

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



OFFICE OF PESTICIDE PROGRAMS,

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MEMORANDUM

SUBJECT: Drinking Water Assessment for Flumetsulam for Uses on Field Corn and Soybeans

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and
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This memo provides the estimated drinking water concentrations from surface water and ground water sources for assisting Health and Effects Division in determining the potential risk to human health. The drinking water assessment is based solely on model-estimated exposure concentrations in surface water and ground water.

Flumetsulam is a selective herbicide for use to control broadleaf weeds in soybeans and field corn. It belongs to the triazolopyrimidine chemical family. The physical chemical properties of flumetsulam are included as Attachment 1. The mode of action is similar to the sulfonylurea herbicides, which are ALS (Acetolactate synthase) inhibitors. Flumetsulam can be applied alone, such as in Python® or Broadstrike®, or applied in formulation with other active ingredients, such as in Hornet® (flumetsulam + clopyralid), Accent Gold® (flumetsulam + clopyralid +

Nicosulfuron), Broadstrike + Dual® (flumetsulam + metolachlor), Broadstrike + Treflan® (flumetsulam + trifluralin) and others. Since only flumetsulam will be considered in this drinking water assessment, the maximum allowable application rate for flumetsulam alone of 0.07 lb a.i./acre will be used to simulate corn and soybeans uses. Both aerial and ground application are allowed in the labels. The exposure concentrations of drinking water were estimated for aerial applications, as drift from aerial applications result in higher exposure concentrations in surface water than ground applications.

The estimated drinking water concentrations of flumetsulam in surface water are summarized in Table 1. Among EFED’s standard crop scenarios, there are nine scenarios for corn and only one for soybeans. The Mississippi corn scenario predicts the highest 1-in-10 year peak concentrations of 2.03 µg/L, whereas the North Dakota corn scenario gives the highest 1-in-10 annual mean of 0.59 µg/L, and overall annual mean of 0.34 µ/L. Table 2 summarizes the estimated drinking water concentrations of flumetsulam in ground water. Both acute and chronic estimates are 0.823 µg/L.

Table 1. Estimated Drinking Water Concentrations of Flumetsulam from Surface Water Sources. Simulation based on aerial application and the water values are adjusted with percent crop area factor (0.46 for corn and 0.41 for soybeans). Concentrations are in µg/L (ppb)

Agricultural Commodity/State	1-in-10 yr Peak	1-in-10 yr Annual Mean	Overall Annual Mean Value
Corn / California	0.59	0.34	0.19
Corn / Illinois	1.01	0.30	0.22
Corn / Mississippi	2.03	0.46	0.23
Corn /East North Carolina	0.96	0.30	0.16
Corn / West North Carolina	0.90	0.23	0.12
Corn / North Dakota	1.22	0.59	0.34
Corn / Ohio	0.85	0.29	0.17
Corn / Pennsylvania	1.15	0.48	0.28
Corn / Texas	1.16	0.28	0.13
Soybeans / Mississippi	1.03	0.22	0.14

Table 2. Estimated Drinking Water Concentrations of Flumetsulam from Ground Water Sources. Concentrations are in $\mu\text{g/L}$ (ppb)

Acute	0.823
Chronic	0.823

Models, Scenarios, and Input Parameters Used Estimate Concentrations of Flumetsulam

The estimated drinking water concentrations from surface water sources were calculated using Tier II PRZM (Pesticide Root Zone Model) and EXAMS (Exposure Analysis Modeling System). PRZM is used to simulate pesticide transport as a result of runoff and erosion from an agricultural field and EXAMS estimates environmental fate and transport of pesticides in surface water and using the linkage program shell - PE4v01 (dated 08/13/2003), which incorporates the standard scenarios developed by EFED.

Linked crop-specific scenarios and meteorological data were used to estimate exposure as a result of uses on field corn and soybeans. Simulations were done using the Index Reservoir scenario in EXAMS, which is a surrogate for a drinking water source drawn from surface water. Weather and agricultural practices are simulated over 30 years so that the 1-in10 year exceedence probability at the site can be estimated. The values generated by the models for drinking water were multiplied by a crop area factor (PCA), which accounts for the fact that it is unlikely for any basin to be completely planted to an agricultural crop. The maximum PCA for corn is 0.46 and the value for soybeans is 0.41.

Concentrations in ground water were estimated using the Tier I SCI-GROW (Screening Concentration In Ground Water) model.

For further information on these models see,

<http://www.epa.gov/oppefed1/models/water/index.htm>

Surface water

Nine standard scenarios for corn and one for soybeans were simulated for this drinking water assessment. These scenarios are briefly identified in Table 3. Since flumetsulam applications are simulated as pre-plant application, the scenario specific pre-planting dates are also included in Table 3.

Table 3. Scenarios Used to Estimate Drinking Water Concentrations of Flumetsulam from Surface Water Sources

CA - Corn	MLRA 17, Stanislaus/San Joaquin Counties, Metfile: W23232.dvf, Soil: Madera Loam	Pre-planting Date: 3/24
IL - Corn	MLRA 108, Mclean County, Metfile: W14923.dvf, Soil: Adair Clay Loam	Pre-planting Date: 4/17
MS - Corn	MLRA 134, Southern MS Valley Upland, Metfile: W13893.dvf, Soil: Grenada Silt Loam	Pre-planting Date: 3/28
NC (east) - Corn	MLRA 133, Pitt County, Metfile: W13722.dvf, Soil: Craven Silt Loam	Pre-planting Date: 3/28
NC (west) - Corn	MLRA 130, Henderson County, Metfile: W03812.dvf, Soil: Chewacla Loam	Pre-planting Date 4/11:
ND - Corn	MLRA 56, Red River Valley, Pembina County, Metfile: W14914.dvf, Soil: Bearden Silty Clay Loam	Pre-planting Date: 4/20
OH - Corn	MLRA 111, Darke and Rickaway Counties, Metfile: W93815.dvf, Soil: Cardington Silt Loam	Pre-planting Date: 4/16
PA - Corn	MLRA 148, Lancaster County, Metfile: W14737.dvf, Soil: Hagerstown Silt Loam	Pre-planting Date: 4/05
TX - Corn	MLRA 87, Texas Claypan Area, Milam County, Metfile: W13958.dvf, Soil: Axtell Sandy Loam	Pre-planting Date: 2/24
MS - Soybeans	MRLA 134, Yazoo County, Metfile: W13893, Soil: Loring Silt Loam	Pre-planting Date: 3/31

Ground Water

SCI-GROW is a regression model, which is not designed for specific scenario or specific crop.

Input Parameters

The appropriate PRZM, EXAMS, and SCI-GROW input parameters were selected from the environmental fate data submitted by the petitioner and in accordance with US EPA-OPP EFED water model parameter selection guidelines, Guidance for Selecting Input Parameters in Modeling the Environmental Fate and Transport of Pesticides, Version II, February 28, 2002.

Attachment 2 presents the input parameters used in the PRZM, EXAMS, and SCI-GROW

models.

Outputs

The output files of CA corn and MS soybeans are included in Attachment 3.

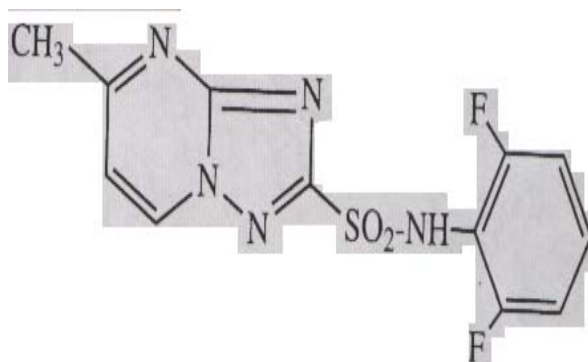
Attachment 1:

Product Chemistry of Flumetsulam

Molecular Formula: $C_{12}H_9F_2N_5O_2S$

Molecular Weight: 325.3

Molecular Structure:



Water Solubility: 5650 mg/L @ pH 7.0 (25 °C)
49.1 mg/L @ pH 2.5 (25 °C)

Vapor Pressure: 0.8×10^{-15} mmHg (20 °C)

log Kow: 0.21 @ pH 7

pKa: 4.6

Attachment 2: Input values of PRZM, EXAMS, and SCIGROW

Table 2-1. Input Parameters for PRZM with Flumetsulam (version 3.12, dated 05/07/1998)

Variable (units)	Variable Description	Input Value	Source of Info/Reference
DWRATE(1) ¹ (day ⁻¹)	Dissolved phase pesticide decay rate in surface horizon	DWRATE(1) = DSRATE(1) The 90 th percentile half-life value of 98.9 days	Aerobic soil metabolism half-life values of 23, 60, 93, and 102 days
DSRATE(1) ¹ (day ⁻¹)	Adsorbed phase pesticide decay rate in surface horizon		
DWRATE(2) (day ⁻¹) DWRATE(3) (day ⁻¹)	Dissolved phase pesticide decay rate in 1 st , and 2 nd subsurface horizon	DWRATE(2) = DSRATE(2) The 90 th percentile half-life value of 98.9 days DWRATE(3) = DSRATE(3)	same as above
DSRATE(2) (day ⁻¹) DSRATE(3) (day ⁻¹)	Adsorbed phase pesticide decay rate in 1 st and 2 nd subsurface horizon	The 90 th percentile half-life value of 98.9 days	
KD(1) KD(2) KD(3) (cm ³ gm ⁻¹ or mL g ⁻¹ or L kg ⁻¹)	Pesticide partition or distribution coefficients for each horizon	assume a mean KOC of 27.23	Mobility - Adsorption/Desorption study (GLN 163-1) 42, 24, 21, 5, 31, 18, 32, 71, 13, 47, 24, 10, 21, 74, 13, 10, 17, 10, 38, 39, 24, 15
PLDKRT (day ⁻¹)	Foliar decay rate	not used, since pre-plant application were simulated	
TAPP (kg ha ⁻¹)	Application rate	0.07 lb a.i./ac	Product label
APPEFF (decimal)	Application efficiency	0.95 for aerial spray	input guidance document
DRFT	Spray drift fraction	0.16 for aerial spray for index reservoir	input guidance document

Table 2-2. Input Parameters for EXAMS with Flumetsulam (version 2.98, dated 07/18/2002)

Variable (units)	Variable Description	Input Value	Source of Info/Reference
HENRY (atm·m ³ ·mole ⁻¹)	Henry's law constant	no input, let EXAMS compute	
KBACW ¹ (cfu/mL) ⁻¹ hour ⁻¹	Bacterial biolysis in water column	2 x 98.8 days	2x of soil aerobic metabolism half-life
KBACS ¹ (cfu/mL) ⁻¹ hour ⁻¹	Bacterial biolysis in benthic sediment	183 days input as the half-life	aquatic anaerobic half-life of 183 days
KDP (hour ⁻¹)	Direct photolysis	0.0	stable
KBH (mole ⁻¹ hour ⁻¹)	Base hydrolysis	0.0	stable
KNH (hour ⁻¹)	Neutral hydrolysis	0.0	
KAH (mole ⁻¹ hour ⁻¹)	Acid hydrolysis	0.0	
KOC (mL g ⁻¹ O.C.)	Partition coefficient for organic carbon	27.23	average value
MWT (g mole ⁻¹)	Molecular weight	325.3	product chemistry
SOL (mg L ⁻¹)	Aqueous solubility	5650	product chemistry
QUANT	Reaction quantum yield for direct photolysis	1.0	
VAPR (torr)	Vapor pressure	0.8 x 10 ⁻¹⁵	product chemistry

Table 2-3. Input Parameters for SCIGROW (version 2.3, dated 07/29/2003)

Variable Description	Input Value
Soil half-life (day)	mean value of 69.5 days (23, 60, 93, and 102 days)
Pesticide partition or distribution coefficients, Koc	5 (greater than a three-fold variation in all values: 42, 24, 21, 5, 31, 18, 32, 71, 13, 47, 24, 10, 21, 74, 13, 10, 17, 10, 38, 39, 24, 15)
Application rate	0.07 lb a.i./ac

Attachment 3 Output files (only CA corn and MS soybeans are attached)

stored as CAcornF.out

Chemical: Flumetsulam

PRZM environment: CAcornC.txt modified Satday, 12 October 2002 at 16:32:58

EXAMS environment: ir298.exv modified Thuday, 29 August 2002 at 15:34:12

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	0.4578		0.4529	0.436	0.4001	0.3741 0.189
1962	0.5462		0.5418	0.5225	0.4794	0.4486 0.285
1963	4.089	4.056	3.919	3.625	3.398	1.797
1964	1.29	1.28	1.237	1.141	1.071	0.7738
1965	0.7561		0.7498	0.7327	0.6825	0.6411 0.4028
1966	0.6175		0.6124	0.5901	0.5405	0.5049 0.3028
1967	0.8766		0.8697	0.8443	0.7915	0.7428 0.4186
1968	0.6342		0.6289	0.6064	0.557	0.521 0.3135
1969	1.164	1.154	1.113	1.02	0.9516	0.5264
1970	0.6919		0.6861	0.6621	0.6096	0.5696 0.3532
1971	0.8215		0.8148	0.7862	0.7263	0.6817 0.3866
1972	0.6214		0.6159	0.5935	0.5454	0.5098 0.3042
1973	0.5813		0.5766	0.5561	0.5094	0.4746 0.2732
1974	0.5696		0.5648	0.5455	0.5024	0.4707 0.2722
1975	0.5725		0.568	0.549	0.5068	0.4736 0.2696
1976	0.587	0.5819	0.5609	0.5366	0.5047	0.2867
1977	0.5778		0.5731	0.5527	0.5154	0.4875 0.286
1978	0.5769		0.5719	0.5601	0.5239	0.4911 0.284
1979	0.9037		0.896	0.8639	0.7934	0.7405 0.411
1980	0.7691		0.7629	0.7384	0.6806	0.6387 0.3778
1981	0.7075		0.7018	0.6772	0.6266	0.5869 0.3414
1982	0.7302		0.7241	0.7027	0.6494	0.6121 0.3582
1983	0.6148		0.6097	0.5887	0.5449	0.5111 0.3031
1984	0.5752		0.5701	0.5519	0.5068	0.4722 0.2691
1985	0.6113		0.6064	0.5848	0.5387	0.5039 0.2858
1986	0.6485		0.6428	0.6192	0.5792	0.5482 0.3171
1987	0.5934		0.5884	0.5669	0.5183	0.4829 0.2912
1988	0.8583		0.8505	0.8206	0.7491	0.6953 0.4112
1989	2.174	2.155	2.076	1.901	1.774	0.9552
1990	0.8833		0.8761	0.8445	0.7743	0.7313 0.4893

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032258064516129	4.089	4.056	3.919	3.625	3.398	1.797
0.0645161290322581		2.174	2.155	2.076	1.901	1.774 0.9552
0.0967741935483871		1.29	1.28	1.237	1.141	1.071 0.7738
0.129032258064516	1.164	1.154	1.113	1.02	0.9516	0.5264
0.161290322580645	0.9037		0.896	0.8639	0.7934	0.7428 0.4893
0.193548387096774	0.8833		0.8761	0.8445	0.7915	0.7405
0.4186						
0.225806451612903	0.8766		0.8697	0.8443	0.7743	0.7313
0.4112						
0.258064516129032	0.8583		0.8505	0.8206	0.7491	0.6953
0.411						
0.290322580645161	0.8215		0.8148	0.7862	0.7263	0.6817
0.4028						
0.32258064516129	0.7691		0.7629	0.7384	0.6825	0.6411
0.3866						
0.354838709677419	0.7561		0.7498	0.7327	0.6806	0.6387
0.3778						

0.387096774193548	0.7302	0.7241	0.7027	0.6494	0.6121
0.3582					
0.419354838709677	0.7075	0.7018	0.6772	0.6266	0.5869
0.3532					
0.451612903225806	0.6919	0.6861	0.6621	0.6096	0.5696
0.3414					
0.483870967741936	0.6485	0.6428	0.6192	0.5792	0.5482
0.3171					
0.516129032258065	0.6342	0.6289	0.6064	0.557	0.521
0.548387096774194	0.6214	0.6159	0.5935	0.5454	0.5111
0.3042					
0.580645161290323	0.6175	0.6124	0.5901	0.5449	0.5098
0.3031					
0.612903225806452	0.6148	0.6097	0.5887	0.5405	0.5049
0.3028					
0.645161290322581	0.6113	0.6064	0.5848	0.5387	0.5047
0.2912					
0.67741935483871	0.5934	0.5884	0.5669	0.5366	0.5039
0.2867					
0.709677419354839	0.587	0.5819	0.5609	0.5239	0.4911
0.741935483870968	0.5813	0.5766	0.5601	0.5183	0.4875
0.2858					
0.774193548387097	0.5778	0.5731	0.5561	0.5154	0.4829
0.285					
0.806451612903226	0.5769	0.5719	0.5527	0.5094	0.4746
0.284					
0.838709677419355	0.5752	0.5701	0.5519	0.5068	0.4736
0.2732					
0.870967741935484	0.5725	0.568	0.549	0.5068	0.4722
0.903225806451613	0.5696	0.5648	0.5455	0.5024	0.4707
0.2696					
0.935483870967742	0.5462	0.5418	0.5225	0.4794	0.4486
0.2691					
0.967741935483871	0.4578	0.4529	0.436	0.4001	0.3741
					0.189
0.1	1.2774	1.2674	1.2246	1.1289	1.05906
					0.74906
					Average of yearly averages: 0.4178333333333333

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

Data used for this run:

Output File: CAcornF

Metfile: w23232.dvf

PRZM scenario: CAcornC.txt

EXAMS environment file: ir298.exv

Chemical Name: Flumetsulam

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	325.3	g/mol	
Henry's Law Const.	henry		atm-m ³ /mol	
Vapor Pressure	vapr	0.8e-15	torr	
Solubility	sol	5650	mg/L	
Kd	Kd		mg/L	
Koc	Koc	27.23	mg/L	
Photolysis half-life	kdp	0	days	Half-life
Aerobic Aquatic Metabolism	kbacw	197.6	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	183	days	Halfife
Aerobic Soil Metabolism	asm	98.8	days	Halfife
Hydrolysis: pH 7	0		days	Half-life
Method:	CAM	1	integer	See PRZM manual
Incorporation Depth:	DEPI	4	cm	

Application Rate: TAPP 0.0784 kg/ha
Application Efficiency: APPEFF 0.95 fraction
Spray Drift DRFT 0.16 fraction of application rate applied to pond
Application Date Date 24-03 dd/mm or dd/mmm 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 IR
Flag for runoff calc. RUNOFF total none, monthly or total(average of
entire run)

stored as MSsoyF.out

Chemical: Flumetsulam

PRZM environment: MSsoybeanC.txt modified Satday, 12 October 2002 at 17:07:44

EXAMS environment: ir298.exv modified Thuday, 29 August 2002 at 15:34:12

Metfile: wl3893.dvf modified Wedday, 3 July 2002 at 09:06:20

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
1961	1.089	1.063	0.9887	0.8333	0.7276	0.2594		
1962	0.5705		0.557	0.5045	0.442	0.3824	0.1414	
1963	1.457	1.421	1.288	1.047	0.8902	0.3179		
1964	2.261	2.206	2.009	1.616	1.372	0.484		
1965	1.09	1.063	0.9574	0.7615	0.6498	0.2381		
1966	0.5794		0.5708	0.5226	0.4535	0.4064	0.1536	
1967	0.5148		0.5021	0.4819	0.4278	0.3735	0.1377	
1968	1.067	1.041	0.9441	0.7619	0.6515	0.2291		
1969	2.535	2.474	2.269	1.868	1.591	0.5585		
1970	2.065	2.014	1.85	1.544	1.32	0.4744		
1971	0.6698		0.6538	0.5909	0.5523	0.4848	0.1844	
1972	1.476	1.44	1.3	1.072	0.9166	0.3262		
1973	0.4791		0.4678	0.4501	0.3827	0.3283	0.1225	
1974	0.6927		0.676	0.6186	0.5142	0.4488	0.1626	
1975	0.8822		0.8609	0.7795	0.625	0.5442	0.1969	
1976	0.4762		0.4646	0.4259	0.4034	0.356	0.1326	
1977	1.967	1.918	1.73	1.381	1.169	0.4044		
1978	0.6334		0.6177	0.5692	0.4926	0.4304	0.1616	
1979	7.226	7.08	6.432	5.161	4.385	1.514		
1980	2.089	2.051	1.902	1.534	1.302	0.4864		
1981	0.8617		0.8397	0.7673	0.6253	0.5455	0.2028	
1982	1.733	1.693	1.569	1.27	1.078	0.3768		
1983	1.407	1.375	1.258	1.02	0.875	0.3131		
1984	2.594	2.532	2.297	1.853	1.575	0.5509		
1985	1.507	1.47	1.326	1.051	0.8864	0.3416		
1986	2.208	2.154	1.945	1.552	1.313	0.4627		
1987	1.615	1.576	1.424	1.127	0.9502	0.35		
1988	1.354	1.322	1.209	0.9781	0.8307	0.2935		
1989	0.866	0.8451	0.7638	0.6138	0.5257	0.1901		
1990	0.8727		0.8518	0.8058	0.6703	0.5799	0.2077	

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129	7.226	7.08	6.432	5.161	4.385	1.514		
0.0645161290322581		2.594	2.532	2.297	1.868	1.591	0.5585	
0.0967741935483871		2.535	2.474	2.269	1.853	1.575	0.5509	
0.129032258064516	2.261	2.206	2.009	1.616	1.372	0.4864		
0.161290322580645	2.208	2.154	1.945	1.552	1.32	0.484		
0.193548387096774	2.089	2.051	1.902	1.544	1.313	0.4744		
0.225806451612903	2.065	2.014	1.85	1.534	1.302	0.4627		
0.258064516129032	1.967	1.918	1.73	1.381	1.169	0.4044		
0.290322580645161	1.733	1.693	1.569	1.27	1.078	0.3768		
0.32258064516129	1.615	1.576	1.424	1.127	0.9502	0.35		
0.354838709677419	1.507	1.47	1.326	1.072	0.9166	0.3416		
0.387096774193548	1.476	1.44	1.3	1.051	0.8902	0.3262		
0.419354838709677	1.457	1.421	1.288	1.047	0.8864	0.3179		
0.451612903225806	1.407	1.375	1.258	1.02	0.875	0.3131		
0.483870967741936	1.354	1.322	1.209	0.9781	0.8307	0.2935		
0.516129032258065	1.09	1.063	0.9887		0.8333	0.7276	0.2594	
0.548387096774194	1.089	1.063	0.9574		0.7619	0.6515	0.2381	
0.580645161290323	1.067	1.041	0.9441		0.7615	0.6498	0.2291	
0.612903225806452	0.8822		0.8609		0.8058	0.6703	0.5799	

```

0.2077
0.645161290322581 0.8727      0.8518      0.7795      0.6253      0.5455
0.2028
0.67741935483871 0.866 0.8451      0.7673      0.625 0.5442      0.1969
0.709677419354839 0.8617      0.8397      0.7638      0.6138      0.5257
0.1901
0.741935483870968 0.6927      0.676 0.6186      0.5523      0.4848      0.1844
0.774193548387097 0.6698      0.6538      0.5909      0.5142      0.4488
0.1626
0.806451612903226 0.6334      0.6177      0.5692      0.4926      0.4304
0.1616
0.838709677419355 0.5794      0.5708      0.5226      0.4535      0.4064
0.1536
0.870967741935484 0.5705      0.557 0.5045      0.442 0.3824      0.1414
0.903225806451613 0.5148      0.5021      0.4819      0.4278      0.3735
0.1377
0.935483870967742 0.4791      0.4678      0.4501      0.4034      0.356 0.1326
0.967741935483871 0.4762      0.4646      0.4259      0.3827      0.3283
0.1225

0.1  2.5076      2.4472      2.243 1.8293      1.5547      0.54445
Average of yearly averages: 0.332496666666667

```

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

Data used for this run:

Output File: MSsoyF

Metfile: w13893.dvf

PRZM scenario: MSsoybeanC.txt

EXAMS environment file: ir298.exv

Chemical Name: Flumetsulam

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	325.3	g/mol	
Henry's Law Const.	henry		atm-m ³ /mol	
Vapor Pressure	vapr	0.8e-15	torr	
Solubility	sol	5650	mg/L	
Kd	Kd		mg/L	
Koc	Koc	27.23	mg/L	
Photolysis half-life	kdp	0	days	Half-life
Aerobic Aquatic Metabolism	kbacw	197.6	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	183	days	Halfife
Aerobic Soil Metabolism	asm	98.8	days	Halfife
Hydrolysis: pH 7	0		days	Half-life
Method:	CAM	1	integer	See PRZM manual
Incorporation Depth:	DEPI	4	cm	
Application Rate:	TAPP	0.0784	kg/ha	
Application Efficiency:	APPEFF		0.95	fraction
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	31-03	dd/mm or dd/mmm 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 IR

Flag for runoff calc. RUNOFF total none, monthly or total(average of entire run)

SCIGROW input/output screen:

Scigrow (test version)

<input type="text" value="flumetsulam"/>	chemical name	<input type="button" value="input guidance"/>
<input type="text" value="0.07"/>	application rate (lb/acre)	
<input type="text" value="1"/>	number of applications	
<input type="text" value="5"/>	Koc (ml.g)	
<input type="text" value="69.5"/>	soil metabolism half-life (days)	
Groundwater Concentration (ppb)		<input type="button" value="run"/>
<input type="text" value="8.23E-01"/>		<input type="button" value="exit"/>