

Figure 6. Differences in chlorpyrifos concentrations between inflow and vegetated ditch.

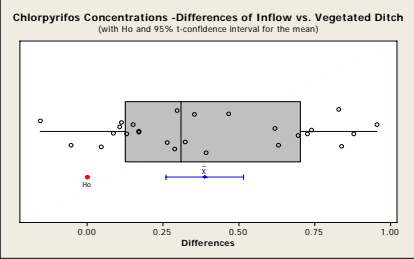


Figure 7. Probability plot of fraction chlorpyrifos reduced between inflow and vegetated ditch.

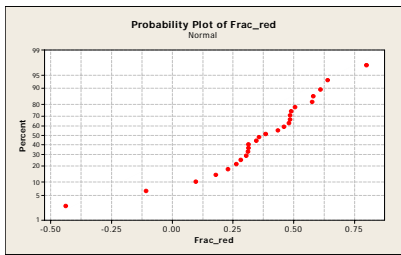


Figure 8. Fraction of chlorpyrifos reduced between inflow and vegetated ditch by irrigation event. Boxplot shows median, 25%, 75%.

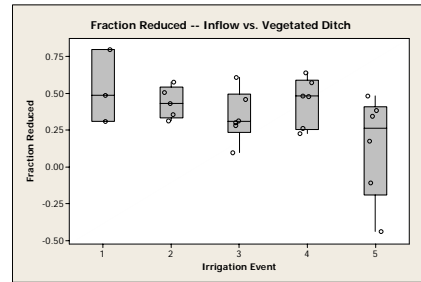
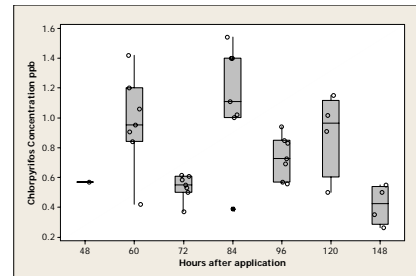


Figure 9. Chlorpyrifos concentrations in runoff at Sample Site 3 (Conv. Ditch) vs. hours after application.



X. TABLES AND FIGURES

Table 1. Number samples collected at each sampling site.

Irrigation set number	Hours after chlorpyrifos application	Number samples collected		
		Sample Site 1 (Inflow)	Sample Site 2 (Veg Ditch)	Sample Site 3 (Conv. Ditch)
1	48	8	3	1
2	60	7	5	7
3	72	6	6	7
4	84	6	6	7
5	96	6	6	7

Table 3. Treatment mean and SE of chlorpyrifos concentrations in runoff samples.

Irrigation Event	Sample Site 1 (Inflow)			Sample Site 2 (Veg Ditch)			Sample Site 3 (Conv. Ditch)		
	Mean Conc. ± SE (µg/L)	N		Mean Conc. ± SE (µg/L)	N		Mean Conc. ± SE (µg/L)	N	
1	0.80 ± 0.09	8		0.28 ± 0.03	3		0.57 ± NA	1	
2	1.17 ± 0.19	7		0.68 ± 0.12	5		0.97 ± 0.12	7	
3	0.64 ± 0.09	6		0.39 ± 0.02	6		0.54 ± 0.05	7	
4	1.12 ± 0.17	6		0.58 ± 0.06	6		1.12 ± 0.15	7	
5	0.69 ± 0.10	6		0.52 ± 0.01	6		0.74 ± 0.05	7	

Table 4. Chlorpyrifos concentrations on mass deposition sheets

Sample Number	Chlorpyrifos Conc. (µg/l)		% of Applied Rate	Sample Number	Chlorpyrifos Conc. (µg/l)		% of Applied Rate	Sample Number	Chlorpyrifos Conc. (µg/l)		% of Applied Rate
	Conc.	% of Applied Rate			Conc.	% of Applied Rate			Conc.	% of Applied Rate	
1	196	0.38	11	64.8	1.24	21	51	100			
2	112	0.22	12	54	1.04	22	59	110			
3	10.4	0.2	13	66.4	0.89	23	54.4	1.01			
4	14	0.28	14	68.4	0.88	24	69	115			
5	NA	NA	15	43	0.83	25	47.4	0.91			
6	17	0.33	16	33.4	0.64	26	43.6	0.84			
7	39	0.65	17	80	0.77	27	43.2	0.94			
8	50.4	0.97	18	33.4	0.64	28	60.4	1.16			
9	51.2	0.98	19	31.4	0.6	29	84	1.23			
10	52	1	20	41	0.79						

Table 2. Whole water Chlorpyrifos concentrations in runoff samples.

Sample Site 1 (Inflow)	Sample Site 2 (Veg Ditch)		Sample Site 3 (Conv. Ditch)		
	Conc. (µg/L)	Irrigation Set	Conc. (µg/L)	Irrigation Set	
0.59	1	0.3	1	0.57	1
0.48	1	0.33	1	0.42	2
1.1	1	0.22	1	0.9	2
1.04	1	0.23	2	0.95	2
1.08	1	0.82	2	1.2	2
0.85	1	0.94	2	1.42	2
0.7	1	0.71	2	1.06	2
0.6	1	0.69	2	0.84	2
0.34	2	0.39	3	0.37	3
1.66	2	0.4	3	0.58	3
1.67	2	0.42	3	0.61	3
1.1	2	0.43	3	0.61	3
1.65	2	0.37	3	0.53	3
0.95	2	0.33	3	0.55	3
0.84	2	0.29	4	0.5	3
0.56	3	0.42	4	0.39	4
1.02	3	0.61	4	1.54	4
0.77	3	0.67	4	1.4	4
0.48	3	0.75	4	1.4	4
0.54	3	0.74	4	1.11	4
0.46	3	0.51	5	1	4
0.38	4	0.55	5	1.02	4
1.16	4	0.52	5	0.57	5
1.44	4	0.51	5	0.56	5
1.3	4	0.56	5	0.69	5
1.45	4	0.49	5	0.83	5
1	4			0.94	5
0.36	5			0.85	5
0.5	5			0.72	5
0.63	5			0.50	6
0.84	5			0.91	6
0.86	5			1.02	6
0.96	5			1.15	6
				0.264	7
				0.35	7
				0.5	7
				0.55	7

Table 5. Suspended sediment concentrations in runoff samples

Sample Site 1 (Inflow)		Sample Site 2 (Veg.Ditch)		Sample Site 3 (Conv.Ditch)	
Suspended Sediment (g/L)	Irrigation Event #	Suspended Sediment (g/L)	Irrigation Event #	Suspended Sediment (g/L)	Irrigation Event #
0.035	2	0.189	2	0.231	2
0.018	2	0.03	2	0.33	2
0.02	2	0.018	2	0.084	2
0.022	2	0.011	2	0.052	2
0.043	2	0.021	2	0.035	2
0.097	3	0.111	3	0.132	3
0.018	3	0.018	3	0.081	3
0.029	3	0.035	3	0.024	3
0.031	3	0.017	3	0.099	3
0.031	3	0.04	3	0.023	3
0.039	4	0.021	4	0.048	4
0.016	4	0.02	4	0.034	4
0.021	4	0.011	4	0.012	4
0.04	4	0.013	4	0.027	4
0.028	4	0.046	4	0.015	4
0.032	5	0.02	5	0.035	5
0.066	5	0.041	5	0.027	5
0.024	5	0.023	5	0.02	5
0.017	5	0.031	5	0.012	5
0.016	5	0.041	5	0.014	5

Table 6. Treatment mean suspended sediment concentration for each sampling site.

Irrigation Event	Sample Site 1 (inflow)		Sample Site 2 (Veg.Ditch)		Sample Site 3 (Conv.Ditch)	
	Mean TSS ± SE mean (g/L)	N	Mean TSS ± SE mean (g/L)	N	Mean TSS ± SE mean (g/L)	N
2	0.028 ± 0.005	5	0.054 ± 0.034	5	0.146 ± 0.058	5
3	0.041 ± 0.014	5	0.044 ± 0.017	5	0.0718 ± 0.021	5
4	0.029 ± 0.005	5	0.022 ± 0.006	5	0.027 ± 0.007	5
5	0.031 ± 0.009	5	0.031 ± 0.004	5	0.022 ± 0.004	5

Table 7. Mean chlorpyrifos concentrations at Sample Site 3 for each irrigation event.

Sample Site 3 (Conv. Ditch)		
Hours After Application	Mean Conc. ± SE (µg/L)	N
48	0.57	1
60	0.97 ± 0.12	7
72	0.54 ± 0.032	7
84	1.12 ± 0.15	7
96	0.74 ± 0.06	7
120	0.90 ± 0.14	4
144	0.42 ± 0.07	4

Table 9. QC- Surrogate results summary

Matrix	Mean surrogate % recovery in lab QC blanks and spikes	Surrogate standard deviation lab samples	Mean surrogate % recovery in analyzed field samples	Surrogate standard deviation field samples	Percent difference of the means
Water samples	77.8	4.78	83.0	16.7	17.8
MDS samples	88.9	0.616	84.0	9.89	5.65

Table 8. Continuing Laboratory QC

DPR sample number	DFG lab number	Extraction date	Analysis date	Amount recovered (ppb)	% Recovery chlorpyrifos	Surrogate recovered (ppb)	% Recovery surrogate
1-4, 15-24, 37-43		7/18/2006	7/21/2006				
44-47, 49-65		7/19/2006	7/21/2006				
66-67, 73-76, 88-103		7/20/2006	7/21/2006				
L-366-06-LCS-1		7/21/2006	7/21/2006	0.131	65.7	0.146	73.0
L-366-06-LCSD-1		7/21/2006	7/21/2006	0.128	63.8	0.147	73.4
L-366-06-LCS-2		7/21/2006	7/21/2006	0.124	61.9	0.145	72.3
L-366-06-LCSD-2		7/21/2006	7/21/2006	0.122	61.2	0.146	72.8
L-366-06-LCS-3		7/21/2006	7/21/2006	0.141	70.6	0.148	73.8
L-366-06-LCSD-3		7/21/2006	7/21/2006	0.141	70.4	0.157	78.3
L-366-06-LCS-4		7/21/2006	7/21/2006	0.145	72.7	0.154	77.1
L-366-06-LCSD-4		7/21/2006	7/21/2006	0.123	61.5	0.149	74.7
5-10		7/21/2006	7/26/2006				
11-14, 25-27		7/22/2006	7/26/2006				
28-34		7/23/2006	7/26/2006				
35-36, 79-87, 110-111, 113, 115, 117, 119, 121, 1004, 1020, 1026, 1049, 1091, 1109, 1111, 1113, 1115		7/24/2006	7/26/2006				
L-368-06-LCS-5		7/25/2006	7/26/2006	0.166	82.8	0.160	80.2
L-368-06-LCSD-5		7/25/2006	7/26/2006	0.151	75.6	0.156	77.8
L-368-06-LCS-6		7/25/2006	7/26/2006	0.161	80.4	0.179	89.7
L-368-06-LCSD-6		7/25/2006	7/26/2006	0.158	79.2	0.188	84.2
				Mean	70.5	Mean	77.3
				SD	7.8	SD	5.3

LCS- Laboratory control spike LCSD-Laboratory control spike duplicate. Lab spikes made with clean laboratory water.

From California Department of Fish and Game Water Pollution Control Laboratory Report date: August 15, 2006

Table 10 QC- Matrix blind spike results

DPR sample number	spiked amount*	recovery	Percent recovery	Actual amount spiked	Adjusted percent recovery
40	100	40.0	40	49	61.6
44	20	10.0	50	9.8	102
95	200	90.0	45	98	91.8
67	10	4.40	44	4.9	89.8
54	50	26.0	52	24.5	106
17	50	24.0	48	24.5	98.0
22	20	12.0	60	9.8	122
		mean %	48.4		98.8

*the standard used for the blind spike was less than 50% of its % active ingredient. It was confirmed to be 49% of its value.

Table 11-Continuing Laboratory QC MDS

Associated DPR sample number	DFG lab number	Extraction date	Analysis date	Amount recovered (ppb)	% Recovery chlorpyrifos	Surrogate recovered (ppb)	% Recovery surrogate
All MDS samples	L-357-06-LCS-1	7/12/2006	7/26/2006	0.199	99.4	0.177	88.4
All MDS samples	L-357-06-LCSD-1	7/12/2006	7/26/2006	0.191	95.6	0.180	89.8
All MDS samples	L-357-06-LCS-2	7/12/2006	7/26/2006	0.150	75.0	0.177	88.7
All MDS samples	L-357-06-LCSD-2	7/12/2006	7/26/2006	0.190	95.2	0.177	88.7
				mean %	91.3	mean %	88.9
				SD	11.03	SD	0.616

From California Department of Fish and Game Water Pollution Control Laboratory Report date: August 15, 2006

Table 12 QC- Field replicate analysis

DPR sample number	GC Result at DFG	Replicate DPR number	GC Result at DFG	Relative Percent Difference
4	1.04	1004	0.82	23.7
20	0.77	1020	0.53	36.9
26	1.156	1026	1.24	7.0
49	0.396	1049	0.43	8.2
91	1.4	1091	1.24	12.1

*Relative percent difference for replicates should be less than 25%.