Rice Pesticides Program Monitoring Data

June 10, 2002-**First Update**

The California Rice Commission contracted with Kleinfelder Incorporated to conduct sampling for the 2002 Rice Pesticide Study. Monitoring locations included Colusa Basin Drain at Highway 20 in Colusa County (CBD5), Butte Slough at Lower Pass Road in Sutter County (BS1), and a site on the Sacramento River at the Village Marina (SR1). Background samples were collected on April 9 and sampling began for methyl parathion and malathion on April 24**.** Thiobencarb and molinate monitoring began on May 7. Sampling is conducted at BS1 and SR1 and CBD5 on Tuesdays and Thursdays throughout the 12 weeks of monitoring. Primary sample analysis was performed by Syngenta Ag Products laboratory for molinate, Valent USA laboratory for thiobencarb, California Department of Food and Agriculture (CDFA) laboratory for methyl parathion and malathion. CDFA laboratory conducted quality control (QC) analyses for molinate and thiobencarb. Department of Fish and Game (DFG) laboratory QC analysis for methyl parathion and malathion. DFG laboratory performs toxicity tests, using the aquatic invertebrate *Ceriodaphnia dubia***,** with samples collected at CBD5 on Tuesdays through week ten of the study.

In addition, the cities of Sacramento and West Sacramento performed water quality testing for molinate and thiobencarb at their drinking water intakes located on the Sacramento River. Due to high detections at the drinking water intakes additional sampling occurred at CBD1 near Knight's Landing Results of this analysis are contained in this summary.

CBD5 Monitoring Results (Tables 1)

- Molinate was detected above the performance goal (10.0 ppb) on May 14 (12.0 ppb), May 16 (12.2 ppb), and May 21 (12.9 ppb). Four detections of molinate occurred from May 9-May 21.
- Thiobencarb was detected above the performance goal (1.5 ppb) during on nine consecutive sampling events beginning May 7-May 28. The highest detection was 8.2 ppb on May 23.
- There were no detections of malathion or methyl parathion.

BS1 Monitoring Results (Tables 2)

- Molinate was detected four times from May 9-May 21 and exceeded the performance goal on May 14 (10.8 ppb) and May 16 (17.6 ppb).
- Thiobencarb was detected four times between May 16 and May 28. The performance goal (1.5 ppb) was met or exceeded on May 21 (2.3 ppb), May 23 (3.4 ppb), and May 28 (2.0 ppb).
- There were no detections of methyl parathion or malathion at BS1.

SR1 Monitoring Results (Tables 3)

- Molinate was detected on May 14 (1.26 ppb), May 16 (1.06 ppb), and May 21 (1.9 ppb) at SR1.
- Thiobencarb was detected on May 21 (0.6 ppb), May 23 (0.9 ppb), and May 28 (0.6 ppb).
- There were no detections of methyl parathion or malathion at SR1.

CBD1 Monitoring Results

Preliminary results from CBD1 site located near Knight's Landing for thiobencarb indicate a concentration of 6.2 ppb on May 30 and a concentration of 4.7 ppb on June 4. These detections are higher that detections on the same dates at CBD5.

Department of Fish and Game has reported no incidences of significant mortality of *Ceriodaphnia dubia* in water toxicity tests to date.

City of Sacramento and City of West Sacramento

City of Sacramento and West Sacramento analyzed water samples at their drinking water intakes for thiobencarb and molinate (table 4). Thiobencarb exceeded the Central Valley Regional Water Quality Control Board's (CVRWQCB) identified level of 0.59 ppb at the City of Sacramento drinking water intake on May 24 (0.91 ppb) as specified in the CVRWQCB *Resolution No. R5-2002-0080* approving management practices for the 2002-2003 rice seasons. In addition, the secondary MCL for taste and odor (1.0 ppb) for thiobencarb was exceeded at the West Sacramento drinking water intake on May 24 (1.6 ppb) and exceeded the CVRWQCB maximum level (0.59 ppb), on May 22 (0.65 ppb) and May 27 (0.73 ppb). This will result in a further review of the water management practices for thiobencarb by the CVRWQCB prior to the 2003 rice pesticide use season.

The Cities of West Sacramento and Sacramento, DPR, CVRWQCB, and the California Rice Commission remain concerned about the trend of increasing detections of molinate and thiobencarb at these drinking water intakes. DPR staff will be closely analyzing pesticide use data and detections of molinate and thiobencarb that have occurred in 2002 to try and determine what can be done to reduce their presence in adjacent waterways. Detections of thiobencarb and molinate are higher than in 2001 even with additional management and education measures put into place prior to the rice season. Although, a storm event on May 20 explains some of the higher detections, there are still detections that cannot be explained due to the storm event.

All results are contained in the data tables following this summary. A second update will be provided as monitoring data is available. A final report containing a summary of the 2002 rice monitoring program data will be available December 31, 2002. If you have any questions or concerns contact KayLynn Newhart at (916) 324-4190 or Kean Goh at (916) 324-4072.

PRELIMINARY DATA/SUBJECT TO CHANGE

Table 1. 2002 Pesticide Concentrations at the Colusa Basin Drain near Highway 20 in Colusa County (CBD5) in parts per billion (ppb).

	Molinate		Thiobencarb		Methyl parathion	Malathion
Laboratory type	Primary	QC	Primary	QC	Primary	Primary
Reporting limit (ug/L)	1.0	0.5	0.5	0.5	0.05	0.05
Date						
9-Apr	ND	ND	ND	ND	ND	ND
30-Apr	NA	NA	NA	NA	ND	ND
2-May	NA	NA	NA	NA	ND	ND
7-May	*	*	3.7	*	ND	ND
9-May	8.76	7.35	5.3	*	ND	ND
14-May	12.0	*	7.2	*	ND	ND
16-May	12.2	*	3.6	*	*	*
21-May	12.9	*	5.1	*	*	*
23-May	*	*	8.2	*	*	*
28-May	*	*	7.3	*	*	*

Samples collected by Kleinfelder, Inc. under contract with the California Rice Commission. Key to designations on rice monitoring results tables are shown at the end of the table 1.

PRELIMINARY DATA/SUBJECT TO CHANGE

Table 1 con't. 2002 Pesticide Concentrations at the Colusa Basin Drain near Highway 20 in Colusa County (CBD5) in parts per billion (ppb).

	Molinate		Thiobencarb		Methyl parathion	Malathion
Laboratory type	Primary	QC	Primary	QC	Primary	Primary
Reporting limit (ug/L)	1.0	0.5	0.5	0.5	0.05	0.05
Date						
30-May	*	*	2.9	*	*	*
4-Jun	*	*	2.2	*	*	*

PRELIMINARY DATA/SUBJECT TO CHANGE

Samples collected by Kleinfelder, Inc. under contract with the California Rice Commission.

Key to designations on rice water monitoring results tables:

NS	Not sampled	NA	Not Analyzed
ND	Not detected	*	Results not yet reported

PERFORMANCE GOALS (ppb):

molinate	10.0	methyl parathion	0.13
thiobencarb	1.5	malathion	0.10

PRELIMINARY DATA/SUBJECT TO CHANGE

Table 2. 2002 Pesticide Concentrations at Butte Slough at Lower Pass Road (BS1) in Sutter County in parts per billion (ppb).

	Molinate	Thiobencarb	Methyl parathion	Malathion
Laboratory type	Primary	Primary	Primary	Primary
Reporting limit (ug/L)	1.0	0.5	0.05	0.05
Date				
9-Apr	ND	ND	ND	ND
30-Apr	NA	NA	ND	ND
2-May	NA	NA	ND	ND
7-May	ND	ND	ND	ND
9-May	5.51	ND	ND	ND
14-May	10.8	ND	ND	ND
16-May	17.6	1.4	*	*
21-May	8.41	2.3	*	*
23-May	*	3.4	*	*
28-May	*	2.0	*	*

Samples collected by Kleinfelder, Inc. under contract with the California Rice Commission.

PRELIMINARY DATA/SUBJECT TO CHANGE

Table 3. 2002 Pesticide Concentrations in the Sacramento River at the Village Marina (SR1) in Sacramento County in parts per billion (ppb).

	Molinate	Thiobencarb	Methyl parathion	Malathion
Laboratory type	Primary	Primary	Primary	Primary
Reporting limit (ug/L)	1.0	0.5	0.05	0.05
Date				
9-Apr	ND	ND	ND	ND
30-Apr	NA	NA	ND	ND
2-May	NA	NA	ND	ND
7-May	ND	ND	ND	ND
9-May	ND	ND	ND	ND
14-May	1.26	ND	ND	ND
16-May	1.06	ND	ND	ND
21-May	1.9	0.6	ND	ND
23-May	*	0.9	ND	ND
28-May	*	0.6	ND	ND

Table 4. 2002 rice herbicide monitoring results for molinate and thiobencarb reported by the City of Sacramento Division of Water, Water Quality Laboratory taken at the Sacramento River WTP Intake (SRR) and West Sacramento River WTP Intake. Results in ug/L, (ppb).

CITY OF SACRAMENTO
UTILITIES DIVISION, WATER QUALITY LABORATORY
2002 RICE HERBICIDE ANALYSIS
RESULTS IN UG/L,(SRR-SACRAMENTO RIVER WTP INTAKE)

DATE	ORDRAM SRR	BOLERO SRR	% SACTO. RIVER AT INTAKE	ORDRAM WSR	BOLERO WSR
12-Apr-02	NA	NA	68.9	NA	NA
15-Apr-02	NA	NA	78.6	NA	NA
19-Apr-02	NA	NA	53.9	NA	NA
22-Apr-02	NA	NA	65.6	NA	NA
24-Apr-02	<0.10	<0.10	69.3	<0.10	<0.10
26-Apr-02	NA	NA	70.5	NA	NA
29-Apr-02	NA	NA	74.3	NA	NA
1-May-02	<0.10	<0.10	59.8	<0.10	<0.10
3-May-02	NA	NA	47.6	NA	NA
6-May-02	<0.10	<0.10	67.0	0.18	<0.10
8-May-02	NA	NA	70.2	NA	NA
10-May-02	0.34	0.12	67.0	0.96	0.23
13-May-02	NA	NA	63.6	NA	NA
15-May-02	0.57	0.19	77.4	0.88	0.22
17-May-02	NA	NA	88.4	NA	NA
20-May-02	0.71	0.22	56.8	1.4	0.34
22-May-02	1.1	0.58	54.8	2.4	0.65
24-May-02	1.7	0.91	53.2	4.2	1.6
27-May-02	1.2	0.49	57.5	2.8	0.73
29-May-02	NA	NA	73.8	NA	NA
31-May-02	0.78	0.21	83.0	1.5	0.30
3-Jun-02			66.3		