at 17:21:42

modified Thuday, 29 August 2002 at 16:33:30

modified Wedday, 3 July 2002 at 09:06:10

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	3.193	2.146	1.165	0.772	0.624	0.187
1962	4.037	2.818	1.710	1.509	1.388	0.824
1963	10.360	7.450	3.383	2.239	1.950	1.368
1964	5.206	4.139	2.217	1.744	1.310	1.012
1965	5.283	3.644	2.078	1.688	1.469	1.157
1966	4.726	3.735	2.114	1.719	1.492	1.152
1967	4.330	3.188	1.941	1.485	1.341	1.079
1968	4.262	3.338	1.866	1.668	1.584	1.240
1969	5.348	4.137	2.064	1.778	1.706	1.278
1970	4.628	3.326	2.140	1.680	1.580	1.236
1971	4.078	2.748	1.803	1.559	1.517	1.293
1972	4.251	3.451	2.104	1.491	1.420	1.143
1973	5.771	4.251	3.042	2.214	1.715	1.168
1974	5.291	3.952	2.581	1.907	1.688	1.298
1975	3.477	2.617	1.856	1.687	1.435	1.203
1976	2.149	1.892	1.483	1.407	1.361	0.907
1977	5.048	3.648	2.207	1.583	1.213	0.665
1978	4.173	2.885	1.657	1.311	1.239	1.017
1979	4.562	3.559	2.077	1.673	1.462	1.064
1980	5.994	4.366	2.381	1.790	1.365	1.098
1981	4.556	3.305	2.135	1.812	1.800	1.290
1982	4.004	2.853	2.078	1.551	1.478	1.132
1983	3.270	2.421	1.911	1.535	1.464	1.190
1984	5.289	3.652	2.077	1.658	1.420	1.164
1985	3.725	2.681	1.500	1.296	1.153	1.010
1986	3.649	2.566	1.892	1.317	1.190	0.991
1987	7.359	5.361	2.932	1.641	1.277	1.059
1988	4.911	3.423	2.030	1.497	1.424	1.085
1989	6.128	4.027	1.959	1.497	1.223	0.969
1990	4.028	2.823	1.886	1.637	1.414	1.103

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032	10.360	7.450	3.383	2.239	1.950	1.368
0.065	7.359	5.361	3.042	2.214	1.800	1.298
0.097	6.128	4.366	2.932	1.907	1.715	1.293
0.129	5.994	4.251	2.581	1.812	1.706	1.290
0.161	5.771	4.139	2.381	1.790	1.688	1.278
0.194	5.348	4.137	2.217	1.778	1.584	1.240

0.226	5.291	4.027	2.207	1.744	1.580	1.236
0.258	5.289	3.952	2.140	1.719	1.517	1.203
0.290	5.283	3.735	2.135	1.688	1.492	1.190
0.323	5.206	3.652	2.114	1.687	1.478	1.168
0.355	5.048	3.648	2.104	1.680	1.469	1.164
0.387	4.911	3.644	2.078	1.673	1.464	1.157
0.419	4.726	3.559	2.078	1.668	1.462	1.152
0.452	4.628	3.451	2.077	1.658	1.435	1.143
0.484	4.562	3.423	2.077	1.641	1.424	1.132
0.516	4.556	3.338	2.064	1.637	1.420	1.103
0.548	4.330	3.326	2.030	1.583	1.420	1.098
0.581	4.262	3.305	1.959	1.559	1.414	1.085
0.613	4.251	3.188	1.941	1.551	1.388	1.079
0.645	4.173	2.885	1.911	1.535	1.365	1.064
0.677	4.078	2.853	1.892	1.509	1.361	1.059
0.710	4.037	2.823	1.886	1.497	1.341	1.017
0.742	4.028	2.818	1.866	1.497	1.310	1.012
0.774	4.004	2.748	1.856	1.491	1.277	1.010
0.806	3.725	2.681	1.803	1.485	1.239	0.991
0.839	3.649	2.617	1.710	1.407	1.223	0.969
0.871	3.477	2.566	1.657	1.317	1.213	0.907
0.903	3.270	2.421	1.500	1.311	1.190	0.824
0.935	3.193	2.146	1.483	1.296	1.153	0.665
0.968	2.149	1.892	1.165	0.772	0.624	0.187

0.1	6.115	4.355	2.897	1.898	1.714	1.293
Average of yearly averages:						1.079

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File: orswcorn

Metfile: w24232.dv
f

PRZM scenario: ORswcornC.txt

EXAMS environment file: pond298.exv

Chemical Name: pendimethalin

Description	Variable	Value	Units	Comments
	Name			

Molecular weight	mwt	281	g/mol	
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Henry's Law Const.	henry		atm-m ³ /mol	
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Vapor Pressure	vapr	5.60E-11	torr	
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Solubility	sol	3.75	mg/L	
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Kd	Kd		mg/L	
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Koc	Koc	19768	mg/L	
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Photolysis half-life	kdp	17	days	Half-life
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Aerobic Aquatic	kbacw	136	days	Halfife
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Metabolism			
Anaerobic Aquatic	kbacs	68 days	Halfife
Metabolism			
Aerobic Soil Metabolism	asm	516 days	Halfife
Hydrolysis:	pH 5	0 days	Half-life
Hydrolysis:	pH 7	0 days	Half-life
Hydrolysis:	pH 9	0 days	Half-life
Method:	CAM	1 integer	See PRZM manual
Incorporation Depth:	DEPI	0 cm	
Application Rate:	TAPP	2.24 kg/ha	
Application Efficiency:	APPEFF	0.99 fraction	
Spray Drift	DRFT	0.01 fraction of application rate applied to pond	
Application Date	Date	5-Jan dd/mm or dd/mm or dd-mm or dd-mmm	
Record 17:	FILTRA		
	IPSCND	1	
	UPTKF		
Record 18:	PLVKRT		
	PLDKRT		
	FEXTRC	0.5	
Flag for Index Res. Run	IR	Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

Oregon Corn (using Oregon sweetcorn)--Aerial Application

stored as swcornae.out

Chemical: pendimethalin

PRZM environment: ORswcornC.txt modified Satday, 12 October 2002 at 17:21:42

EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30

Metfile: w24232.dvf modified Wedday, 3 July 2002 at 09:06:10

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	5.465	3.152	1.181	0.807	0.667	0.286
1962	6.062	3.873	1.777	1.540	1.421	0.936
1963	11.010	8.037	4.058	2.581	2.217	1.465
1964	6.307	4.089	2.213	1.763	1.351	1.126
1965	6.490	4.270	2.098	1.706	1.488	1.266
1966	6.486	4.266	2.114	1.733	1.508	1.257
1967	6.420	4.201	2.088	1.502	1.402	1.182
1968	6.387	4.169	2.033	1.691	1.609	1.337
1969	6.431	4.201	2.086	1.804	1.731	1.376
1970	6.557	4.334	2.191	1.691	1.586	1.336
1971	6.573	4.354	2.170	1.651	1.585	1.394
1972	6.452	4.232	2.314	1.640	1.519	1.249
1973	6.367	4.170	3.009	2.211	1.736	1.273
1974	6.638	4.419	2.564	1.914	1.691	1.398
1975	6.503	4.868	2.348	1.710	1.549	1.307
1976	6.438	4.219	2.039	1.488	1.461	1.027

1977	5.862	3.777	2.204	1.607	1.255	0.793
1978	6.316	4.095	2.442	1.664	1.452	1.125
1979	6.160	4.183	2.396	1.689	1.487	1.168
1980	6.388	4.275	2.371	1.804	1.401	1.205
1981	6.447	4.228	2.152	1.836	1.820	1.391
1982	6.524	4.304	2.119	1.571	1.546	1.238
1983	6.475	4.253	2.352	1.660	1.600	1.291
1984	9.446	6.088	2.620	1.809	1.577	1.267
1985	6.282	4.064	1.888	1.536	1.360	1.121
1986	7.874	5.048	2.223	1.468	1.374	1.101
1987	7.141	5.223	2.891	1.654	1.309	1.163
1988	6.450	4.256	2.079	1.514	1.447	1.190
1989	6.279	4.060	1.960	1.522	1.296	1.079
1990	6.438	4.201	2.003	1.652	1.425	1.205

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032	11.010	8.037	4.058	2.581	2.217	1.465
0.065	9.446	6.088	3.009	2.211	1.820	1.398
0.097	7.874	5.223	2.891	1.914	1.736	1.394
0.129	7.141	5.048	2.620	1.836	1.731	1.391
0.161	6.638	4.868	2.564	1.809	1.691	1.376
0.194	6.573	4.419	2.442	1.804	1.609	1.337
0.226	6.557	4.354	2.396	1.804	1.600	1.336
0.258	6.524	4.334	2.371	1.763	1.586	1.307
0.290	6.503	4.304	2.352	1.733	1.585	1.291
0.323	6.490	4.275	2.348	1.710	1.577	1.273
0.355	6.486	4.270	2.314	1.706	1.549	1.267
0.387	6.475	4.266	2.223	1.691	1.546	1.266
0.419	6.452	4.256	2.213	1.691	1.519	1.257
0.452	6.450	4.253	2.204	1.689	1.508	1.249
0.484	6.447	4.232	2.191	1.664	1.488	1.238
0.516	6.438	4.228	2.170	1.660	1.487	1.205
0.548	6.438	4.219	2.152	1.654	1.461	1.205
0.581	6.431	4.201	2.119	1.652	1.452	1.190
0.613	6.420	4.201	2.114	1.651	1.447	1.182
0.645	6.388	4.201	2.098	1.640	1.425	1.168
0.677	6.387	4.183	2.088	1.607	1.421	1.163
0.710	6.367	4.170	2.086	1.571	1.402	1.126
0.742	6.316	4.169	2.079	1.540	1.401	1.125
0.774	6.307	4.095	2.039	1.536	1.374	1.121
0.806	6.282	4.089	2.033	1.522	1.360	1.101
0.839	6.279	4.064	2.003	1.514	1.351	1.079
0.871	6.160	4.060	1.960	1.502	1.309	1.027
0.903	6.062	3.873	1.888	1.488	1.296	0.936
0.935	5.862	3.777	1.777	1.468	1.255	0.793
0.968	5.465	3.152	1.181	0.807	0.667	0.286
0.1	7.8	5.2	2.9	1.9	1.7	1.4
				Average		1.2

of yearly
averages:

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File: swcornae

Metfile: w24232.d
vf

PRZM scenario: ORswcornC.txt

EXAMS environment file: pond298.exv

Chemical Name: pendimethalin

Description	Variable Name	Value	Units	Comments
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Molecular weight	mwt	281	g/mol	
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Henry's Law Const.	henry		atm-m ³ /mol	
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Vapor Pressure	vapr	5.60E-11	torr	
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Solubility	sol	3.75	mg/L	
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Kd	Kd		mg/L	
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Koc	Koc	19768	mg/L	
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Photolysis half-life	kdp	17	days	Half-life
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Aerobic Aquatic Metabolism	kbacw	136	days	Half-life
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Anaerobic Aquatic Metabolism	kbacs	68	days	Half-life
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Aerobic Soil Metabolism	asm	516	days	Half-life
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Hydrolysis:	pH 5	0	days	Half-life
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Hydrolysis:	pH 7	0	days	Half-life
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Hydrolysis:	pH 9	0	days	Half-life
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Method:	CAM	1	integer	See PRZM manual
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Incorporation Depth:	DEPI	0	cm	
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Application Rate:	TAPP	2.24	kg/ha	
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Application Efficiency:	APPEFF	0.95	fraction	
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Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
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Application Date	Date	5-Jan	dd/mm or dd/mmm or dd-mm or dd-mmm	
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Record	FILTRA			
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17:	IPSCND	1		
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	UPTKF			
Record	PLVKRT			

18:	PLDKRT			
	FEXTRC	0.5		

Flag for Index Res. Run	IR	Pond		
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Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	
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Oregon Potato (using Idaho Potato)–Ground Application

stored as idpotato.out

Chemical: pendimethalin

PRZM environment: IDpotatoC.txt

modified Satday, 12 October 2002 at
17:00:44

EXAMS environment: pond298.exv

modified Thuday, 29 August 2002 at
16:33:30

Metfile: w24156.dvf

modified Wedday, 3 July 2002 at 09:04:38

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.801	0.465	0.148	0.090	0.072	0.040
1962	0.837	0.506	0.183	0.104	0.086	0.051
1963	0.839	0.507	0.272	0.195	0.165	0.082
1964	0.852	0.519	0.228	0.144	0.132	0.071
1965	0.842	0.511	0.188	0.109	0.101	0.064
1966	0.832	0.501	0.179	0.106	0.088	0.044
1967	0.818	0.487	0.170	0.101	0.099	0.046
1968	0.824	0.493	0.171	0.104	0.087	0.054
1969	0.834	0.503	0.181	0.109	0.101	0.055
1970	1.992	1.209	0.467	0.277	0.228	0.111
1971	0.864	0.532	0.281	0.168	0.141	0.101
1972	0.887	0.550	0.222	0.139	0.119	0.090
1973	0.847	0.516	0.193	0.113	0.096	0.069
1974	1.005	0.627	0.257	0.185	0.159	0.084
1975	0.842	0.511	0.189	0.136	0.114	0.068
1976	0.842	0.511	0.308	0.174	0.143	0.085
1977	0.851	0.520	0.197	0.142	0.120	0.065
1978	0.825	0.506	0.203	0.151	0.128	0.062
1979	0.839	0.508	0.185	0.106	0.088	0.050
1980	1.015	0.614	0.224	0.130	0.107	0.082
1981	0.946	0.597	0.255	0.196	0.169	0.092
1982	0.862	0.530	0.207	0.134	0.117	0.080
1983	0.852	0.520	0.198	0.124	0.112	0.081
1984	0.871	0.540	0.286	0.173	0.150	0.094
1985	0.869	0.535	0.239	0.147	0.125	0.065
1986	0.863	0.531	0.208	0.129	0.122	0.068
1987	0.825	0.493	0.171	0.096	0.078	0.041
1988	0.819	0.488	0.166	0.088	0.071	0.036
1989	0.837	0.506	0.183	0.104	0.088	0.047
1990	0.837	0.506	0.183	0.113	0.096	0.050

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032	1.992	1.209	0.467	0.277	0.228	0.111
0.065	1.015	0.627	0.308	0.196	0.169	0.101
0.097	1.005	0.614	0.286	0.195	0.165	0.094
0.129	0.946	0.597	0.281	0.185	0.159	0.092
0.161	0.887	0.550	0.272	0.174	0.150	0.090

0.194	0.871	0.540	0.257	0.173	0.143	0.085
0.226	0.869	0.535	0.255	0.168	0.141	0.084
0.258	0.864	0.532	0.239	0.151	0.132	0.082
0.290	0.863	0.531	0.228	0.147	0.128	0.082
0.323	0.862	0.530	0.224	0.144	0.125	0.081
0.355	0.852	0.520	0.222	0.142	0.122	0.080
0.387	0.852	0.520	0.208	0.139	0.120	0.071
0.419	0.851	0.519	0.207	0.136	0.119	0.069
0.452	0.847	0.516	0.203	0.134	0.117	0.068
0.484	0.842	0.511	0.198	0.130	0.114	0.068
0.516	0.842	0.511	0.197	0.129	0.112	0.065
0.548	0.842	0.511	0.193	0.124	0.107	0.065
0.581	0.839	0.508	0.189	0.113	0.101	0.064
0.613	0.839	0.507	0.188	0.113	0.101	0.062
0.645	0.837	0.506	0.185	0.109	0.099	0.055
0.677	0.837	0.506	0.183	0.109	0.096	0.054
0.710	0.837	0.506	0.183	0.106	0.096	0.051
0.742	0.834	0.506	0.183	0.106	0.088	0.050
0.774	0.832	0.503	0.181	0.104	0.088	0.050
0.806	0.825	0.501	0.179	0.104	0.088	0.047
0.839	0.825	0.493	0.171	0.104	0.087	0.046
0.871	0.824	0.493	0.171	0.101	0.086	0.044
0.903	0.819	0.488	0.170	0.096	0.078	0.041
0.935	0.818	0.487	0.166	0.090	0.072	0.040
0.968	0.801	0.465	0.148	0.088	0.071	0.036
0.1	0.999	0.612	0.285	0.194	0.165	0.094
					Average of yearly averages:	0.068

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File: idpotato

Metfile: w24156.d
vf

PRZM scenario: IDpotatoC.txt

EXAMS environment pond298.exv
file:

Chemical Name: pendimethalin

Description	Variable Name	Value	Units	Comments
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Molecular weight	mwt	281	g/mol	
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Henry's Law Const.	henry		atm-m ³ /mol	
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Vapor Pressure	vapr	5.60E-11	torr	
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Solubility	sol	3.75	mg/L	
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Kd	Kd		mg/L	
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Koc	Koc	19768	mg/L	
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Photolysis half-life	kdp	17	days	Half-life
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Aerobic Aquatic Metabolism	kbacw	136 days	Halfife
Anaerobic Aquatic Metabolism	kbacs	68 days	Halfife
Aerobic Soil Metabolism	asm	516 days	Halfife
Hydrolysis:	pH 5	0 days	Half-life
Hydrolysis:	pH 7	0 days	Half-life
Hydrolysis:	pH 9	0 days	Half-life
Method:	CAM	1 integer	See PRZM manual
Incorporation Depth:	DEPI	0 cm	
Application Rate:	TAPP	1.68 kg/ha	
Application Efficiency:	APPEFF	0.99 fraction	
Spray Drift	DRFT	0.01 fraction of application rate applied to pond	
Application Date	Date	15-4	dd/mm or dd/mm/yy or dd-mm or dd-mm/yy
Record 17:	FILTRA		
	IPSCND	1	
	UPTKF		
Record 18:	PLVKRT		
	PLDKRT		
	FEXTRC	0.5	
Flag for Index Res. Run	IR	Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

Oregon Potato (using Idaho potato)—Aerial Application

stored as potatoae.out

Chemical: pendimethalin

PRZM environment: IDpotatoC.txt

modified Satday, 12 October 2002 at 17:00:44

EXAMS environment: pond298.exv

modified Thuday, 29 August 2002 at 16:33:30

Metfile: w24156.dvf

modified Wedday, 3 July 2002 at 09:04:38

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	4.007	2.333	0.739	0.375	0.294	0.119
1962	4.071	2.415	0.806	0.417	0.336	0.153
1963	4.083	2.427	0.902	0.514	0.421	0.190
1964	4.096	2.439	0.860	0.460	0.385	0.181
1965	4.089	2.433	0.824	0.436	0.363	0.179
1966	4.084	2.428	0.819	0.435	0.350	0.158
1967	4.065	2.410	0.807	0.428	0.361	0.159
1968	4.071	2.416	0.807	0.431	0.349	0.168
1969	4.085	2.429	0.820	0.436	0.362	0.169
1970	4.082	2.427	0.819	0.577	0.484	0.221
1971	4.110	2.455	0.914	0.492	0.402	0.213
1972	4.135	2.474	0.859	0.465	0.380	0.203
1973	4.096	2.440	0.831	0.440	0.358	0.181
1974	4.119	2.453	0.833	0.507	0.414	0.193

1975	4.088	2.433	0.825	0.462	0.376	0.180
1976	4.089	2.433	0.939	0.496	0.400	0.195
1977	4.097	2.440	0.830	0.464	0.377	0.174
1978	4.068	2.412	0.804	0.472	0.385	0.173
1979	4.086	2.431	0.822	0.433	0.351	0.165
1980	4.097	2.441	0.831	0.444	0.363	0.197
1981	4.110	2.453	0.851	0.522	0.431	0.206
1982	4.109	2.453	0.843	0.460	0.376	0.194
1983	4.101	2.446	0.837	0.453	0.376	0.196
1984	4.119	2.464	0.921	0.499	0.409	0.207
1985	4.117	2.458	0.846	0.452	0.370	0.177
1986	4.109	2.452	0.843	0.452	0.366	0.178
1987	4.072	2.414	0.804	0.417	0.334	0.151
1988	4.065	2.408	0.799	0.410	0.326	0.143
1989	4.078	2.421	0.812	0.423	0.340	0.153
1990	4.081	2.424	0.815	0.435	0.352	0.159

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032	4.135	2.474	0.939	0.577	0.484	0.221
0.065	4.119	2.464	0.921	0.522	0.431	0.213
0.097	4.119	2.458	0.914	0.514	0.421	0.207
0.129	4.117	2.455	0.902	0.507	0.414	0.206
0.161	4.110	2.453	0.860	0.499	0.409	0.203
0.194	4.110	2.453	0.859	0.496	0.402	0.197
0.226	4.109	2.453	0.851	0.492	0.400	0.196
0.258	4.109	2.452	0.846	0.472	0.385	0.195
0.290	4.101	2.446	0.843	0.465	0.385	0.194
0.323	4.097	2.441	0.843	0.464	0.380	0.193
0.355	4.097	2.440	0.837	0.462	0.377	0.190
0.387	4.096	2.440	0.833	0.460	0.376	0.181
0.419	4.096	2.439	0.831	0.460	0.376	0.181
0.452	4.089	2.433	0.831	0.453	0.376	0.180
0.484	4.089	2.433	0.830	0.452	0.370	0.179
0.516	4.088	2.433	0.825	0.452	0.366	0.178
0.548	4.086	2.431	0.824	0.444	0.363	0.177
0.581	4.085	2.429	0.822	0.440	0.363	0.174
0.613	4.084	2.428	0.820	0.436	0.362	0.173
0.645	4.083	2.427	0.819	0.436	0.361	0.169
0.677	4.082	2.427	0.819	0.435	0.358	0.168
0.710	4.081	2.424	0.815	0.435	0.352	0.165
0.742	4.078	2.421	0.812	0.433	0.351	0.159
0.774	4.072	2.416	0.807	0.431	0.350	0.159
0.806	4.071	2.415	0.807	0.428	0.349	0.158
0.839	4.071	2.414	0.806	0.423	0.340	0.153
0.871	4.068	2.412	0.804	0.417	0.336	0.153
0.903	4.065	2.410	0.804	0.417	0.334	0.151
0.935	4.065	2.408	0.799	0.410	0.326	0.143
0.968	4.007	2.333	0.739	0.375	0.294	0.119

0.1	4.1	2.5	0.9	0.5	0.4	0.2
					Average of	0.2
					yearly	
					averages:	

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File: potatoae

Metfile: w24156.dv
f

PRZM scenario: IDpotatoC.txt

EXAMS environment file: pond298.exv

Chemical Name: pendimethalin

Description	Variable Name	Value	Units	Comments
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Molecular weight	mwt	281	g/mol	
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Henry's Law Const.	henry		atm-m ³ /mol	
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Vapor Pressure	vapr	5.60E-11	torr	
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Solubility	sol	3.75	mg/L	
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Kd	Kd		mg/L	
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Koc	Koc	19768	mg/L	
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Photolysis half-life	kdp	17	days	Half-life
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Aerobic Aquatic Metabolism	kbacw	136	days	Halfife
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Anaerobic Aquatic Metabolism	kbacs	68	days	Halfife
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Aerobic Soil Metabolism	asm	516	days	Halfife
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Hydrolysis:	pH 5	0	days	Half-life
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Hydrolysis:	pH 7	0	days	Half-life
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Hydrolysis:	pH 9	0	days	Half-life
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Method:	CAM	1	integer	See PRZM manual
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Incorporation Depth:	DEPI	0	cm	
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Application Rate:	TAPP	1.68	kg/ha	
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Application Efficiency:	APPEFF	0.95	fraction	
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Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	15-4	dd/mm or dd/mm or dd-mm or dd-mmm	

Record 17:	FILTRA			
	IPSCND	1		

	UPTKF			
Record 18:	PLVKRT			

	PLDKRT			
	FEXTRC	0.5		

Flag for Index Res. Run	IR	Pond		
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Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	
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California Almonds Ground Application

stored as almonds.out

Chemical: pendimethalin

PRZM environment: CAalmondC.txt

modified Satday, 12 October 2002 at
16:30:38

EXAMS environment: pond298.exv

modified Thuday, 29 August 2002 at
16:33:30

Metfile: w23232.dvf

modified Wedday, 3 July 2002 at 09:04:22

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.549	0.318	0.100	0.047	0.036	0.017
1962	2.302	1.369	0.497	0.255	0.200	0.086
1963	0.668	0.461	0.227	0.163	0.152	0.096
1964	0.659	0.411	0.155	0.092	0.078	0.056
1965	0.578	0.351	0.129	0.073	0.060	0.039
1966	0.562	0.335	0.114	0.059	0.046	0.031
1967	0.910	0.574	0.233	0.130	0.111	0.062
1968	0.566	0.338	0.117	0.061	0.049	0.028
1969	0.587	0.359	0.137	0.090	0.077	0.050
1970	0.964	0.669	0.235	0.106	0.076	0.052
1971	0.589	0.361	0.139	0.081	0.070	0.045
1972	0.560	0.333	0.112	0.057	0.045	0.027
1973	0.589	0.361	0.138	0.090	0.081	0.052
1974	0.566	0.339	0.118	0.065	0.053	0.029
1975	0.565	0.337	0.116	0.061	0.048	0.025
1976	0.554	0.327	0.106	0.052	0.040	0.016
1977	0.555	0.328	0.108	0.053	0.042	0.022
1978	0.594	0.366	0.162	0.110	0.095	0.057
1979	0.579	0.351	0.129	0.072	0.060	0.041
1980	0.578	0.350	0.129	0.073	0.059	0.040
1981	0.657	0.399	0.158	0.093	0.070	0.048
1982	1.024	0.624	0.234	0.149	0.136	0.097
1983	0.613	0.385	0.162	0.108	0.103	0.072
1984	0.578	0.350	0.128	0.071	0.058	0.036
1985	0.558	0.330	0.110	0.055	0.042	0.024
1986	0.862	0.613	0.228	0.127	0.114	0.057
1987	0.569	0.341	0.119	0.063	0.053	0.029
1988	0.560	0.332	0.111	0.056	0.044	0.021
1989	0.557	0.330	0.109	0.055	0.043	0.025
1990	0.641	0.391	0.189	0.107	0.086	0.054

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032	2.302	1.369	0.497	0.255	0.200	0.097
0.065	1.024	0.669	0.235	0.163	0.152	0.096
0.097	0.964	0.624	0.234	0.149	0.136	0.086
0.129	0.910	0.613	0.233	0.130	0.114	0.072
0.161	0.862	0.574	0.228	0.127	0.111	0.062

0.194	0.668	0.461	0.227	0.110	0.103	0.057
0.226	0.659	0.411	0.189	0.108	0.095	0.057
0.258	0.657	0.399	0.162	0.107	0.086	0.056
0.290	0.641	0.391	0.162	0.106	0.081	0.054
0.323	0.613	0.385	0.158	0.093	0.078	0.052
0.355	0.594	0.366	0.155	0.092	0.077	0.052
0.387	0.589	0.361	0.139	0.090	0.076	0.050
0.419	0.589	0.361	0.138	0.090	0.070	0.048
0.452	0.587	0.359	0.137	0.081	0.070	0.045
0.484	0.579	0.351	0.129	0.073	0.060	0.041
0.516	0.578	0.351	0.129	0.073	0.060	0.040
0.548	0.578	0.350	0.129	0.072	0.059	0.039
0.581	0.578	0.350	0.128	0.071	0.058	0.036
0.613	0.569	0.341	0.119	0.065	0.053	0.031
0.645	0.566	0.339	0.118	0.063	0.053	0.029
0.677	0.566	0.338	0.117	0.061	0.049	0.029
0.710	0.565	0.337	0.116	0.061	0.048	0.028
0.742	0.562	0.335	0.114	0.059	0.046	0.027
0.774	0.560	0.333	0.112	0.057	0.045	0.025
0.806	0.560	0.332	0.111	0.056	0.044	0.025
0.839	0.558	0.330	0.110	0.055	0.043	0.024
0.871	0.557	0.330	0.109	0.055	0.042	0.022
0.903	0.555	0.328	0.108	0.053	0.042	0.021
0.935	0.554	0.327	0.106	0.052	0.040	0.017
0.968	0.549	0.318	0.100	0.047	0.036	0.016
0.1	0.958	0.623	0.234	0.147	0.134	0.084
Average of yearly averages:						0.044

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File:	almonds	w23232.d		
Metfile:		vf		
PRZM scenario:		CAAlmondC.txt		
EXAMS environment file:		pond298.exv		
Chemical Name:		pendimethalin		
	Variable	Value	Units	Comment
	Name			s
Description	mwt	281	g/mol	
Molecular weight	henry		atm-m ³ /mol	
Henry's Law Const.	vapr	5.60E-11	torr	
Vapor Pressure	sol	3.75	mg/L	
Solubility	Kd		mg/L	
Kd	Koc	19768	mg/L	
Koc	kdp	17	days	Half-life
Photolysis half-life	kbacw	136	days	Halfife
Aerobic Aquatic Metabolism	kbacs	68	days	Halfife

Anaerobic Aquatic Metabolism	asm	516 days	Halfife
Aerobic Soil Metabolism	pH 5	0 days	Half-life
Hydrolysis:	pH 7	0 days	Half-life
Hydrolysis:	pH 9	0 days	Half-life
Hydrolysis:	CAM	1 integer	See PRZM manual
Method:	DEPI	0 cm	
Incorporation Depth:	TAPP	1.15 kg/ha	
Application Rate:	APPEFF	0.99 fraction	
Application Efficiency:	DRFT	0.01 fraction of application rate applied to pond	
Spray Drift	Date	15-5	dd/mm or dd/mmm or dd-mm or dd-mmm
Application Date	FILTRA		
Record	IPSCND	1	
17:			
	UPTKF		
	PLVKRT		
Record	PLDKRT		
18:			
	FEXTRC	0.5	
	IR	Pond	
Flag for Index Res. Run	RUNOFF	none	none, monthly or total(average of entire run)
Flag for runoff calc.			

California Almonds Aerial Application

stored as almondae.out

Chemical: pendimethalin

PRZM environment: CAalmondC.txt

modified Satday, 12 October 2002 at 16:30:38

EXAMS environment: pond298.exv

modified Thuday, 29 August 2002 at 16:33:30

Metfile: w23232.dvf

modified Wedday, 3 July 2002 at 09:04:22

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.743	1.595	0.503	0.235	0.179	0.063
1962	2.787	1.650	0.548	0.277	0.224	0.142
1963	2.855	1.718	0.612	0.333	0.268	0.154
1964	2.799	1.662	0.559	0.285	0.225	0.115
1965	2.787	1.650	0.547	0.276	0.218	0.100
1966	2.773	1.635	0.533	0.261	0.203	0.091
1967	2.814	1.676	0.572	0.297	0.235	0.120
1968	2.773	1.636	0.534	0.262	0.203	0.086
1969	2.796	1.657	0.554	0.281	0.221	0.109
1970	2.784	1.645	0.542	0.270	0.210	0.110
1971	2.797	1.660	0.557	0.284	0.223	0.104
1972	2.769	1.632	0.529	0.259	0.200	0.087
1973	2.797	1.658	0.554	0.278	0.217	0.110
1974	2.775	1.638	0.536	0.268	0.210	0.089
1975	2.776	1.637	0.534	0.262	0.203	0.083
1976	2.762	1.623	0.521	0.250	0.192	0.073

1977	2.763	1.627	0.526	0.256	0.198	0.082
1978	2.802	1.663	0.559	0.285	0.225	0.116
1979	2.787	1.649	0.546	0.272	0.213	0.099
1980	2.786	1.649	0.546	0.275	0.216	0.100
1981	2.784	1.648	0.545	0.270	0.210	0.107
1982	2.837	1.699	0.594	0.319	0.256	0.156
1983	2.823	1.685	0.581	0.304	0.242	0.132
1984	2.785	1.645	0.542	0.269	0.209	0.092
1985	2.765	1.628	0.526	0.254	0.196	0.082
1986	2.807	1.669	0.565	0.290	0.228	0.116
1987	2.777	1.638	0.535	0.263	0.205	0.088
1988	2.768	1.630	0.528	0.257	0.197	0.079
1989	2.765	1.627	0.525	0.255	0.197	0.084
1990	2.793	1.655	0.604	0.306	0.239	0.112

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032	2.855	1.718	0.612	0.333	0.268	0.156
0.065	2.837	1.699	0.604	0.319	0.256	0.154
0.097	2.823	1.685	0.594	0.306	0.242	0.142
0.129	2.814	1.676	0.581	0.304	0.239	0.132
0.161	2.807	1.669	0.572	0.297	0.235	0.120
0.194	2.802	1.663	0.565	0.290	0.228	0.116
0.226	2.799	1.662	0.559	0.285	0.225	0.116
0.258	2.797	1.660	0.559	0.285	0.225	0.115
0.290	2.797	1.658	0.557	0.284	0.224	0.112
0.323	2.796	1.657	0.554	0.281	0.223	0.110
0.355	2.793	1.655	0.554	0.278	0.221	0.110
0.387	2.787	1.650	0.548	0.277	0.218	0.109
0.419	2.787	1.650	0.547	0.276	0.217	0.107
0.452	2.787	1.649	0.546	0.275	0.216	0.104
0.484	2.786	1.649	0.546	0.272	0.213	0.100
0.516	2.785	1.648	0.545	0.270	0.210	0.100
0.548	2.784	1.645	0.542	0.270	0.210	0.099
0.581	2.784	1.645	0.542	0.269	0.210	0.092
0.613	2.777	1.638	0.536	0.268	0.209	0.091
0.645	2.776	1.638	0.535	0.263	0.205	0.089
0.677	2.775	1.637	0.534	0.262	0.203	0.088
0.710	2.773	1.636	0.534	0.262	0.203	0.087
0.742	2.773	1.635	0.533	0.261	0.203	0.086
0.774	2.769	1.632	0.529	0.259	0.200	0.084
0.806	2.768	1.630	0.528	0.257	0.198	0.083
0.839	2.765	1.628	0.526	0.256	0.197	0.082
0.871	2.765	1.627	0.526	0.255	0.197	0.082
0.903	2.763	1.627	0.525	0.254	0.196	0.079
0.935	2.762	1.623	0.521	0.250	0.192	0.073
0.968	2.743	1.595	0.503	0.235	0.179	0.063
0.1	2.8	1.7	0.6	0.3	0.2	0.1
Average of						0.1

yearly
averages:

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File: almondae

Metfile: w23232.dv
f

PRZM scenario: CAalmondC.txt

EXAMS environment file: pond298.exv

Chemical Name: pendimethalin

Description	Variable	Value	Units	Comments
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	Name			
Molecular weight	mwt	281	g/mol	
Henry's Law Const.	henry		atm-m ³ /mol	
Vapor Pressure	vapr	5.60E-11	torr	
Solubility	sol	3.75	mg/L	
Kd	Kd		mg/L	
Koc	Koc	19768	mg/L	
Photolysis half-life	kdp	17	days	Half-life
Aerobic Aquatic Metabolism	kbacw	136	days	Half-life
Anaerobic Aquatic Metabolism	kbacs	68	days	Half-life
Aerobic Soil Metabolism	asm	516	days	Half-life
Hydrolysis:	pH 5	0	days	Half-life
Hydrolysis:	pH 7	0	days	Half-life
Hydrolysis:	pH 9	0	days	Half-life
Method:	CAM	1	integer	See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.15	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	15-5	dd/mm or dd/mm/yy or dd-mm or dd-mm/yy	
Record 17:	FILTRA			
	IPSCND	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	