



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

**OFFICE OF PREVENTION,
PESTICIDES AND
TOXIC SUBSTANCES**

MEMORANDUM

DATE: September 6, 2007

SUBJECT: Tier II Drinking Water Assessment for the use of Pyraclostrobin (P.C. Code: 099100) on Oats and Oilseed (canola and flax) (Headline Fungicide); Corn, Soybean, and Sugar-beets (Headline Fungicide); Fresh Herbs (crop group 19) and Tropical Fruits (avocado, black sapote, canistel, mamey, sapote, mango, papaya sapodilla, and star apple) (Pristine Fungicide); and Turf and Ornamentals (Insignia Fungicide) (DP Barcodes 336190, 340588, 342584)

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Enclosed is the Tier II drinking water assessment for proposed uses of the active ingredient pyraclostrobin on Oats and Oilseed including canola and flax (Section 3 request for Headline Fungicide – DP Barcode 334534); Corn, Soybean, and Sugar-beets (Section 3 request for Headline Fungicide – DP Barcode 340588); Fresh Herbs (crop group 19) and Tropical Fruits (avocado, black sapote, canistel, mamey, sapote, mango, papaya sapodilla, and star apple) (IR-4 request for Pristine Fungicide – DP Barcode 336190); and Turf and Ornamentals (Section 3 request for Insignia Fungicide - DP Barcode 342584).

This Tier II drinking water assessment was completed for the proposed use of pyraclostrobin on

Turf and Ornamentals, because this use represents the highest use rate of the proposed and registered uses.

If you have any further questions regarding this assessment, please contact Gabriel Rothman at (703) 347-8011.

INTRODUCTION

This Tier II Drinking Water Assessment for pyraclostrobin is being submitted in order to determine if the new uses will increase the residue concentration of pyraclostrobin in surface and ground water, to quantify these changes, and to characterize the exposure pathways as influenced by the fate and transport properties of pyraclostrobin. The new uses include the following:

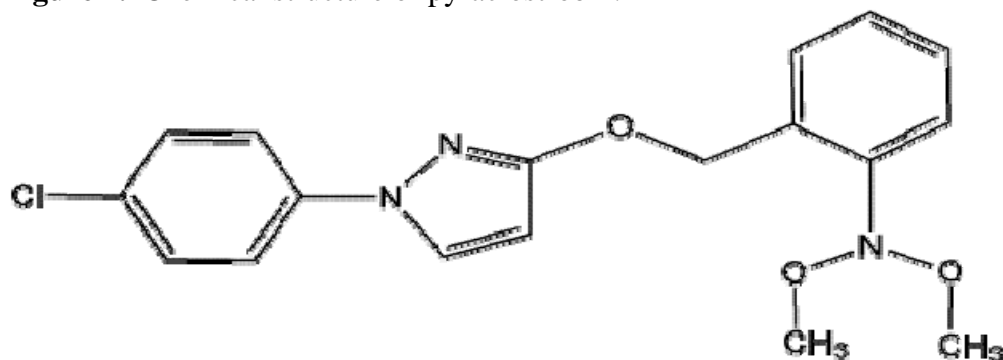
- Ground and Aerial Application on Oats and Oilseed including canola and flax (Section 3 request for Headline Fungicide – DP Barcode 334534)
- In-Furrow Application on Corn, Soybean, and Sugar-beets (Section 3 request for Headline Fungicide – DP Barcode 340588); Fresh Herbs (crop group 19)
- Ground and Aerial Application on Tropical Fruits (avocado, black sapote, canistel, mamey, sapote, mango, papaya sapodilla, and star apple) (IR-4 request for Pristine Fungicide – DP Barcode 336190)
- Aerial Application on Turf and Ornamentals (Section 3 request for Insignia Fungicide - DP Barcode 342584).

This assessment was based on the application of the highest seasonal use rate (proposed or registered) of pyraclostrobin. The aerial application on turf and ornamentals contains the highest seasonal application at 0.5 lbs a.i./acre with 6 maximum seasonal applications at 14 day intervals. The proposed use rate for the aerial application on Turf and Ornamentals is the same as for the registered use of pyraclostrobin for ground application on turf (please see the, “Environmental Fate and Ecological Risk Assessment for the Registration of Pyraclostrobin”, submitted February 6, 2002.). However, EFED believes that the aerial use of pyraclostrobin on turf and ornamentals will possess the upper-bound concentrations in surface and ground water since spray drift increases and application efficiency decreases in an aerial application technique.

EXECUTIVE SUMMARY

The subject chemical addressed in this drinking water assessment is identified by the chemical pyraclostrobin (cabamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl[oxy]methyl]phenyl]methoxy-,methyl ester). The trade name for this compound is Insignia Fungicide. The labeled formulation of Insignia Fungicide contains the active ingredient of pyraclostrobin by 20 percent with other ingredients accounting for the remaining 80 percent. The chemical identification number is 099100. **Figure 1** shows the chemical composition of pyraclostrobin

Figure 1. Chemical structure of pyraclostrobin.



Measures of exposure for pyraclostrobin in this drinking water assessment are obtained through modeling efforts only, since national-scale monitoring data were not identified. The Tier II drinking water assessment was performed using the Tier II PRZM/EXAMS (PE4V01 perl shell with PRZM 3.12 beta dated 5/24/01 and EXAMS version 2.98, 7/18/02) to assess surface water. Ground water concentrations were estimated using a Tier I SCI-GROW model (version 2.3, May 16, 2006) since a Tier II model has not been developed to assess ground water.

Acute effects of pyraclostrobin residues in drinking water are expressed in annual peak one-in-ten year concentrations, chronic effects in annual average one-in-ten year concentrations, and cancer effects in 30-year average concentrations. The upper-bound Tier II modeling predicts that the concentrations of pyraclostrobin in surface water are not likely to exceed **35.6 µg/L** for the peak concentration, **2.3 µg/L** for the annual average concentration, and **1.5 µg/L** for the 30-year average concentrations. The ground water assessment was based on the latest proposed use rate of pyraclostrobin on turf and ornamentals. The SCI-GROW model predicts the acute and chronic concentrations of pyraclostrobin in shallow ground water to be **0.02 µg/L (0.02 ppb)**.

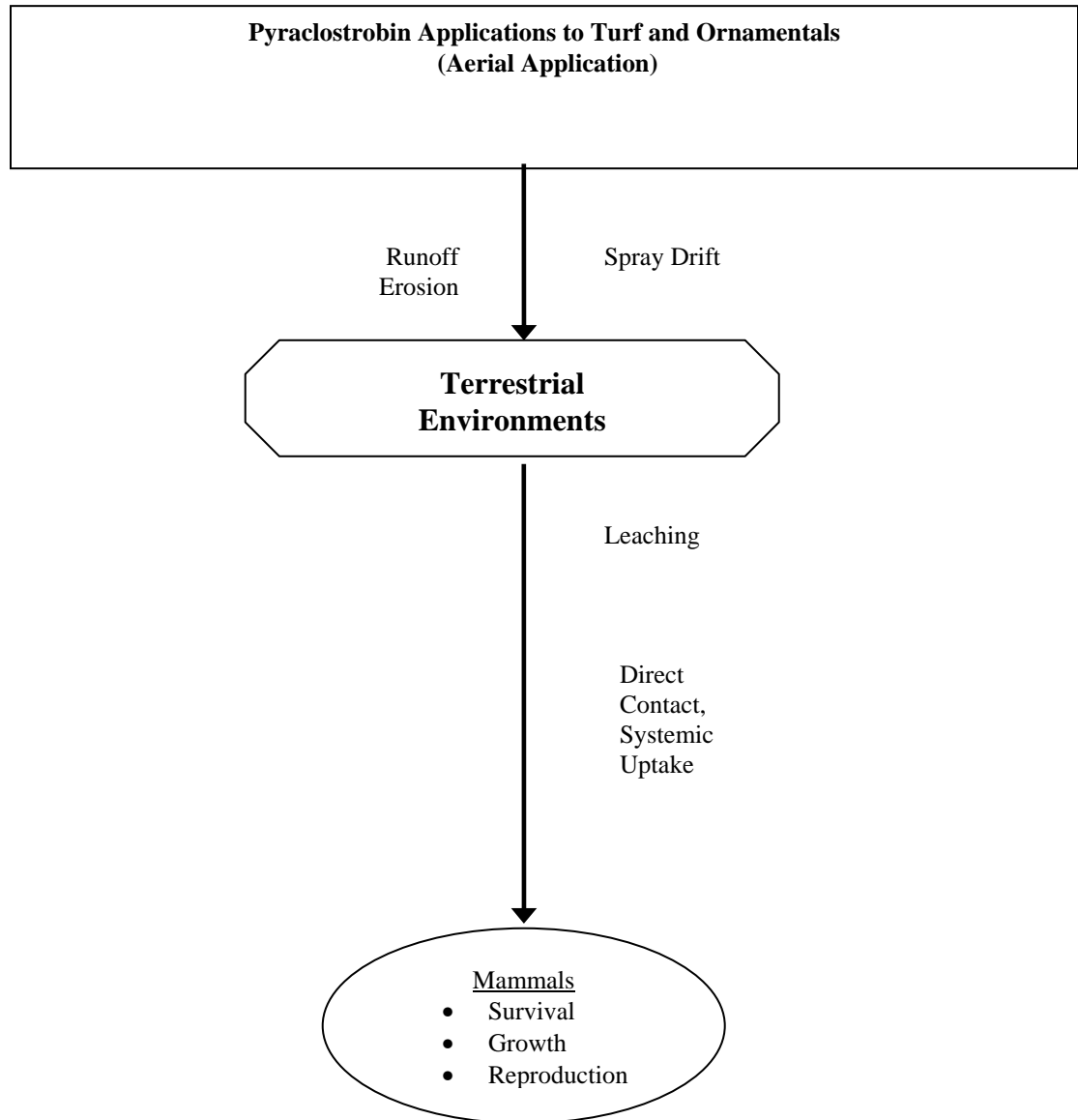
PROBLEM FORMULATION

Pyraclostrobin is not likely to reach ground water since pyraclostrobin is tightly bound to soils with Koc between 6,000 mg/L and 16,000 mg/L in all soil studies with an arithmetic mean of 9,304 mg/L and median of 7,889 mg/L. However, EFED believes pyraclostrobin can potentially contaminate surface water through runoff. Laboratory and terrestrial field studies suggest that pyraclostrobin is moderately persistent in aerobic environments with aerobic aquatic and aerobic soil half-lives above 80 days but more rapidly decays in an anaerobic soil environment with half-lives around 3 days. Pyraclostrobin is also practically stable with respect to hydrolysis but does undergo rapid photolysis. Pyraclostrobin is also subject to spray drift in the proposed foliar applications.

This drinking water assessment only addresses the parent compound. Major degradation products of pyraclostrobin were not found to be of toxicological concern.

Figure 2 is the conceptual model showing all exposure pathways from pyraclostrobin aerial application on Turf and Ornamentals effects on drinking water. For additional information on pyraclostrobin fate and transport properties, please refer to the original drinking assessment for the Florida Turf scenario included with the, “Environmental Fate and Ecological Risk Assessment for the Registration of Pyraclostrobin”, submitted February 6, 2002.

Figure 2. Conceptual model for the fate, transport, and effects pathways for aerial application of pyraclostrobin to Turf and Ornamentals.



ANALYSIS

- *Surface Water*

Two Turf scenarios and six Nursery scenarios, as a surrogate to the Ornamentals crop group, were considered in the surface water assessment [*please see EFED policy memo titled, “Outdoor Nursery Pesticide Root Zone Model (PRZM) Scenarios for Use in Surface Water Assessments”, dated July 26, 2007*]. A PCA factor of 1.0 was used for all scenarios consistent with EFED policy (see EFED policy memo, “Golf Course Adjustment Factors for Simulated Aquatic Exposure Concentrations”, dated December 7, 2005).

The PRZM/EXAMS fate parameters and crop-specific inputs and are shown in **Tables 1 and 2** respectively. The only data gaps in this assessment includes the lack of aerobic aquatic and anaerobic aquatic metabolism studies. Table 1 contains a description of how these data gaps are addressed in the surface water assessment. Another potential limitation in this assessment is that the Nursery scenarios did not address irrigation. The upper-bound concentrations should simulate as much exposure to water from sources such as irrigation channels. However, the PRZM model version 3.12 beta does not simulate irrigation.

The estimated concentrations of pyraclostrobin in surface water for each scenario are shown in **Table 3**. The upper-bound estimated pyraclostrobin residue concentration in surface water appears to result from the New Jersey Nursery scenario with 6 aerial applications of 0.5 lbs a.i./acre, 14 day intervals. The PRZM/EXAMS output files are provided in **Appendix A**.

Table 1. PRZM/EXAMS environmental fate input parameter values for Pyraclostrobin.

PRZM/EXAMS Input Parameter	Input Value and Unit	Comment	Source
Molecular Weight	388 g/mol		Product Chemistry
Hydrolysis ($t_{1/2}$)	0 days	stable	MRID 45118627
Aerobic aquatic metabolism ($t_{1/2}$)	496.28 days	No data available and stable to hydrolysis. Used twice the aerobic soil metabolism half-life of 248.14 days (based on the upper 90 th percentile of the mean of half lives in six studies)	EFED Guidance MRID 45118631 MRID 45118632

Table 1 (continued). PRZM/EXAMS environmental fate input parameter values for Pyraclostrobin.

PRZM/EXAMS Input Parameter	Input Value and Unit	Comment	Source
Anaerobic aquatic metabolism ($t_{1/2}$)	6.6 days	No data available. Used twice the anaerobic soil half-life of 3.3 days (based on the upper 90 th percentile of the mean of half lives in six studies)	EFED Guidance MRID 45118635 MRID 45118636
Aerobic soil metabolism ($t_{1/2}$)	248.14 days	Upper 90 th percentile of the mean of half-lives in six studies	MRID 45118631 MRID 45118632 MRID 45367504
Vapor Pressure at 20 °C	1.95×10^{-8} torr		Product Chemistry
Solubility in Water at 20°C	24.1 mg/L	Product Chemistry x 10	EFED Guidance
Koc	9,304 ml/g	Mean of Kocs in six studies	MRID 45160502
Henry's Law Constant	4.13×10^{-9} atm·m ³ /mol	Based on solubility and vapor pressure	EFED Guidance
Aqueous Photolysis ($t_{1/2}$)	0.08 days	Maximum dark controlled aqueous photolysis half-life of two studies	EFED Guidance MRID 45118629
CAM	2 (linear application based on crop canopy)	aerial applied	EFED Guidance
Spray drift fraction	0.16		EFED Guidance
Application Efficiency	0.95		EFED Guidance
Application Rate	0.5 lb a.i./A (0.56 kg a.i./ha)		Registration Action 7969-184 label
Applications and Intervals	6 treatments, 14 days apart		Registration Action 7969-184 label
Incorporation Depth	0 cm	Aerial application	Registration Action 7969-184 label

Table 2. PRZM/EXAMS crop-specific input parameter values for Pyraclostrobin.

Crop Scenario	PRZM/EXAMS Input Parameters	
	Initial Application Date	Meteorological File
FL Turf	March 15	w12834.dvf
PA Turf	June 1	w14737.dvf
CA Nursery (no irrigation) ¹	March 15	w23188.dvf
FL Nursery (no irrigation) ¹	March 15	w12834.dvf
MI Nursery (no irrigation) ¹	June 15	w14840.dvf
NJ Nursery (no irrigation) ¹	May 1	w93730.dvf
OR Nursery (no irrigation) ¹	January 15	w24229.dvf
TN Nursery (no irrigation) ¹	June 1	w13882.dvf

¹ **Note** – No irrigation scenarios used in PRZM 3.12 beta modeling.

Table 3. Estimated concentrations of pyraclostrobin in surface water, 0.5 lb a.i./A, 6 applications, 14 days apart, aerial application.

Crop Scenario	PRZM/EXAMS Estimated Concentrations in Surface Water (µg/L)		
	1-in-10 year Annual Peak (Acute)	1-in-10 year Annual Mean (Chronic)	30 year annual mean (Cancer)
FL Turf	11.6	1.1	0.8
PA Turf	13.5	0.9	0.7
CA Nursery (no irrigation)	32.4	2.1	1.2
FL Nursery (no irrigation)	22.3	2.1	1.4
MI Nursery (no irrigation)	19.4	1.4	1.0
NJ Nursery (no irrigation)	35.6	2.3	1.5
OR Nursery (no irrigation)	6.1	0.9	0.8
TN Nursery (no irrigation)	17.3	2.2	1.5

Notes:

1. No irrigation scenarios used in PRZM 3.12 beta modeling.
2. Upper-bound estimated concentrations in surface water highlighted in bold.
3. Maximum estimated concentrations in surface water based on PCA of 1.0 for all scenarios.

- **Ground Water**

Ground water concentrations were estimated using a Tier I SCI-GROW model (version 2.3, May 16, 2006). The ground water concentrations generated by SCI-GROW are based on the largest 90-day average recorded during the sampling period. Since there is relatively little temporal variation in ground water concentrations compared to surface water, the model predicted value can be considered to represent both the acute and chronic values.

The ground water assessment was based on the latest proposed use rate of pyraclostrobin on turf and ornamentals. **Tables 4 and 5** shows the input parameter values used in SCI-GROW and concentrations of pyraclostrobin in ground water used in SCI-GROW, respectively. The SCI-GROW model predicts the acute and chronic concentrations of pyraclostrobin in shallow ground water to be **0.02 µg/L (0.02 ppb)**. The SCI-GROW output files for both scenarios are provided in **Appendix B**.

The ground water concentrations generated by SCI-GROW are based on the largest 90-day average recorded during the sampling period. Since there is relatively little temporal variation in ground water concentrations compared to surface water, the concentration of 0.02 µg/L can be considered as both the acute and chronic values.

Table 4. SCI-GROW environmental fate input parameter values for Pyraclostrobin.

SCI-GROW Fate Input Parameter	Input Value and Unit	Comments	Source
Koc	7,889 ml/g	Median value of six studies	EFED Guidance
Application Rate	0.5 lb a.i./acre		Registration Action 7969-184 label
Number of Applications	6		Registration Action 7969-184 label
Use Rate (Maximum total per season)	3.0 lb a.i./acre/season	Based on 6 applications per season of 0.5 lb a.i./acre	Registration Action 7969-184 label
Aerobic Soil Metabolism half-life	105	Median value of six studies	EFED Guidance

Table 5. Estimated concentrations of pyraclostrobin in ground water, 0.5 lb a.i./A with 6 applications.

SCI-GROW Estimated Ground Water Concentration (µg/L)
0.02

EXPOSURE CHARACTERIZATION

This assessment demonstrates that exposure of pyraclostrobin in surface water is very sensitive to runoff. The New Jersey Nursery scenario used in PRZM/EXAMS to diagnose the upper-bound pyraclostrobin residue surface water concentration reflects a region with high rainfall and high vulnerability to runoff.

As expected, pyraclostrobin did not show high levels of ground water concentrations. The highly immobile property of pyraclostrobin most probably contributes to this result. The predicted SCI-GROW concentration should be conservative typical of a Tier I model.

REFERENCES

Barrett, M. Proposal For a Method to Determine Screening Concentration Estimates for Drinking Water Derived from Ground Water Studies. EFED/OPP. September 20, 1997.

U.S. Environmental Protection Agency. 1995. *GENEEC: A Screening Model for Pesticide Environmental Exposure Assessment*. The International Symposium on Water Quality Monitoring, April 2-5 1995. American Society of Agricultural Engineers. p 485.

U.S. Environmental Protection Agency. 1996. Drinking Water Regulations and Health Advisories. USEPA Report. U.S. Government Printing Office, Washington, DC.

Appendix A – PRZM/EXAMS Output Files

stored as PYFLTfA.out

Chemical: pyraclostrobin

PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06

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

Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	4.055	3.221	2.231	2	1.777	0.6416
1962	4.439	3.531	2.202	2.01	1.783	0.7814
1963	8.729	6.943	3.65	2.332	2.202	0.9326
1964	9.865	8.276	4.041	2.656	2.233	1.137
1965	4.939	3.942	2.255	1.995	1.965	0.6107
1966	14.08	11.23	6.233	3.864	3.377	1.207
1967	4.771	3.798	2.172	1.975	1.855	0.696
1968	10.71	8.759	4.935	3.279	2.862	1.151
1969	6.336	5.076	2.848	2.232	2.054	0.9393
1970	4.135	3.294	2.297	2.082	1.845	0.5156
1971	4.396	3.488	2.52	2.255	1.965	0.8556
1972	6.821	5.398	3.513	2.698	2.394	1.034
1973	4.058	3.214	2.219	2.042	1.808	0.5838
1974	6.176	4.918	2.304	2.024	1.872	0.8559
1975	4.303	3.413	2.317	2.065	1.827	0.5709
1976	12.07	9.633	5.199	3.499	3.213	0.987
1977	4.06	3.554	2.337	1.977	1.823	0.7116
1978	4.692	3.69	2.792	2.292	2.099	0.7661
1979	7.901	6.253	3.908	2.65	2.264	1.094
1980	4.317	3.416	2.317	2.073	1.827	0.5181
1981	4.143	3.279	2.348	1.983	1.792	0.694
1982	6.724	5.328	3.152	2.527	2.39	0.8351
1983	4.908	3.911	3.051	2.343	2.289	0.9821
1984	9.024	7.218	3.59	2.717	2.424	0.8466
1985	4.067	3.338	2.298	2.03	1.788	0.651
1986	5.441	4.295	2.458	1.925	1.717	0.7894
1987	5.055	4.183	2.72	2.227	1.941	0.5839
1988	4.339	3.417	2.177	1.982	1.8	0.64
1989	11.68	9.5	4.698	2.045	1.798	0.9299
1990	3.954	3.125	2.157	1.959	1.747	0.5444

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032258064516129			14.08	11.23	6.233	3.864 3.377 1.207
0.0645161290322581			12.07	9.633	5.199	3.499 3.213 1.151
0.0967741935483871			11.68	9.5	4.935	3.279 2.862 1.137
0.129032258064516			10.71	8.759	4.698	2.717 2.424 1.094
0.161290322580645			9.865	8.276	4.041	2.698 2.394 1.034
0.193548387096774			9.024	7.218	3.908	2.656 2.39 0.987
0.225806451612903			8.729	6.943	3.65	2.65 2.289 0.9821
0.258064516129032			7.901	6.253	3.59	2.527 2.264 0.9393
0.290322580645161			6.821	5.398	3.513	2.343 2.233 0.9326
0.32258064516129			6.724	5.328	3.152	2.332 2.202 0.9299

0.354838709677419	6.336	5.076	3.051	2.292	2.099	0.8559
0.387096774193548	6.176	4.918	2.848	2.255	2.054	0.8556
0.419354838709677	5.441	4.295	2.792	2.232	1.965	0.8466
0.451612903225806	5.055	4.183	2.72	2.227	1.965	0.8351
0.483870967741936	4.939	3.942	2.52	2.082	1.941	0.7894
0.516129032258065	4.908	3.911	2.458	2.073	1.872	0.7814
0.548387096774194	4.771	3.798	2.348	2.065	1.855	0.7661
0.580645161290323	4.692	3.69	2.337	2.045	1.845	0.7116
0.612903225806452	4.439	3.554	2.317	2.042	1.827	0.696
0.645161290322581	4.396	3.531	2.317	2.03	1.827	0.694
0.67741935483871	4.339	3.488	2.304	2.024	1.823	0.651
0.709677419354839	4.317	3.417	2.298	2.01	1.808	0.6416
0.741935483870968	4.303	3.416	2.297	2	1.8	0.64
0.774193548387097	4.143	3.413	2.255	1.995	1.798	0.6107
0.806451612903226	4.135	3.338	2.231	1.983	1.792	0.5839
0.838709677419355	4.067	3.294	2.219	1.982	1.788	0.5838
0.870967741935484	4.06	3.279	2.202	1.977	1.783	0.5709
0.903225806451613	4.058	3.221	2.177	1.975	1.777	0.5444
0.935483870967742	4.055	3.214	2.172	1.959	1.747	0.5181
0.967741935483871	3.954	3.125	2.157	1.925	1.717	0.5156

0.1 11.583 9.4259 4.9113 3.2228 2.8182 1.1327
Average of yearly averages: 0.8028533333333334

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

Data used for this run:

Output File: PYFLTfA

Metfile: w12834.dvf

PRZM scenario: FLturfC.txt

EXAMS environment file: ir298.exv

Chemical Name: pyraclostrobin

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	388	g/mol	
Henry's Law Const.	henry	4.12e-9	atm-m ³ /mol	
Vapor Pressure	vapr	1.95e-08	torr	
Solubility	sol	24.1	mg/L	
Kd	Kd		mg/L	
Koc	Koc	9304	mg/L	
Photolysis half-life	kdp	0.08	days	Half-life
Aerobic Aquatic Metabolism	kbacw	496.28	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	6.6	days	Halfife
Aerobic Soil Metabolism	asm	248.14	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method: CAM	2	integer		See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate: TAPP		0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	15-03	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	14	days	Set to 0 or delete line for single app.
Interval 2	interval	14	days	Set to 0 or delete line for single app.
Interval 3	interval	14	days	Set to 0 or delete line for single app.

Interval 4	interval 14	days	Set to 0 or delete line for single app.
Interval 5	interval 14	days	Set to 0 or delete line for single app.
Record 17:	FILTRA		
	IPSCND1		
	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 PYPATfA.out

Chemical: pyraclostrobin

PRZM environment: PAturfC.txt modified Satday, 12 October 2002 at 16:27:02

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

Metfile: w14737.dvf modified Wedday, 3 July 2002 at 09:06:12

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	5.327	4.292	3.326	2.529	2.17	0.5729
1962	4.942	3.975	2.671	2.358	2.092	0.6385
1963	4.076	3.392	2.376	2.115	1.916	0.6637
1964	4.115	3.318	2.351	2.146	1.905	0.5837
1965	4.099	3.315	2.334	2.107	1.9	0.5881
1966	4.059	3.26	2.319	2.08	1.914	0.675
1967	5.52	4.426	3.325	2.708	2.322	0.7096
1968	4.129	3.335	2.352	2.16	1.98	0.5956
1969	13.78	11.15	6.454	3.624	2.997	0.8004
1970	4.454	3.598	2.649	2.291	2.01	0.6999
1971	5.847	4.695	3.817	2.797	2.512	0.9384
1972	6.557	5.338	4.095	3.129	2.659	0.9371
1973	7.942	6.384	3.789	2.709	2.302	0.8121
1974	5.023	4.072	2.903	2.463	2.26	0.7387
1975	4.388	3.858	2.727	2.324	2.056	0.7881
1976	7.936	6.365	3.63	2.639	2.345	0.803
1977	4.196	3.372	2.416	2.186	1.956	0.662
1978	8.476	6.971	4.082	2.87	2.498	0.7654
1979	4.362	3.693	2.716	2.327	2.057	0.8382
1980	4.059	3.261	2.284	2.085	1.855	0.5281
1981	4.108	3.303	2.325	2.147	1.909	0.53
1982	11.77	9.751	5.243	3.349	3.058	0.8745
1983	4.179	3.488	2.362	2.152	1.915	0.6643
1984	5.127	4.141	3.187	2.662	2.375	0.7304
1985	16.54	13.18	6.406	2.967	2.699	1.143
1986	4.364	3.529	2.563	2.192	1.956	0.5999
1987	13.67	10.99	5.428	3.484	3.054	1.02
1988	4.813	3.866	2.66	2.269	2.024	0.6722
1989	4.255	3.432	2.498	2.279	2.036	0.668
1990	6.965	5.614	3.774	2.778	2.494	0.7534

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129			16.54	13.18	6.454	3.624	3.058 1.143
0.0645161290322581			13.78	11.15	6.406	3.484	3.054 1.02
0.0967741935483871			13.67	10.99	5.428	3.349	2.997 0.9384
0.129032258064516			11.77	9.751	5.243	3.129	2.699 0.9371
0.161290322580645			8.476	6.971	4.095	2.967	2.659 0.8745
0.193548387096774			7.942	6.384	4.082	2.87	2.512 0.8382
0.225806451612903			7.936	6.365	3.817	2.797	2.498 0.8121
0.258064516129032			6.965	5.614	3.789	2.778	2.494 0.803
0.290322580645161			6.557	5.338	3.774	2.709	2.375 0.8004
0.32258064516129			5.847	4.695	3.63	2.708	2.345 0.7881
0.354838709677419			5.52	4.426	3.326	2.662	2.322 0.7654
0.387096774193548			5.327	4.292	3.325	2.639	2.302 0.7534

0.419354838709677	5.127	4.141	3.187	2.529	2.26	0.7387
0.451612903225806	5.023	4.072	2.903	2.463	2.17	0.7304
0.483870967741936	4.942	3.975	2.727	2.358	2.092	0.7096
0.516129032258065	4.813	3.866	2.716	2.327	2.057	0.6999
0.548387096774194	4.454	3.858	2.671	2.324	2.056	0.675
0.580645161290323	4.388	3.693	2.66	2.291	2.036	0.6722
0.612903225806452	4.364	3.598	2.649	2.279	2.024	0.668
0.645161290322581	4.362	3.529	2.563	2.269	2.01	0.6643
0.67741935483871	4.255	3.488	2.498	2.192	1.98	0.6637
0.709677419354839	4.196	3.432	2.416	2.186	1.956	0.662
0.741935483870968	4.179	3.392	2.376	2.16	1.956	0.6385
0.774193548387097	4.129	3.372	2.362	2.152	1.916	0.5999
0.806451612903226	4.115	3.335	2.352	2.147	1.915	0.5956
0.838709677419355	4.108	3.318	2.351	2.146	1.914	0.5881
0.870967741935484	4.099	3.315	2.334	2.115	1.909	0.5837
0.903225806451613	4.076	3.303	2.325	2.107	1.905	0.5729
0.935483870967742	4.059	3.261	2.319	2.085	1.9	0.53
0.967741935483871	4.059	3.26	2.284	2.08	1.855	0.5281

0.1 13.48 10.8661 5.4095 3.327 2.9672 0.93827
Average of yearly averages: 0.73314

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

Data used for this run:

Output File: PYPATfA

Metfile: w14737.dvf

PRZM scenario: PAturfC.txt

EXAMS environment file: ir298.exv

Chemical Name: pyraclostrobin

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	388	g/mol	
Henry's Law Const.	henry	4.12e-9	atm-m ³ /mol	
Vapor Pressure	vapr	1.95e-08	torr	
Solubility	sol	24.1	mg/L	
Kd	Kd		mg/L	
Koc	Koc	9304	mg/L	
Photolysis half-life	kdp	0.08	days	Half-life
Aerobic Aquatic Metabolism	kbacw	496.28	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	6.6	days	Halfife
Aerobic Soil Metabolism	asm	248.14	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method:	CAM 2	integer		See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	01-06	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	14	days	Set to 0 or delete line for single app.
Interval 2	interval	14	days	Set to 0 or delete line for single app.
Interval 3	interval	14	days	Set to 0 or delete line for single app.
Interval 4	interval	14	days	Set to 0 or delete line for single app.
Interval 5	interval	14	days	Set to 0 or delete line for single app.

Record 17: FILTRA
 IPSCND1
 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 PYCANuA.out

Chemical: pyraclostrobin

PRZM environment: CANursery_NirrigC.txt modified Monday, 16 April 2007 at 14:26:46

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

Metfile: w23188.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	5.541	4.458	2.319	2.048	1.829	0.6103
1962	13.14	11.22	5.727	3.025	2.693	0.9693
1963	12.29	9.773	4.657	2.223	2.038	1.111
1964	4.099	3.281	2.313	2.09	1.861	0.5685
1965	24.23	19.94	13.9	8.666	5.777	2.287
1966	14.09	12.19	6.029	2.54	2.099	1.173
1967	13.28	11.53	5.79	2.931	2.001	1.289
1968	5.061	4.025	2.638	2.315	2.209	0.6328
1969	34.78	28.05	14.55	7.132	5.504	1.705
1970	15.18	12.24	6.82	3.985	3.37	1.298
1971	5.616	4.505	3.204	2.516	2.196	0.8965
1972	8.611	7.446	4.11	2.201	1.841	0.8739
1973	4.288	3.444	2.414	2.202	2.032	0.6213
1974	22.52	17.87	8.571	3.408	2.348	1.444
1975	7.449	5.987	4.242	3.712	3.23	0.9202
1976	16.62	14.69	7.797	4.091	3.832	1.385
1977	33.21	28.26	15.17	7.06	5.285	2.265
1978	9.761	8.415	4.263	2.351	2.114	1.065
1979	11.53	9.229	4.455	2.897	2.542	1.053
1980	14.09	11.41	5.76	4.398	3.704	1.298
1981	24.13	19.25	9.377	3.846	3.284	1.545
1982	23.04	18.51	10.23	5.566	4.338	1.385
1983	5.963	4.86	3.643	3.004	2.725	0.9371
1984	9.296	7.438	3.31	2.014	1.785	0.6855
1985	34.5	27.69	19.32	9.547	6.365	2.197
1986	8.375	6.708	4.639	3.537	3.01	1.47
1987	7.74	6.179	2.942	2.405	2.084	1.021
1988	25.45	20.44	11.87	6.16	4.648	1.495
1989	9.585	7.632	2.379	2.153	1.932	0.6058
1990	5.973	4.902	3.379	2.142	1.993	0.8259

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032258064516129			34.78	28.26	19.32	9.547 6.365 2.287
0.0645161290322581			34.5	28.05	15.17	8.666 5.777 2.265
0.0967741935483871			33.21	27.69	14.55	7.132 5.504 2.197
0.129032258064516			25.45	20.44	13.9	7.06 5.285 1.705
0.161290322580645			24.23	19.94	11.87	6.16 4.648 1.545
0.193548387096774			24.13	19.25	10.23	5.566 4.338 1.495
0.225806451612903			23.04	18.51	9.377	4.398 3.832 1.47
0.258064516129032			22.52	17.87	8.571	4.091 3.704 1.444
0.290322580645161			16.62	14.69	7.797	3.985 3.37 1.385
0.32258064516129			15.18	12.24	6.82	3.846 3.284 1.385
0.354838709677419			14.09	12.19	6.029	3.712 3.23 1.298
0.387096774193548			14.09	11.53	5.79	3.537 3.01 1.298

0.419354838709677	13.28	11.41	5.76	3.408	2.725	1.289
0.451612903225806	13.14	11.22	5.727	3.025	2.693	1.173
0.483870967741936	12.29	9.773	4.657	3.004	2.542	1.111
0.516129032258065	11.53	9.229	4.639	2.931	2.348	1.065
0.548387096774194	9.761	8.415	4.455	2.897	2.209	1.053
0.580645161290323	9.585	7.632	4.263	2.54	2.196	1.021
0.612903225806452	9.296	7.446	4.242	2.516	2.114	0.9693
0.645161290322581	8.611	7.438	4.11	2.405	2.099	0.9371
0.67741935483871	8.375	6.708	3.643	2.351	2.084	0.9202
0.709677419354839	7.74	6.179	3.379	2.315	2.038	0.8965
0.741935483870968	7.449	5.987	3.31	2.223	2.032	0.8739
0.774193548387097	5.973	4.902	3.204	2.202	2.001	0.8259
0.806451612903226	5.963	4.86	2.942	2.201	1.993	0.6855
0.838709677419355	5.616	4.505	2.638	2.153	1.932	0.6328
0.870967741935484	5.541	4.458	2.414	2.142	1.861	0.6213
0.903225806451613	5.061	4.025	2.379	2.09	1.841	0.6103
0.935483870967742	4.288	3.444	2.319	2.048	1.829	0.6058
0.967741935483871	4.099	3.281	2.313	2.014	1.785	0.5685

0.1 32.434 26.965 14.485 7.1248 5.4821 2.1478
Average of yearly averages: 1.18777

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

Data used for this run:

Output File: PYCANuA

Metfile: w23188.dvf

PRZM scenario: CAnursery_NirrigC.txt

EXAMS environment file: ir298.exv

Chemical Name: pyraclostrobin

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	388	g/mol	
Henry's Law Const.	henry	4.12e-9	atm-m ³ /mol	
Vapor Pressure	vapr	1.95e-08	torr	
Solubility	sol	24.1	mg/L	
Kd	Kd		mg/L	
Koc	Koc	9304	mg/L	
Photolysis half-life	kdp	0.08	days	Half-life
Aerobic Aquatic Metabolism	kbacw	496.28	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	6.6	days	Halfife
Aerobic Soil Metabolism	asm	248.14	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method:	CAM 2	integer		See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	15-03	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	14	days	Set to 0 or delete line for single app.
Interval 2	interval	14	days	Set to 0 or delete line for single app.
Interval 3	interval	14	days	Set to 0 or delete line for single app.
Interval 4	interval	14	days	Set to 0 or delete line for single app.
Interval 5	interval	14	days	Set to 0 or delete line for single app.

Record 17: FILTRA
 IPSCND1
 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 PYFLNuA.out

Chemical: pyraclostrobin

PRZM environment: FLnursery_NirrigC.txt modified Tuesday, 17 April 2007 at 08:28:20

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

Metfile: w12834.dvf modified Wednesday, 3 July 2002 at 09:04:28

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	7.808	6.258	3.397	2.271	2.24	1.09
1962	9.488	7.584	4.256	3.661	3.174	1.53
1963	16.54	13.2	7.258	4.654	3.886	1.64
1964	17.71	14.9	7.522	4.841	4.641	2.107
1965	13.86	11.1	6.478	3.449	2.955	1.076
1966	24.08	19.28	11.26	7.275	6.14	2.184
1967	11.54	9.236	5.648	3.39	3.035	1.296
1968	23.05	18.92	11.08	7.478	5.652	2.215
1969	11.76	9.412	5.392	3.79	3.062	1.707
1970	5.665	4.479	2.595	2.298	2.09	0.7786
1971	9.409	7.555	3.788	2.909	2.416	1.52
1972	12.27	10.31	5.526	3.592	3.543	1.751
1973	4.712	3.844	2.7	2.287	2.067	1.046
1974	9.603	7.749	4.552	3.509	3.098	1.608
1975	5.746	4.62	2.879	2.346	2.372	1.073
1976	22.66	18.2	10.47	6.63	5.61	1.752
1977	8.251	6.584	4.479	3.095	2.279	1.307
1978	9.35	7.46	4.602	3.294	3.042	1.551
1979	11.87	10.03	6.343	3.5	3.536	2.06
1980	5.587	4.424	3.099	2.491	2.174	0.9522
1981	11.36	9.038	6.413	3.207	2.559	1.303
1982	13.3	10.58	5.575	3.754	3.81	1.565
1983	11.27	9.006	6.461	3.847	3.548	2.007
1984	15.27	12.94	6.395	3.976	3.443	1.617
1985	7.75	6.171	3.167	2.609	2.523	1.188
1986	12.27	9.915	6.618	3.842	2.908	1.4
1987	7.492	5.99	3.659	2.74	2.351	1.027
1988	7.248	5.71	2.742	2.175	2.066	1.063
1989	19.08	15.83	8.196	3.44	2.399	1.397
1990	5.182	4.108	2.359	2.074	1.879	0.9433

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			24.08	19.28	11.26	7.478	6.14	2.215
0.0645161290322581			23.05	18.92	11.08	7.275	5.652	2.184
0.0967741935483871			22.66	18.2	10.47	6.63	5.61	2.107
0.129032258064516			19.08	15.83	8.196	4.841	4.641	2.06
0.161290322580645			17.71	14.9	7.522	4.654	3.886	2.007
0.193548387096774			16.54	13.2	7.258	3.976	3.81	1.752
0.225806451612903			15.27	12.94	6.618	3.847	3.548	1.751
0.258064516129032			13.86	11.1	6.478	3.842	3.543	1.707
0.290322580645161			13.3	10.58	6.461	3.79	3.536	1.64
0.32258064516129			12.27	10.31	6.413	3.754	3.443	1.617
0.354838709677419			12.27	10.03	6.395	3.661	3.174	1.608
0.387096774193548			11.87	9.915	6.343	3.592	3.098	1.565

0.419354838709677	11.76	9.412	5.648	3.509	3.062	1.551
0.451612903225806	11.54	9.236	5.575	3.5	3.042	1.53
0.483870967741936	11.36	9.038	5.526	3.449	3.035	1.52
0.516129032258065	11.27	9.006	5.392	3.44	2.955	1.4
0.548387096774194	9.603	7.749	4.602	3.39	2.908	1.397
0.580645161290323	9.488	7.584	4.552	3.294	2.559	1.307
0.612903225806452	9.409	7.555	4.479	3.207	2.523	1.303
0.645161290322581	9.35	7.46	4.256	3.095	2.416	1.296
0.67741935483871	8.251	6.584	3.788	2.909	2.399	1.188
0.709677419354839	7.808	6.258	3.659	2.74	2.372	1.09
0.741935483870968	7.75	6.171	3.397	2.609	2.351	1.076
0.774193548387097	7.492	5.99	3.167	2.491	2.279	1.073
0.806451612903226	7.248	5.71	3.099	2.346	2.24	1.063
0.838709677419355	5.746	4.62	2.879	2.298	2.174	1.046
0.870967741935484	5.665	4.479	2.742	2.287	2.09	1.027
0.903225806451613	5.587	4.424	2.7	2.271	2.067	0.9522
0.935483870967742	5.182	4.108	2.595	2.175	2.066	0.9433
0.967741935483871	4.712	3.844	2.359	2.074	1.879	0.7786

0.1 22.302 17.963 10.2426 6.4511 5.5131 2.1023
Average of yearly averages: 1.45847

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

Data used for this run:

Output File: PYFLNuA

Metfile: w12834.dvf

PRZM scenario: FLnursery_NirrigC.txt

EXAMS environment file: ir298.exv

Chemical Name: pyraclostrobin

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	388	g/mol	
Henry's Law Const.	henry	4.12e-9	atm-m ³ /mol	
Vapor Pressure	vapr	1.95e-08	torr	
Solubility	sol	24.1	mg/L	
Kd	Kd		mg/L	
Koc	Koc	9304	mg/L	
Photolysis half-life	kdp	0.08	days	Half-life
Aerobic Aquatic Metabolism	kbacw	496.28	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	6.6	days	Halfife
Aerobic Soil Metabolism	asm	248.14	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method: CAM	2	integer		See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate: TAPP		0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	15-03	dd/mm or dd/mm or dd-mm or dd-mmm	
Interval 1	interval	14	days	Set to 0 or delete line for single app.
Interval 2	interval	14	days	Set to 0 or delete line for single app.
Interval 3	interval	14	days	Set to 0 or delete line for single app.
Interval 4	interval	14	days	Set to 0 or delete line for single app.
Interval 5	interval	14	days	Set to 0 or delete line for single app.

Record 17: FILTRA
 IPSCND1
 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 PYMINuA.out

Chemical: pyraclostrobin

PRZM environment: MInursery_NirrigC.txt modified Tuesday, 17 April 2007 at 08:27:58

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

Metfile: w14840.dvf modified Wednesday, 3 July 2002 at 09:05:38

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	7.32	5.97	3.869	2.716	2.503	0.8316
1962	8.759	7.132	3.653	2.531	2.374	0.798
1963	4.651	3.715	2.538	2.245	2.032	0.7471
1964	4.89	3.944	2.717	2.214	2.013	0.6637
1965	18.53	15.18	8.281	5.128	4.124	1.399
1966	4.435	3.56	2.644	2.245	1.975	0.7272
1967	4.403	3.543	2.457	2.235	2.148	0.7706
1968	4.708	3.774	2.992	2.45	2.154	0.693
1969	5.428	4.461	2.959	2.328	2.032	0.8221
1970	6.127	5.309	3.118	2.492	2.373	0.8591
1971	4.749	3.803	2.562	2.279	1.999	0.6781
1972	13.23	10.76	5.769	3.842	3.314	1.194
1973	6.626	5.45	4.114	3.241	2.78	0.904
1974	4.925	3.979	3.028	2.341	2.106	0.7286
1975	19.47	15.92	9.874	5.188	4.246	1.374
1976	4.054	3.247	2.276	2.087	1.874	0.6787
1977	4.379	3.509	2.597	2.3	2.037	0.714
1978	7.184	5.874	4.18	3.295	2.942	1.103
1979	4.495	3.621	2.631	2.318	2.063	0.7005
1980	11.9	9.689	6.057	3.771	3.204	1.081
1981	8.269	6.758	3.75	2.715	2.595	1.058
1982	5.381	4.345	2.934	2.476	2.319	0.9237
1983	10.42	8.567	4.772	3.174	2.835	1.055
1984	4.595	3.688	2.515	2.24	2.041	0.7052
1985	12.68	10.29	5.887	4.377	3.528	1.246
1986	36.61	29.92	16.53	8.683	6.509	2.037
1987	20.17	16.37	9.785	5.135	4.098	1.266
1988	9.154	7.426	3.823	2.784	2.527	1.002
1989	10.35	8.411	5.419	3.44	2.921	0.8799
1990	4.171	3.379	2.418	2.206	2.035	0.9186

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			36.61	29.92	16.53	8.683	6.509	2.037
0.0645161290322581			20.17	16.37	9.874	5.188	4.246	1.399
0.0967741935483871			19.47	15.92	9.785	5.135	4.124	1.374
0.129032258064516			18.53	15.18	8.281	5.128	4.098	1.266
0.161290322580645			13.23	10.76	6.057	4.377	3.528	1.246
0.193548387096774			12.68	10.29	5.887	3.842	3.314	1.194
0.225806451612903			11.9	9.689	5.769	3.771	3.204	1.103
0.258064516129032			10.42	8.567	5.419	3.44	2.942	1.081
0.290322580645161			10.35	8.411	4.772	3.295	2.921	1.058
0.32258064516129			9.154	7.426	4.18	3.241	2.835	1.055
0.354838709677419			8.759	7.132	4.114	3.174	2.78	1.002
0.387096774193548			8.269	6.758	3.869	2.784	2.595	0.9237

0.419354838709677	7.32	5.97	3.823	2.716	2.527	0.9186
0.451612903225806	7.184	5.874	3.75	2.715	2.503	0.904
0.483870967741936	6.626	5.45	3.653	2.531	2.374	0.8799
0.516129032258065	6.127	5.309	3.118	2.492	2.373	0.8591
0.548387096774194	5.428	4.461	3.028	2.476	2.319	0.8316
0.580645161290323	5.381	4.345	2.992	2.45	2.154	0.8221
0.612903225806452	4.925	3.979	2.959	2.341	2.148	0.798
0.645161290322581	4.89	3.944	2.934	2.328	2.106	0.7706
0.67741935483871	4.749	3.803	2.717	2.318	2.063	0.7471
0.709677419354839	4.708	3.774	2.644	2.3	2.041	0.7286
0.741935483870968	4.651	3.715	2.631	2.279	2.037	0.7272
0.774193548387097	4.595	3.688	2.597	2.245	2.035	0.714
0.806451612903226	4.495	3.621	2.562	2.245	2.032	0.7052
0.838709677419355	4.435	3.56	2.538	2.24	2.032	0.7005
0.870967741935484	4.403	3.543	2.515	2.235	2.013	0.693
0.903225806451613	4.379	3.509	2.457	2.214	1.999	0.6787
0.935483870967742	4.171	3.379	2.418	2.206	1.975	0.6781
0.967741935483871	4.054	3.247	2.276	2.087	1.874	0.6637

0.1 19.376 15.846 9.6346 5.1343 4.1214 1.3632
Average of yearly averages: 0.951956666666667

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

Data used for this run:

Output File: PYMINuA

Metfile: w14840.dvf

PRZM scenario: MInursery_NirrigC.txt

EXAMS environment file: ir298.exv

Chemical Name: pyraclostrobin

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	388	g/mol	
Henry's Law Const.	henry	4.12e-9	atm-m ³ /mol	
Vapor Pressure	vapr	1.95e-08	torr	
Solubility	sol	24.1	mg/L	
Kd	Kd		mg/L	
Koc	Koc	9304	mg/L	
Photolysis half-life	kdp	0.08	days	Half-life
Aerobic Aquatic Metabolism	kbacw	496.28	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	6.6	days	Halfife
Aerobic Soil Metabolism	asm	248.14	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method: CAM	2	integer		See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate: TAPP		0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	15-06	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	14	days	Set to 0 or delete line for single app.
Interval 2	interval	14	days	Set to 0 or delete line for single app.
Interval 3	interval	14	days	Set to 0 or delete line for single app.
Interval 4	interval	14	days	Set to 0 or delete line for single app.
Interval 5	interval	14	days	Set to 0 or delete line for single app.

Record 17: FILTRA
 IPSCND1
 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 PYNJNuA.out

Chemical: pyraclostrobin

PRZM environment: NJnursery_NirrigC.txt modified Tuesday, 17 April 2007 at 08:27:36

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

Metfile: w93730.dvf modified Wednesday, 3 July 2002 at 09:05:58

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	5.163	4.116	2.714	2.334	2.077	0.8835
1962	11.95	9.594	4.68	3.268	2.897	1.577
1963	9.007	7.232	5.383	3.484	2.895	1.347
1964	9.432	7.814	4.173	2.797	2.756	1.317
1965	10.97	8.841	4.447	3.1	2.668	0.8337
1966	39.83	31.86	15.37	8.154	6.048	2.55
1967	35.81	30.88	15.83	7.487	5.771	2.148
1968	15.37	12.42	7.104	4.233	3.543	1.398
1969	48.57	40.12	23.36	10.89	7.952	2.473
1970	8.618	6.963	5.229	3.674	3.052	1.28
1971	20.89	16.78	11.5	7.748	5.924	2.348
1972	10.45	8.494	5.724	3.753	3.166	1.698
1973	12.88	10.31	4.966	2.773	2.476	1.339
1974	12.45	10.05	5.175	2.983	2.975	1.284
1975	11.02	8.891	5.104	4.34	4.08	1.605
1976	14.77	11.78	7.751	3.689	3.235	1.523
1977	8.242	6.648	4.544	3.005	2.766	1.498
1978	25.31	20.37	11.11	6.752	5.457	1.914
1979	33.97	27.42	13.77	6.612	5.363	2.028
1980	4.555	3.935	3.091	2.56	2.355	0.9495
1981	10.23	8.251	5.942	3.939	3.3	1.072
1982	6.649	5.384	3.595	3.033	2.623	0.9983
1983	6.504	5.213	3.395	2.721	2.399	1.212
1984	20.12	16.3	8.744	5.311	4.193	1.419
1985	6.028	4.849	3.171	2.679	2.639	0.9598
1986	8.482	7.272	4.405	2.95	2.655	1.364
1987	23.87	19.11	10.74	5.475	4.46	1.578
1988	6.759	5.448	4.05	2.76	2.562	1.144
1989	19.3	15.53	7.974	5.676	4.849	1.982
1990	13.7	11.08	6.119	3.741	3.224	1.196

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			48.57	40.12	23.36	10.89	7.952	2.55
0.0645161290322581			39.83	31.86	15.83	8.154	6.048	2.473
0.0967741935483871			35.81	30.88	15.37	7.748	5.924	2.348
0.129032258064516			33.97	27.42	13.77	7.487	5.771	2.148
0.161290322580645			25.31	20.37	11.5	6.752	5.457	2.028
0.193548387096774			23.87	19.11	11.11	6.612	5.363	1.982
0.225806451612903			20.89	16.78	10.74	5.676	4.849	1.914
0.258064516129032			20.12	16.3	8.744	5.475	4.46	1.698
0.290322580645161			19.3	15.53	7.974	5.311	4.193	1.605
0.32258064516129			15.37	12.42	7.751	4.34	4.08	1.578
0.354838709677419			14.77	11.78	7.104	4.233	3.543	1.577
0.387096774193548			13.7	11.08	6.119	3.939	3.3	1.523

0.419354838709677	12.88	10.31	5.942	3.753	3.235	1.498
0.451612903225806	12.45	10.05	5.724	3.741	3.224	1.419
0.483870967741936	11.95	9.594	5.383	3.689	3.166	1.398
0.516129032258065	11.02	8.891	5.229	3.674	3.052	1.364
0.548387096774194	10.97	8.841	5.175	3.484	2.975	1.347
0.580645161290323	10.45	8.494	5.104	3.268	2.897	1.339
0.612903225806452	10.23	8.251	4.966	3.1	2.895	1.317
0.645161290322581	9.432	7.814	4.68	3.033	2.766	1.284
0.67741935483871	9.007	7.272	4.544	3.005	2.756	1.28
0.709677419354839	8.618	7.232	4.447	2.983	2.668	1.212
0.741935483870968	8.482	6.963	4.405	2.95	2.655	1.196
0.774193548387097	8.242	6.648	4.173	2.797	2.639	1.144
0.806451612903226	6.759	5.448	4.05	2.773	2.623	1.072
0.838709677419355	6.649	5.384	3.595	2.76	2.562	0.9983
0.870967741935484	6.504	5.213	3.395	2.721	2.476	0.9598
0.903225806451613	6.028	4.849	3.171	2.679	2.399	0.9495
0.935483870967742	5.163	4.116	3.091	2.56	2.355	0.8835
0.967741935483871	4.555	3.935	2.714	2.334	2.077	0.8337

0.1 35.626 30.534 15.21 7.7219 5.9087 2.328

Average of yearly averages: 1.49729333333333

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

Data used for this run:

Output File: PYNJNuA

Metfile: w93730.dvf

PRZM scenario: NJnursery_NirrigC.txt

EXAMS environment file: ir298.exv

Chemical Name: pyraclostrobin

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	388	g/mol	
Henry's Law Const.	henry	4.12e-9	atm-m ³ /mol	
Vapor Pressure	vapr	1.95e-08	torr	
Solubility	sol	24.1	mg/L	
Kd	Kd		mg/L	
Koc	Koc	9304	mg/L	
Photolysis half-life	kdp	0.08	days	Half-life
Aerobic Aquatic Metabolism	kbacw	496.28	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	6.6	days	Halfife
Aerobic Soil Metabolism	asm	248.14	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method:	CAM 2	integer		See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	01-05	dd/mm or dd/mm or dd-mm or dd-mmm	
Interval 1	interval	14	days	Set to 0 or delete line for single app.
Interval 2	interval	14	days	Set to 0 or delete line for single app.
Interval 3	interval	14	days	Set to 0 or delete line for single app.
Interval 4	interval	14	days	Set to 0 or delete line for single app.
Interval 5	interval	14	days	Set to 0 or delete line for single app.

Record 17: FILTRA
 IPSCND1
 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 PYORNuA.out

Chemical: pyraclostrobin

PRZM environment: ORnursery_NirrigC.txt modified Tuesday, 17 April 2007 at 08:27:14

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

Metfile: w24229.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	5.522	4.581	3.276	2.982	2.575	0.7433
1962	5.949	4.899	3.149	2.568	2.341	0.7666
1963	5.091	4.397	3.232	2.891	2.627	0.7942
1964	5.557	4.583	3.134	2.728	2.548	0.7864
1965	5.265	4.358	3.107	2.753	2.492	0.78
1966	5.29	4.385	3.128	2.719	2.458	0.7918
1967	4.818	4.078	3.154	2.73	2.471	0.711
1968	5.713	4.674	3.729	3.035	2.646	0.8848
1969	4.9	4.057	3.087	2.745	2.504	0.8408
1970	5.736	4.742	3.768	3.394	3.008	0.8575
1971	5.051	4.181	3.027	2.674	2.532	0.7981
1972	5.263	4.354	3.324	2.866	2.663	0.7851
1973	4.502	3.728	2.758	2.492	2.271	0.782
1974	6.156	5.416	3.737	3.156	2.905	0.8691
1975	5.168	4.268	3.118	2.867	2.607	0.7587
1976	5.777	4.809	3.372	2.713	2.434	0.6745
1977	4.497	3.727	2.755	2.412	2.155	0.7383
1978	4.665	3.862	2.842	2.595	2.315	0.6871
1979	4.881	4.061	3.086	2.797	2.459	0.7367
1980	4.998	4.361	3.058	2.743	2.594	0.8778
1981	4.949	4.086	3.155	2.724	2.418	0.7936
1982	6.025	4.987	3.796	3.108	2.769	0.8909
1983	6.475	5.366	3.877	3.251	2.88	0.8886
1984	4.68	3.869	2.809	2.506	2.327	0.7894
1985	4.663	3.843	2.762	2.43	2.181	0.6749
1986	5.032	4.154	3.031	2.65	2.341	0.7016
1987	7.068	5.809	4.034	3.43	2.886	0.8749
1988	4.631	3.815	2.767	2.478	2.351	0.7523
1989	5.603	4.653	3.364	2.827	2.492	0.721
1990	4.889	4.015	2.868	2.601	2.336	0.6741

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			7.068	5.809	4.034	3.43	3.008	0.8909
0.0645161290322581			6.475	5.416	3.877	3.394	2.905	0.8886
0.0967741935483871			6.156	5.366	3.796	3.251	2.886	0.8848
0.129032258064516			6.025	4.987	3.768	3.156	2.88	0.8778
0.161290322580645			5.949	4.899	3.737	3.108	2.769	0.8749
0.193548387096774			5.777	4.809	3.729	3.035	2.663	0.8691
0.225806451612903			5.736	4.742	3.372	2.982	2.646	0.8575
0.258064516129032			5.713	4.674	3.364	2.891	2.627	0.8408
0.290322580645161			5.603	4.653	3.324	2.867	2.607	0.7981
0.32258064516129			5.557	4.583	3.276	2.866	2.594	0.7942
0.354838709677419			5.522	4.581	3.232	2.827	2.575	0.7936
0.387096774193548			5.29	4.397	3.155	2.797	2.548	0.7918

0.419354838709677	5.265	4.385	3.154	2.753	2.532	0.7894
0.451612903225806	5.263	4.361	3.149	2.745	2.504	0.7864
0.483870967741936	5.168	4.358	3.134	2.743	2.492	0.7851
0.516129032258065	5.091	4.354	3.128	2.73	2.492	0.782
0.548387096774194	5.051	4.268	3.118	2.728	2.471	0.78
0.580645161290323	5.032	4.181	3.107	2.724	2.459	0.7666
0.612903225806452	4.998	4.154	3.087	2.719	2.458	0.7587
0.645161290322581	4.949	4.086	3.086	2.713	2.434	0.7523
0.67741935483871	4.9	4.078	3.058	2.674	2.418	0.7433
0.709677419354839	4.889	4.061	3.031	2.65	2.351	0.7383
0.741935483870968	4.881	4.057	3.027	2.601	2.341	0.7367
0.774193548387097	4.818	4.015	2.868	2.595	2.341	0.721
0.806451612903226	4.68	3.869	2.842	2.568	2.336	0.711
0.838709677419355	4.665	3.862	2.809	2.506	2.327	0.7016
0.870967741935484	4.663	3.843	2.767	2.492	2.315	0.6871
0.903225806451613	4.631	3.815	2.762	2.478	2.271	0.6749
0.935483870967742	4.502	3.728	2.758	2.43	2.181	0.6745
0.967741935483871	4.497	3.727	2.755	2.412	2.155	0.6741

0.1 6.1429 5.3281 3.7932 3.2415 2.8854 0.8841
Average of yearly averages: 0.780836666666667

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

Data used for this run:

Output File: PYORNuA

Metfile: w24229.dvf

PRZM scenario: ORnursery_NirrigC.txt

EXAMS environment file: ir298.exv

Chemical Name: pyraclostrobin

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	388	g/mol	
Henry's Law Const.	henry	4.12e-09	atm-m ³ /mol	
Vapor Pressure	vapr	1.95e-08	torr	
Solubility	sol	24.1	mg/L	
Kd	Kd		mg/L	
Koc	Koc	9304	mg/L	
Photolysis half-life	kdp	0.08	days	Half-life
Aerobic Aquatic Metabolism	kbacw	496.28	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	6.6	days	Halfife
Aerobic Soil Metabolism	asm	248.14	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method: CAM	2	integer		See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate: TAPP		0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	15-01	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	14	days	Set to 0 or delete line for single app.
Interval 2	interval	14	days	Set to 0 or delete line for single app.
Interval 3	interval	14	days	Set to 0 or delete line for single app.
Interval 4	interval	14	days	Set to 0 or delete line for single app.
Interval 5	interval	14	days	Set to 0 or delete line for single app.

Record 17: FILTRA
 IPSCND1
 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 PYTNNuA.out

Chemical: pyraclostrobin

PRZM environment: TNnursery_NirrigC.txt modified Tuesday, 17 April 2007 at 08:28:44

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

Metfile: w13882.dvf modified Wednesday, 3 July 2002 at 09:06:20

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	14.02	11.31	6.548	3.098	2.73	1.125
1962	8.232	6.595	4.161	3.14	2.739	1.441
1963	10.2	8.312	6.458	4.377	3.494	1.508
1964	15	12.05	6.138	3.918	3.475	1.763
1965	7.913	6.378	3.183	2.599	2.442	1.199
1966	9.488	8.268	5.306	3.142	2.687	1.295
1967	15.83	13.43	8.227	4.847	3.816	1.443
1968	4.22	3.37	2.377	2.115	1.939	0.7924
1969	13.94	11.16	7.147	4.152	3.475	1.408
1970	9.091	7.324	5.032	3.321	2.831	1.343
1971	11.83	10.24	6.837	3.943	3.247	1.443
1972	16.34	14.19	10.71	6.094	4.956	1.831
1973	10.01	8.164	5.218	3.489	3.156	1.784
1974	13.03	10.87	7.962	4.489	3.625	1.385
1975	17.41	14.04	8.454	5.846	5.292	2.171
1976	15.16	12.13	6.499	4.809	3.82	1.299
1977	35.41	28.48	17.55	8.763	6.851	2.568
1978	5.755	5.086	3.248	2.416	2.214	0.9016
1979	26.56	22.78	12.97	7.09	5.966	2.459
1980	9.271	7.459	4.207	2.13	1.846	1.066
1981	6.442	5.537	4.036	3.017	2.82	1.131
1982	10.28	8.259	5.767	3.783	3.168	1.559
1983	8.869	7.187	5.523	2.793	1.99	1.22
1984	7.294	5.854	4.474	3.235	2.671	1.205
1985	6.91	5.562	3.788	2.842	2.524	1.083
1986	15.81	12.69	6.325	3.555	3.161	1.537
1987	7.287	5.823	4.502	3.107	2.635	1.096
1988	12.29	9.864	6.639	4.34	3.736	1.47
1989	13	11.01	7.583	5.793	4.627	1.995
1990	7.692	6.195	3.534	2.911	2.507	1.423

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			35.41	28.48	17.55	8.763	6.851	2.568
0.0645161290322581			26.56	22.78	12.97	7.09	5.966	2.459
0.0967741935483871			17.41	14.19	10.71	6.094	5.292	2.171
0.129032258064516			16.34	14.04	8.454	5.846	4.956	1.995
0.161290322580645			15.83	13.43	8.227	5.793	4.627	1.831
0.193548387096774			15.81	12.69	7.962	4.847	3.82	1.784
0.225806451612903			15.16	12.13	7.583	4.809	3.816	1.763
0.258064516129032			15	12.05	7.147	4.489	3.736	1.559
0.290322580645161			14.02	11.31	6.837	4.377	3.625	1.537
0.32258064516129			13.94	11.16	6.639	4.34	3.494	1.508
0.354838709677419			13.03	11.01	6.548	4.152	3.475	1.47
0.387096774193548			13	10.87	6.499	3.943	3.475	1.443

0.419354838709677	12.29	10.24	6.458	3.918	3.247	1.443
0.451612903225806	11.83	9.864	6.325	3.783	3.168	1.441
0.483870967741936	10.28	8.312	6.138	3.555	3.161	1.423
0.516129032258065	10.2	8.268	5.767	3.489	3.156	1.408
0.548387096774194	10.01	8.259	5.523	3.321	2.831	1.385
0.580645161290323	9.488	8.164	5.306	3.235	2.82	1.343
0.612903225806452	9.271	7.459	5.218	3.142	2.739	1.299
0.645161290322581	9.091	7.324	5.032	3.14	2.73	1.295
0.67741935483871	8.869	7.187	4.502	3.107	2.687	1.22
0.709677419354839	8.232	6.595	4.474	3.098	2.671	1.205
0.741935483870968	7.913	6.378	4.207	3.017	2.635	1.199
0.774193548387097	7.692	6.195	4.161	2.911	2.524	1.131
0.806451612903226	7.294	5.854	4.036	2.842	2.507	1.125
0.838709677419355	7.287	5.823	3.788	2.793	2.442	1.096
0.870967741935484	6.91	5.562	3.534	2.599	2.214	1.083
0.903225806451613	6.442	5.537	3.248	2.416	1.99	1.066
0.935483870967742	5.755	5.086	3.183	2.13	1.939	0.9016
0.967741935483871	4.22	3.37	2.377	2.115	1.846	0.7924

0.1 17.303 14.175 10.4844 6.0692 5.2584 2.1534
Average of yearly averages: 1.4648

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

Data used for this run:

Output File: PYTNNuA

Metfile: w13882.dvf

PRZM scenario: TNnursery_NirrigC.txt

EXAMS environment file: ir298.exv

Chemical Name: pyraclostrobin

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	388	g/mol	
Henry's Law Const.	henry	4.12e-9	atm-m ³ /mol	
Vapor Pressure	vapr	1.95e-08	torr	
Solubility	sol	24.1	mg/L	
Kd	Kd		mg/L	
Koc	Koc	9304	mg/L	
Photolysis half-life	kdp	0.08	days	Half-life
Aerobic Aquatic Metabolism	kbacw	496.28	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	6.6	days	Halfife
Aerobic Soil Metabolism	asm	248.14	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method:	CAM 2	integer		See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	01-06	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	14	days	Set to 0 or delete line for single app.
Interval 2	interval	14	days	Set to 0 or delete line for single app.
Interval 3	interval	14	days	Set to 0 or delete line for single app.
Interval 4	interval	14	days	Set to 0 or delete line for single app.
Interval 5	interval	14	days	Set to 0 or delete line for single app.

Record 17:	FILTRA			
	IPSCND1			
	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)	

Appendix B – SCIGROW Output File

SCIGROW
VERSION 2.3
ENVIRONMENTAL FATE AND EFFECTS DIVISION
OFFICE OF PESTICIDE PROGRAMS
U.S. ENVIRONMENTAL PROTECTION AGENCY
SCREENING MODEL
FOR AQUATIC PESTICIDE EXPOSURE

SciGrow version 2.3
chemical:pyraclostrobin
time is 8/31/2007 15:16: 6

Application rate (lb/acre)	Number of applications	Total Use (lb/acre/yr)	Koc (ml/g)	Soil Aerobic metabolism (days)
0.500	6.0	3.000	7.89E+03	105.0

groundwater screening cond (ppb) = 2.30E-02
