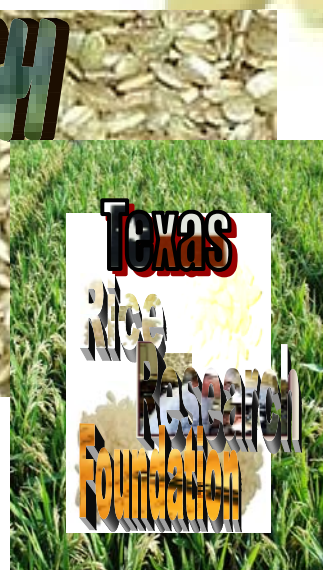


Entomology

FINAL REPORT

OF RESEARCH

FUNDED BY:



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Objectives and Conclusions for Experiments Conducted and Funded by TRRF in 2002 2

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Comparison of Rice Water Weevil (RWW) damage in a stale and conventional seedbed

Objective:

To compare RWW damage and yield response in a stale and conventional seedbed

Conclusions:

Populations of RWW were higher in a conventionally-tilled rather than stale seedbed. Yields were higher in the stale seedbed.

Preflood N vs RWW

Objective:

Does increasing preflood N reduce damage by (RWW)?

Conclusions:

Although all data are not analyzed, the results are clear. Across RWW treated and untreated plots, increasing preflood N: 1) did not increase or decrease RWW populations, and 2) increased yield of main and ratoon crops. Across fertilizer treatments, treating for RWW increased yield of main and ratoon crop (548 and 188 lb/acre, respectively). Interaction of main and sub plots was not significant for main and ratoon crop yields. Thus, increasing preflood N did not decrease RWW damage.

Planting Date Study

Objectives:

- 1) To compare populations of rice water weevil (RWW) on three planting dates (Mar 8, Apr 16 and May 25)**
- 2) To compare efficacy of labeled RWW insecticides on these planting dates, and**
- 3) To compare yields and economic returns as a function of insecticide treatments and planting dates**

Conclusions:

RWW populations and yields were highest on the earliest planting date (Mar 8). All treatments gave excellent yield responses (main and ratoon) on the earliest planting date. Icon 6.2FS gave the highest return at \$129.13/acre. Data suggest that early planted rice derives the greatest benefit from RWW control. Part of this benefit is due to a “carry over effect” on the ratoon crop. Thus, farmers who plant early and plan to ratoon will reap the most benefit from a RWW control program.

Fury vs RWW

Objective:

To determine the best preflood time to apply Fury for RWW control

Conclusions:

The best preflood time to apply Fury for RWW control is as close to the flood as possible. Fury applied immediately before flood gave a yield advantage over the untreated of 1624 lb/acre.

Insecticide Screening, Eagle Lake

Objective:

To screen novel insecticides for activity against RWW

Conclusions:

GF-317 (resolved isomer of Karate Z) was more effective applied immediately before than 4 days after flood. GF-317 performed as well as Karate Z at 1/10 the standard rate of Karate Z. GF-317 at this very low rate outyielded the untreated 918 lb/acre.

F0570 vs RWW

Objective:

To determine the best rate and time to apply F0570 (resolved isomer of Fury) for RWW control

Conclusions:

F0570 applied 1 day before or 3 days after flood at 0.018 to 0.022 lb (AI)/acre was not as effective as Karate Z, Icon 6.2FS or Dimilin 2L. Gaucho 480 seed treatments did not perform as well as the Icon 6.2FS seed treatment. However, across all treatments, the average yield increase over the untreated was 1099 lb/acre.

Stem Borer Host Plant Resistance Study

Objective:

To determine relative susceptibility of 10 rice varieties to stem borers

Conclusions:

Priscilla, Lemont, Saber and Cocodrie were most susceptible while XL7 and XL8 were least susceptible. Across all 10 varieties, average yield loss to stem borers was 1246 lb/acre on the main crop and 166 lb/acre on the ratoon crop. Control of stem borers on the main crop increases yield of both main and ratoon crops.

Monitoring Spread of MRB

Objective:

To monitor spread of the Mexican rice borer (MRB) in the Texas Rice Belt (TRB)

Conclusions:

Not all pheromone trap catches have been identified and counted, but we know that MRB was found in Galveston County in 2002. Thus, MRB has been found in all TRB counties except those east of Harris County.

Stem Borer Insecticide Screening

Objective:

To evaluate timing of Karate Z for control of stem borers

Conclusions:

Stem borers (about 50% sugarcane borer and 50% MRB) began attacking rice close to panicle differentiation. This is similar to data collected from 1999-2001. Results suggest the best time to apply Karate Z for stem borer control is during early boot. Karate Z does not have a stem borer label on rice; I requested Syngenta to add stem borers to the label.

Rice Stink Bug Lab Test

Objective:

To determine direct contact and residual activity of selected insecticides for rice stink bug (RSB) control

Conclusions:

Fury, Karate Z, F0570 and GF-317 all exhibited excellent direct contact activity against RSB. However, none of the treatments gave more than 1 day of residual activity.

Rice Stink Bug Field Test

Objective:

To determine residual activity in the field of Karate Z against RSB; also, to see if a tank mix of Karate Z and Quadris improves milling quality

Conclusions:

This experiment was conducted on a ratoon field of Saber and treatments were applied aerially (three replications, plot size = 1.63 acres) approximately during milk stage of development. Karate Z gave between 4 and 8 days of residual control of RSB nymphs and 2 to 4 days residual control of RSB adults. The addition of Quadris improved residual control of both nymphs and adults. In fact, Karate Z + Quadris gave at least 8 days residual control of nymphs and adults. Quadris may possess some insecticidal activity or may enhance the activity of Karate Z. The tank mix of Karate Z and Quadris improved head rice yield by 6%, total milled rice by 4.5%, and decreased pecky rice by 1.8% and off color (other than peck) rice by 1.5%. For all milling quality categories, Karate Z + Quadris performed better than Karate Z alone. This suggests that Quadris may have reduced populations of microorganisms contributing to pecky and diseased rice.

Comparison of Rice Water Weevil Damage in a Stale and Conventional Seedbed

Presented by: Dr. M.O. Way and G.N. McCauley
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TAES/TCE, Texas A&M University
Agricultural Research and Extension Center, Beaumont

Introduction

The rice water weevil (RWW), *Lissorhoptus oryzophilus*, is a key pest of rice in the U.S., but little is known concerning population densities and rice response in a stale seedbed. The objective of these experiments was to compare RWW densities and damage in stale and conventionally tilled seedbeds.

Materials and Methods

Two identical experiments were conducted at the Texas A&M University Agricultural Research and Extension Center at Beaumont. The experiments were designed as a split plot with main plots stale seedbed (SSB) or conventionally tilled (CT) and sub plots untreated, treated with Icon 6.2FS at 0.0375 lb (AI)/acre or treated with Karate Z at 0.03 lb (AI)/acre. The Icon treatment was applied to seed; the Karate treatment was applied immediately before the flood. The treatments were replicated four times and plot size was 18 ft x 4 ft with each plot surrounded by a metal barrier. SSB plots were sprayed with Glyphomax at 2 qt/acre 14 days before planting. CT plots were disced and pipe-dragged before planting. Cocodrie was drill-planted at 90 lb/acre in all plots which were flushed 1 day after planting. From emergence of rice to application of the flood about 3 weeks after emergence, plots were flushed as needed. All plots received the same fertilizer (urea) program (170 lbs N/acre total: 1/3 at planting, 1/3 at flooding, 1/3 at panicle differentiation). All plots were sprayed about 1 week after rice emergence with Arrosolo 3-3E at 2 qt/acre, Basagran at 1.5 pt/acre and Facet 75DF at 0.5 lb/acre. About 3 and 5 weeks after flooding, five standard RWW cores were removed from each plot. Cores were washed and RWW larvae and pupae were counted. On August 2 (about 110 days after emergence), plots were harvested. Data were analyzed using ANOVA and LSD.

Results and Discussion

In both experiments, SSB plots significantly outyielded CT plots (Tables 1 and 2). Average yield difference in favor of SSB was 584 lb/acre. Rice in SSB plots emerged earlier and more uniformly than in CT plots. Results of similar experiments the past 2 years corroborate these data and observations. Perhaps uniform emergence is crucial to final yield. Densities of RWW were higher in CT than SSB plots in both experiments (Tables 1 and 2). Again, these results are similar to those from the past 2 years. Conceivably, the friable soil in the CT plots allows for better immature RWW survival and access to rice roots than in the SSB plots.

In both experiments, Icon and Karate treatments effectively controlled RWW, regardless of tillage (Tables 1 and 2). Averaging data from the two experiments, the Icon and Karate treatments outyielded the untreated 633 and 533 lb/acre, respectively (Tables 1 and 2).

Table 1. Results from Experiment 1.

Main plot effects:

Tillage	O ² no. immature RWW / 5 cores		O ³ yield
	3 waf ¹	5waf	(lb/acre)
SSB	10.3	10.4	6155 a
CT	13.3	13.2	5982 b

Sub plot effects:

Treatment	O ² no. immature RWW / 5 cores		O ² yield
	3 waf	5 waf	(lb/acre)
Untreated	32.1 a	29.9 a	5701 b
Icon 6.2FS	3.1 b	4.4 b	6286 a
Karate Z	0.1 b	1.1 b	6220 a

Interactions:

mp x sp	O no. immature RWW / 5 cores		O yield
	3 waf	5 waf	(lb/acre)
	ns	ns	ns

¹waf = weeks after flood²Means in a column followed by the same or no letter are not significantly different at the 5% level (ANOVA, LSD).³Means in this column are significantly different at the 10% level (ANOVA, LSD).

Table 2. Results from Experiment 2.

Main plot effects:

Tillage	O ² no. immature RWW / 5 cores		O ² yield
	3 waf ¹	5waf	(lb/acre)
SSB	15.7	10.0	6492 a
CT	20.1	11.4	5498 b

Sub plot effects:

Treatment	O ² no. immature RWW / 5 cores		O ² yield
	3 waf	5 waf	(lb/acre)
Untreated	50.0 a	26.9 a	5586 b
Icon 6.2FS	3.5 b	3.6 b	6267 a
Karate Z	0.1 b	1.6 b	6132 ab

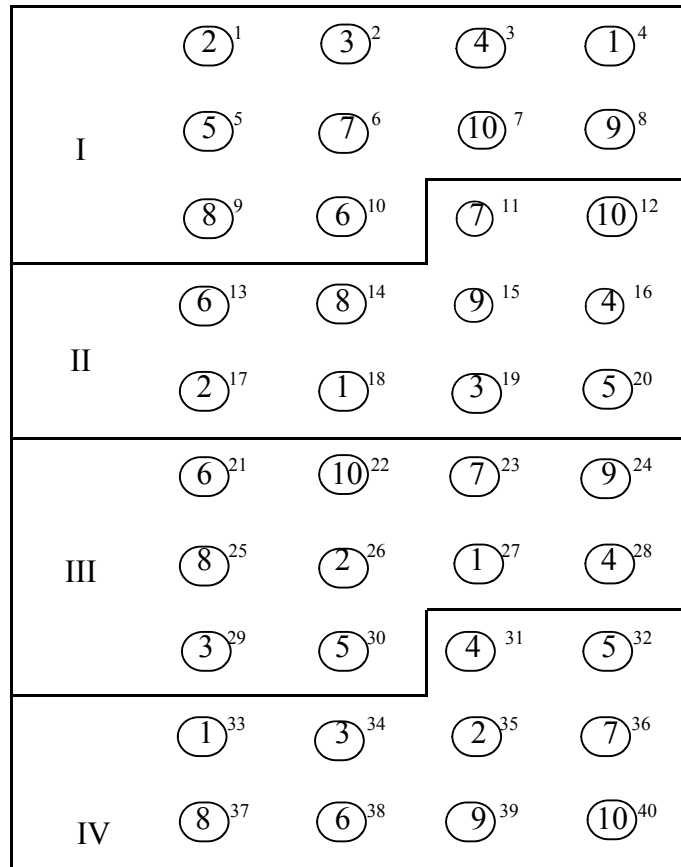
Interactions:

mp x sp	O no. immature RWW / 5 cores		O yield
	3 waf	5 waf	(lb/acre)
	ns	sig	ns

¹waf = weeks after flood²Means in a column followed by the same or no letter are not significantly different at the 5% level (ANOVA, LSD).

Preflood N vs RWW
 Block 4S
 Beaumont, TX
 2002

N²



plot size = 18 ft x 4 ft (each plot surrounded by a metal barrier)
 (20 ft x 4 ft planted area)

Trt. #	Description ¹	Timing
1	<u>T</u> reated, 0 pref N	0 lb N pref ² (tot. N = 102.0 lb/acre)
2	0.5 x pref N	34.0 lb N/acre @ pref (tot. N = 136.0 lb/acre)
3	1.0 x pref N	68.0 lb N/acre @ pref (tot. N = 170.0 lb/acre)
4	1.5 x pref N	102.0 lb N/acre @ pref (tot. N = 204.0 lb/acre)
5	2.0 x pref N	136.0 lb N/acre @ pref (tot. N = 238.0 lb/acre)
6	<u>U</u> ntreated, 0 pref N	0 lb N pref (tot. N = 102.0 lb/acre)
7	0.5 x pref N	34.0 lb N/acre @ pref (tot. N = 136.0 lb/acre)
8	1.0 x pref N	68.0 lb N/acre @ pref (tot. N = 170.0 lb/acre)
9	1.5 x pref N	102.0 lb N/acre @ pref (tot. N = 204.0 lb/acre)
10	2.0 x pref N	136.0 lb N/acre @ pref (tot. N = 238.0 lb/acre)

¹Main plots = T or U for RWW
 Subplots = 0, 0.5, 1.0, 1.5 and 2.0 x pref N
²pref = preflood

Preflood N vs RWW
Block 4S
Beaumont, TX
2002

- 03/28/02 Planted test with Cocodrie @ 90 lbs/acre and erected barriers
Plot size = 4 ft x 18 ft, 7 rows, 7" row spacing
- 03/29/02 Applied urea at 34 lbs N/acre (20% of 170) on all plots and flushed
- 04/12/02 Emerged
- 04/16/02 Plant stand counts by H. Harper (3 - 3 ft counts)
- 04/19/02 Arrosolo 3-3E @ 2.0 qt/acre, Basagran @ 1.5 pt/acre, Facet 75DF @ 0.5 lb/acre and
Agridex @ 1.0 pt/acre
- 05/03/02 Applied Karate Z @ 0.03 lb (AI)/acre to treated plots
Applied preflood urea according to treatment plan
Permanent flood (on south end of some plots rice is stunted, possibly from Roundup)
- 05/24/02 1st RWW cores
- 05/31/02 Urea @ 68.0 lb N/acre (40% of 170) on all plots
- 06/05/02 2nd RWW cores
- 08/03/02 Drained
- 08/06/02 Harvested main crop
- 08/12/02 Applied 100 lb N/acre and flooded
- 11/02/02 Harvested ratoon crop

Preflood N vs RWW
Beaumont, TX
2002

Main plots (<u>T</u> ¹ or <u>U</u> ²)	Sub plots (lb N/acre preflood) ³	No. plants / ft of row	RWW / 5 cores		Yield (lb/acre)		
			May 24	Jun 5	M ⁴	R ⁵	M+R
<u>T</u> ¹	0	10.9	0.5	0	4624	1433	6057
	34	10.6	0.5	1.3	7463	1648	9111
	68	9.4	0.3	0.8	8642	1712	10354
	102	8.9	0	0.3	9288	1710	10998
	136	11.5	0.8	1.3	9977	1794	11771
<u>U</u> ²	0	9.2	27.3	10.3	4246	1112	5358
	34	9.5	48.0	29.0	6622	1261	7883
	68	10.8	40.0	31.8	7963	1680	9643
	102	9.8	38.3	30.0	8858	1689	10547
	136	11.4	35.0	32.3	9566	1614	11180

¹T = treated for RWW with Karate Z at 0.03 lb (AI)/acre immediately before flood

²U = untreated

³Nitrogen in the form of urea; all plots received the same amount of urea applied at planting and at panicle differentiation (only preflood N was varied)

⁴M = main crop

⁵R = ratoon crop; after main crop harvest, all plots received 100 lb N/acre and flooded

Preflood N vs RWW
Beaumont, TX
2002

Main plot effects:

<u>T</u> ¹ or <u>U</u> ²	No. plants / ft of row	RWW / 5 cores ³		Yield (lb/acre) ³		
		May 24	Jun 5	M	R	M+R
T	10.3	0.4 b	0.7 b	7999 a	1671 a	9871 a
U	<u>10.1</u>	37.7 a	26.7 a	7451 b	1471 b	8922 b
NS						

Sub plot effects:

Preflood N (lb/acre)	No. plants ft of row	RWW / 5 cores ³		Yield (lb/acre) ³		
		May 24	Jun 5	M	R	M+R
0	10.1	13.9	5.1 b	4435 e	1249 b	5684 e
34	10.1	24.3	15.1 a	7042 d	1454 b	8496 d
68	10.1	20.1	16.3 a	8302 c	1696 a	9998 c
102	9.4	19.1	15.1 a	9073 b	1699 a	10772 b
136	<u>11.5</u>	<u>17.9</u>	16.8 a	9771 a	1704 a	11475 a
NS		NS				

¹T = treated

²U = untreated

³Means in a column followed by the same or no letter are not significantly different at the 5% level (ANOVA, LSD).

Interactions:

mp x sp	No. plants / ft of row	RWW / 5 cores		Yield (lb/acre)		
		May 24	Jun 5	M	R	M+R
	ns	ns	sig	ns	ns	ns

PLANTING DATE STUDY
 March 8 Planting
 Block 2N
 Beaumont, Texas
 2002

¶ North

I	II	III	IV
6	5	4	2
5	2	6	1
4	1	3	4
3	6	1	3
2	4	5	6
1	3	2	5

Plot size = 4 ft x 18 ft surrounded by metal barrier
 Cocodrie drill-seeded at 90 lb/acre

Trt. #	Treatment	Rate	Timing
1	Untreated	-	-
2	Icon 6.2FS	0.0375 lb (AI)/acre	st ¹
3	Karate Z	0.03 lb (AI)/acre	bf ²
4	Fury	0.04 lb (AI)/acre	bf
5	Fury	0.04 lb (AI)/acre	daf ³
6	Dimilin 2L	0.1875 lb (AI)/acre	daf

¹st = seed treatment

²bf = immediately before flood

³daf = days after flood

PLANTING DATE STUDY

March 8 Planting

Block 2N

Beaumont, Texas

2002

FIRST PLANTING DATE

- 03/08/02 Planted Cocodrie (untreated seed from Weatherton) @ 90 lb/acre
Plot size: 4 ft x 18 ft, 7 rows, 7 in. row spacing
Treatment 2 treated with Icon 6.2FS @ 0.0375 lb (AI)/acre (0.303 g/400 g seed)
Erected barriers, applied 34 lb N/acre (20% of 170), and flushed
- 03/15/02 Flushed plot area (soil drying out)
- 03/20/02 Emergence notes: some rice emerging in all plots, no pattern observed (see notes)
- 03/24/02 Emergence
- 03/27/02 All plots uniformly emerged (Mo)
- 04/05/02 Applied Arrosolo 3-3E @ 2 qt/acre, Basagran @ 1.5 pt/acre, Facet 75DF @ 0.5 lb/acre and Agridex @ 1 pt/acre, final spray volume @ 12.9 gal/acre
- 04/05/02 Plant stands recorded by D. Beach (3- 3 ft counts per plot)
- 04/15/02 Plant characteristics recorded by D. Beach and H. Harper (5 plants/plot)
- 04/15/02 Applied urea @ 68 lbs N/acre prior to permanent flood (40% of 170)
Applied Treatments 3 and 4 (Karate and Fury before pf)
Permanent flood
- 04/18/02 Treatments 5 and 6 (Fury and Dimilin 3 days after pf)
- 04/22/02 Adult RWW feeding scars recorded on three youngest leaves of 5 plants/plot by M. Way and J. Johnston
- 05/06/02 1st RWW cores (plants frozen for later plant characteristics)
- 05/08/02 Plots @ green ring, applied urea @ 68.0 lb N/acre (40% of 170), rice starting to run out of nitrogen
- 05/17/02 2nd cores
- 05/28/02 Applied urea @ 30 lb N/acre
- 07/05/02 Drained
- 07/26/02 Harvested main crop, raked excess straw from plots, applied urea at 100 lb N/acre, and flooded
- 09/20/02 Drained
- 10/02/02 Harvested ratoon crop

Planting Date Study
March 8 Planting
Beaumont, TX 2002

Treatment/ formulation	Rate [lb (AI)/acre]	Timing	O ⁴ no. immature RWW / 5 cores		O ⁴ yield (lb/acre) @ 12% moisture			
			May 6	May 16	Main crop	Ratoon crop	M + R	
Untreated	-	-	41.0 a	44.0 a	7750 c	1711	9461 b	
Icon 6.2FS	0.0375	ST ¹	2.0 bc	3.0 c	9626 a	2057	11683 a	
Karate Z	0.03	BF ²	0.5 c	2.5 c	8676 b	1994	10670 a	
Fury	0.04	BF	5.3 b	19.3 b	8926 ab	1937	10863 a	
Fury	0.04	3 DAF ³	0.5 c	2.0 c	9002 ab	2013	11015 a	
Dimilin 2L	0.188	3 DAF	0.3 c	5.0 c	9296 ab	<u>2032</u>	11328 a	
							NS	

¹ST = seed treatment

²BF = immediately before flood

³DAF = days after flood

⁴Means in a column followed by the same letter are not significantly different at the 5% level (ANOVA, DMRT).

PLANTING DATE STUDY
 April 16 Planting
 Block 3N
 Beaumont, TX
 2002

¶ North

I	II	III	IV
6	5	4	2
5	2	6	1
4	1	3	4
3	6	1	3
2	4	5	6
1	3	2	5

Plot size = 4 ft x 18 ft surrounded by metal barrier
 Cocodrie drill-seeded at 90 lb/acre

Trt. #	Treatment	Rate	Timing
1	Untreated	-	-
2	Icon 6.2FS	0.0375 lb (AI)/acre	st ¹
3	Karate Z	0.03 lb (AI)/acre	bf ²
4	Fury	0.04 lb (AI)/acre	bf
5	Fury	0.04 lb (AI)/acre	daf ³
6	Dimilin 2L	0.1875 lb (AI)/acre	daf

¹st = seed treatment

²bf = immediately before flood

³daf = days after flood

PLANTING DATE STUDY

April 16 Planting

Block 3N

Beaumont, TX

2002

04/11/02 Treated Cocodrie (for treatment 2) with Icon 6.2FS @ 0.0375 lb (AI)/acre
(0.227 g Icon /300 grams seed)

04/16/02 Planted

04/17/02 Erected barriers, applied urea @ 56.7 lbs N/acre (1/3 of 170), and flushed

04/25/02 Emerged

05/01/02 Applied Arrosolo 3-3E @ 2.0 qt/acre, Basagran @ 1.5 pt/acre, Facet 75DF @ 0.5
lb/acre and Agridex @ 1.0 pt/acre

05/15/02 Stand counts (3 - 3 ft counts) and also plant characteristics

05/16/02 Treatments 3 and 4
Applied urea @ 56.7 lb N/acre (1/3 of 170)
Permanent flood

05/19/02 Treatments 5 and 6

05/24/02 Adult RWW feeding scar counts (# on 3 youngest leaves of main culm, 5
plants/plot)

05/30/02 Applied urea @ 56.7 lb N/acre (1/3 of 170)

06/07/02 1st cores

06/21/02 2nd cores

07/25/02 Drained

08/31/02 Harvested main crop

09/03/02 Applied 100 lb N/acre (urea), flooded for ratoon crop

11/02/02 Harvested ratoon crop

Planting Date Study
April 16 Planting
Beaumont, TX. 2002

Treatment/ formulation	Rate [lb (AI)/acre]	Timing	O ⁴ no. immature RWW / 5 cores		O ⁴ yield (lb/acre) @ 12% moisture			
			Jun 7	Jun 21	Main crop	Ratoon crop	M + R	
Untreated	-	-	N/A ⁵	15.0 ab	6926 c	1817	8743	
Icon 6.2FS	0.0375	ST ¹	N/A	2.8 c	8128 a	1878	10006	
Karate Z	0.03	BF ²	N/A	7.3 bc	7409 abc	1702	9111	
Fury	0.04	BF	N/A	17.8 a	7389 abc	1820	9209	
Fury	0.04	3 DAF ³	N/A	16.8 ab	7000 bc	1840	8840	
Dimilin 2L	0.188	3 DAF	N/A	10.0 abc	7804 ab	<u>2009</u>	9813	
							NS	

¹ST = seed treatment

²BF = immediately before flood

³DAF = days after flood

⁴Means in a column followed by the same letter are not significantly different at the 5% level (ANOVA, DMRT).

⁵N/A = crew failed to collect cores

PLANTING DATE STUDY
 May 25 Planting
 Block 6S
 Beaumont, Texas
 2002

¶ North

I	II	III	IV
6	5	4	2
5	2	6	1
4	1	3	4
3	6	1	3
2	4	5	6
1	3	2	5

Plot size = 4 ft x 18 ft surrounded by metal barrier
 Cocodrie drill-seeded at 90 lb/acre

Trt. #	Treatment	Rate	Timing
1	Untreated	-	-
2	Icon 6.2FS	0.0375 lb (AI)/acre	st ¹
3	Karate Z	0.03 lb (AI)/acre	bf ²
4	Fury	0.04 lb (AI)/acre	bf
5	Fury	0.04 lb (AI)/acre	daf ³
6	Dimilin 2L	0.1875 lb (AI)/acre	daf

¹st = seed treatment

²bf = immediately before flood

³daf = days after flood

Planting Date Study
May 25 Planting
Block 6S
Beaumont, TX
2002

05/25/02 Seed treated with Icon 6.2FS @ 0.0375 lb (AI)/acre for Treatment 2
Cocodrie drill-planted @ 90 lb/acre
Urea @ 136 lb N/acre (2/3 of 170) and flushed

06/06/02 Emerged

06/15/02 Arrosolo 3-3E @ 2.0 qt/acre, Basagran @ 1.5 pt/acre, Facet 75DF @ 0.5 lb/acre
and Agri-Dex @ 1.0 pt/acre; final spray volume @ 12.9 gpa

06/21/02 Flushed and drained

06/24/02 Plant stand counts (3 - 3 ft counts/plot)

07/01/02 Treatments 3 and 4, plant characteristics (5 plants - height, No. tillers, No. leaves)
Permanent flood

07/04/02 Treatments 5 and 6

07/22/02 1st cores

07/29/02 2nd cores

09/23/02 Harvested

Planting Date Study
May 25 Planting
Beaumont, TX. 2002

Treatment/ formulation	Rate [lb (AI)/acre]	Timing	O ⁴ no. immature RWW / 5 cores		O ⁴ yield (lb/acre) @ 12% moisture
			Jul 23	Jul 29	Main crop
Untreated	-	-	22.8	18.3	4435
Icon 6.2FS	0.0375	ST ¹	5.5	3.3	5466
Karate Z	0.03	BF ²	3.0	1.5	5212
Fury	0.04	BF	13.5	7.3	5279
Fury	0.04	3 DAF ³	9.8	5.3	5279
Dimilin 2L	0.188	3 DAF	10.3	6.0	4958

¹ST = seed treatment

²BF = immediately before flood

³DAF = days after flood

⁴Means in a column followed by the same letter are not significantly different at the 5% level (ANOVA, DMRT).

Planting Date Study
Beaumont, TX. 2002

Treatment/ formulation	O ⁴ no. immature RWW / 5 cores (1 st sample date)			Main + ratoon yield (lb/acre)		
	Mar 8 ¹	Apr 16	May 25	Mar 8 ¹	Apr 16	May 25
Untreated	41.0 a	N/A	22.8	9461 b	8743	4435
Icon 6.2FS	2.0 bc	N/A	5.5	11683 a	10006	5466
Karate Z (BF) ²	0.5 c	N/A	3.0	10670 a	9111	5212
Fury (BF) ⁴	5.3 b	N/A	13.5	10863 a	9209	5279
Fury (AF) ³	0.5 c	N/A	9.8	11015 a	8840	5279
Dimilin 2L	0.3 c	N/A	10.3	11328 a	9813	4958

¹Means in these columns followed by the same letter are not significantly different at the 5% level (ANOVA, DMRT).

²BF = before flood

³AF = after flood

⁴N/A = crew failed to collect cores

Planting Date Study
Beaumont, TX. 2002

Treatment/formulation	Yield (lb/acre) difference (treated - untreated)		
	Mar 8	Apr 16	May 25
Icon 6.2FS	2222	1263	1031
Karate Z (BF)	1209	368	777
Fury (BF)	1209	466	844
Fury (AF)	1402	97	844
Dimilin 2L	<u>1867</u>	<u>1070</u>	<u>523</u>
O	1582	653	804

Treatment	Cost of control (\$/acre)	Net return ¹ (\$/acre)		
		Mar 8	Apr 6	May 25
Icon 6.2FS	15.30 ⁴	129.13	66.80	51.72
Karate Z (BF) ²	6.36 ⁵	72.23	17.56	44.15
Fury (BF)	4.93 ⁵	73.66	25.36	49.93
Fury (AF) ³	11.33 ^{5,6}	79.80	-5.03	43.53
Dimilin 2L	20.93 ^{5,6}	<u>100.43</u>	<u>48.62</u>	<u>13.07</u>
O		91.05	30.66	40.48

¹Based on \$6.50/cwt price of rice; does not include hauling and drying costs

²BF = before flood tank-mixed with preflood herbicides

³AF = after flood

⁴Based on \$17/cwt and 90 lb/acre seeding rate

⁵Based on M&M Air Service cost

⁶Based on \$6.40/acre flying cost (3 gpa)

Fury vs. RWW
Block 3S
Beaumont, Texas
2002

↔North

	I	II	III	IV
1	4	5	3	
2	7	2	7	
3	6	1	6	
4	2	3	5	
5	1	6	1	
6	5	7	4	
7	3	4	2	

Cocodrie drill-seeded @ 90 lbs/acre

Plot size = 4 ft x 18 ft

Seed is from Weatherton's untreated 2001 seed

Treatment No.	Description	Rate [lb (AI)/acre]	Timing
1	Untreated	-	-
2	Fury 1.5EC	0.04	PPI
3	Fury 1.5EC	0.04	@ emergence
4	Fury 1.5EC	0.04	7 dae ¹
5	Fury 1.5EC	0.04	14 dae
6	Fury 1.5EC	0.04	21 dae
7	Fury 1.5EC	0.04	3 daf ²

¹dae = days after emergence

²daf = days after permanent flood

Fury vs RWW
Block 3S
Beaumont, TX
2002

04/16/02 Planted Cocodrie @ 90 lbs/acre
04/17/02 Erected barriers and applied urea @ 56.7 lbs N/acre (1/3 of 170)
Applied treatment 2 and lightly incorporated urea and Fury treatment
Flushed
04/25/02 Emerged
05/01/02 Arrosolo 3-3E @ 2.0 qt/acre, Basagran @ 1.5 pt/acre, Facet 75DF @ 0.5 lb/acre
and Agri-dex @ 1.0 pt/acre
05/02/02 Treatment 4 applied (7 dae)
05/09/02 Treatment 5 applied (14 dae)
05/16/02 Treatment 6
Urea @ 56.7 lb N/acre (1/3 of 170) and permanent flood
05/19/02 Treatment 7
06/06/02 1st cores
06/17/02 2nd cores
06/18/02 Applied urea @ 56.7 lb N/acre (1/3 of 170)
07/25/02 Drained
09/03/02 Harvested

Fury vs Rice Water Weevil (RWW)
Beaumont, TX
2002

Trt. #	Treatment	Rate [lb (AI)/acre]	Timing	O ⁶ no. immature RWW per 5 cores		O ⁶ yield (lb acre @ 12% moisture)
				Jun 6	Jun 16	
1	Untreated	-	-	22.5 a	19.5	7151 d
2	Fury 1.5EC	0.04	PPI ¹	13.5 ab	12.3	8002 bc
3	Fury 1.5EC	0.04	E ²	13.0 ab	17.8	8331 abc
4	Fury 1.5EC	0.04	7 DAE ³	13.3 ab	20.8	7826 cd
5	Fury 1.5EC	0.04	14 DAE	8.0 bc	13.0	8103 abc
6	Fury 1.5EC	0.04	BF ⁴	3.0 c	13.5	8775 a
7	Fury 1.5EC	0.04	3 DAF ⁵	3.5 c	<u>17.3</u>	8621 ab
NS						

¹PPI = preplant incorporated

²E = at emergence

³DAE = days after emergence

⁴BF = immediately before flood

⁵DAF = days after flood

⁶Means in a column followed by the same or no letter are not significantly different at 5% level (ANOVA and DMRT).

Insecticide Screening
Eagle Lake
2002

N8

IV	5 ³⁷	3 ³⁸	12 ³⁹	11 ⁴⁰	4 ⁴¹	9 ⁴²	7 ⁴³	8 ⁴⁴	2 ⁴⁵	6 ⁴⁶	1 ⁴⁷	10 ⁴⁸
III	6 ²⁵	12 ²⁶	1 ²⁷	8 ²⁸	11 ²⁹	2 ³⁰	10 ³¹	3 ³²	9 ³³	7 ³⁴	5 ³⁵	4 ³⁶
II	9 ¹³	7 ¹⁴	5 ¹⁵	3 ¹⁶	1 ¹⁷	12 ¹⁸	4 ¹⁹	6 ²⁰	11 ²¹	2 ²²	10 ²³	8 ²⁴
I	1 ¹	2 ²	3 ³	4 ⁴	5 ⁵	6 ⁶	7 ⁷	8 ⁸	9 ⁹	10 ¹⁰	11 ¹¹	12 ¹²

road

Headquarters

6

Plot size = 16' x 3.75' (with barriers around each plot)
Drill-planted untreated Cocodrie at 100 lb/acre

Trt. #	Description	Rate	
		[lb (AI)/acre]	Timing
1	Untreated	-	-
2	GF-317	0.003	BF ¹
3	GF-317	0.01	BF
4	GF-317	0.03	BF
5	GF-317	0.003	4 DAF ²
6	GF-317	0.01	4 DAF
7	GF-317	0.03	4 DAF
8	Fury	0.04	BF
9	Fury	0.04	4 DAF
10	Karate Z	0.03	BF
11	Karate Z	0.03	4 DAF
12	Dimilin 2L	0.1875	4 DAF

¹BF = immediately before flood

²DAF = days after flood

Insecticide Screening
Eagle Lake
2002
(cont.)

4/05/02	Drill-planted untreated Cocodrie @ about 100 lb/acre
4/15/02	Emergence
4/30/02	Installed barriers around all plots
5/10/02	Applied treatments 2, 3, 4, 8, 10; heavy RWW feeding scars observed; good stands; very light breeze/good conditions; permanent flood
5/14/02	Applied treatments 5, 6, 7, 9, 11, 12 - 4 days after flood; good conditions; very light breeze (intermittent from north)
6/03/02	1 st cores
6/10/02	2 nd cores
8/06/02	Harvested

Table 1. Insecticide screening for rice water weevil (RWW). Eagle Lake, TX. 2002.

Treatment	Rate [lb (AI)/acre]	Timing	O no. immature RWW/5 cores		Yield ¹ (lb/acre)
			June 3	June 10	
Untreated	-	-	39.0 a	20.8 a	7395 b
GF-317	0.003	BF ²	6.8 def	1.3 b	8313 a
GF-317	0.01	BF	0.5 g	0.8 b	8386 a
GF-317	0.03	BF	0 g	1.3 b	8427 a
GF-317	0.003	4 DAF ³	27.5 ab	1.5 b	8514 a
GF-317	0.01	4 DAF	17.8 bc	3.3 b	8503 a
GF-317	0.03	4 DAF	8.3 de	0.3 b	8541 a
Fury 1.5EC	0.04	BF	2.3 efg	2.0 b	8494 a
Fury 1.5EC	0.04	4 DAF	10.3 cd	2.5 b	8531 a
Karate Z	0.03	BF	2.3 fg	0.3 b	8500 a
Karate Z	0.03	4 DAF	11.0 cd	0.5 b	8511 a
Dimilin 2L	0.1875	4 DAF	26.5 ab	2.3 b	8718 a

¹Yield adjusted to 12% moisture

²BF = immediately before flood

³DAF = days after flood

F0570 vs. RWW
Block 9N
Beaumont, Texas
2002

North ⇐

I	II	III	IV
3 ¹	7 ²	9 ³	1 ⁴
6 ⁵	9 ⁶	5 ⁷	10 ⁸
1 ⁹	8 ¹⁰	4 ¹¹	7 ¹²
10 ¹³	3 ¹⁴	7 ¹⁵	2 ¹⁶
9 ¹⁷	4 ¹⁸	1 ¹⁹	3 ²⁰
4 ²¹	10 ²²	6 ²³	8 ²⁴
5 ²⁵	2 ²⁶	3 ²⁷	6 ²⁸
2 ²⁹	1 ³⁰	8 ³¹	5 ³²
7 ³³	6 ³⁴	2 ³⁵	9 ³⁶
8 ³⁷	5 ³⁸	10 ³⁹	4 ⁴⁰

Plot size = 18 ft x 4 ft (surrounded by metal barrier); 20 ft x 4 ft planted area
Cocodrie planted at 90 lb/acre

Treatment No.	Description	Rate [lb (AI)/acre]	Timing
1	Untreated	-	-
2	F0570 0.8 EC	0.018	3 DAF ¹
3	F0570 0.8 EC	0.022	3 DAF
4	Karate Z	0.03	3 DAF
5	Dimilin 2L	0.1875	3 DAF
6	Icon 6.2FS	0.0375	ST ²
7	F0570 0.8 EC	0.018	BF ³
8	F0570 0.8 EC	0.022	BF
9	Gaucha 480	2 fl oz/ cwt	ST
10	Gaucha 480	4 fl oz/cwt	ST

¹DAF = days after flood

²ST = seed treatment

³DBF = days before flood

F0570 vs. RWW
Block 9N
Beaumont, Texas
2002

04/27/02 Planted test
Urea applied @ 56.7 lb N/acre (1/3 of 170) and flushed
05/04/02 Emerged
05/10/02 Arroso 3-3E @ 2.0 qt/acre, Basagran @ 1.5 pt/acre, Facet 75DF @ 0.5 lb/acre
and Agri-Dex @ 1.0 pt/acre
05/24/02 Treatments 7 and 8
05/25/02 Urea @ 56.7 lb N/acre (1/3 of 170) and permanent flood
05/28/02 Treatments 2,3,4, and 5
06/10/02 Urea @ 56.7 lb N/acre (1/3 of 170)
06/20/02 1st cores
06/26/02 Urea @ 30 lb N/acre
06/28/02 2nd cores
08/08/02 Drained
09/03/02 Harvested

F0570 vs RWW
Beaumont, TX. 2002

Trt. #	Treatment	Rate [lb (AI)/acre]	Timing	O ⁴ no. immature RWW/5 cores		O ⁴ Yield
				Jun 20	Jun 28	(lb/acre @ 12% moisture)
1	Untreated	-	-	42.3 a	41.5 a	8242 e
2	F0570 0.8EC	0.018	3 DAF ¹	14.3 bc	23.3 b	9042 cd
3	F0570 0.8EC	0.022	3 DAF	10.8 bc	18.8 b	9446 abc
4	Karate Z	0.03	3 DAF	1.8 d	7.3 cd	9390 abc
5	Dimilin 2L	0.188	3 DAF	2.3 d	5.0 d	9651 ab
6	Icon 6.2FS	0.0375	ST ²	6.3 cd	5.5 d	9714 a
7	F0570 0.8EC	0.018	1 DBF ³	13.3 bc	28.0 ab	8877 d
8	F0570 0.8EC	0.022	1 DBF	21.0 b	22.8 b	9129 cd
9	Gaucho 480	2 fl oz/cwt	ST	19.5 b	21.0 b	9212 bcd
10	Gaucho 480	4 fl oz/cwt	ST	17.0 b	17.0 bc	9606 ab

¹DAF = days after flood

²ST = seed treatment

³DBF = days before flood

⁴Means in a column followed by the same letter are not significantly different at the 5% level (ANOVA and DMRT).

Stem Borer HPR
Ganado, TX
2002
Plot Plan

IV	Bo	Bo	Co	Co	XL7	XL7	Sa	Sa	XL8	XL8	Cy	Cy	Le	Le	Je	Je	CL	CL	Pr	Pr
	U	T	U	T	T	U	T	U	T	U	U	T	T	U	T	U	U	T	T	U
III	Je	Je	Cy	Cy	Bo	Bo	Le	Le	CL	CL	XL7	XL7	Sa	Sa	Pr	Pr	XL8	XL8	Co	Co
	U	T	T	U	U	T	U	T	U	T	U	T	T	U	T	U	U	T	U	T
II	XL7	XL7	Je	Je	Sa	Sa	Bo	Bo	XL8	XL8	Co	Co	CL	CL	Pr	Pr	Le	Le	Cy	Cy
	T	U	U	T	T	U	U	T	T	U	U	T	T	U	T	U	T	U	T	U
I	CL	CL	Pr	Pr	Co	Co	XL7	XL7	XL8	XL8	Je	Je	Le	Le	Bo	Bo	Cy	Cy	Sa	Sa
	T	U	U	T	T	U	T	U	T	U	U	T	U	T	T	U	U	T	T	U

T = treated for stem borers
U = untreated for stem borers

Plot size = 10 rows x 16 ft

Stem Borer Host Plant Resistance Study, Ganado, TX. 2002

Variety	T ¹ reated or U ² ntreated for stem borers	No. whiteheads ³		Yield (lb/acre)						
		M ⁴	R ⁵	M	T-U	R	T-U	M+R	T-U	
Priscilla	T	3.3	16.3	8779	2833	1901	453	10680	3286	
	U	109.0	33.0	5946		1448		7394		
Lemont	T	1.0	5.3	7452	1400	1861	397	9313	1797	
	U	74.8	13.0	6052		1464		7516		
Saber	T	3.5	20.3	7912	1105	1373	73	9285	1178	
	U	57.8	34.7	6807		1300		8107		
Cocodrie	T	1.3	18.3	9403	1102	1192	102	10595	1204	
	U	47.8	38.7	8301		1090		9391		
Jefferson	T	1.8	8.7	8598	1415	1508	131	10106	1546	
	U	39.3	14.0	7183		1377		8560		
CL121	T	2.0	17.7	8358	835	1024	149	9382	984	
	U	38.3	19.0	7523		875		8398		
Cypress	T	0.5	14.7	8429	708	1033	-188	9461	519	
	U	34.8	30.7	7721		1221		8942		
Bolivar	T	1.0	17.3	8017	1120	1521	-101	9538	1019	
	U	27.3	14.3	6897		1622		8519		
XL7	T	1.3	3.3	8552	915	2107	529	10659	1443	
	U	18.5	2.7	7637		1578		9216		
XL8	T	2.0	7.3	9754	1033	1713	113	11467	1146	
	U	17.0	7.7	8721		1600		10321		
				O = 1246			O = 166		O = 1412	

¹T = treated for stem borers with Karate Z @ 0.03 lb (AI)/acre at 14, 32 and 45 days after flood

²U = untreated for stem borers

³No. whiteheads in 4 rows x 16 ft

⁴M = main crop

⁵R = ratoon crop

Stem Borer Host Plant Resistance Study, Ganado, TX. 2002

Main plot effects:

Variety	No. whiteheads		Yield (lb/acre)		
	M	R	M	R	M+R
Priscilla	56.2 a	24.7 ab	7362 d	1674 ab	9036 cd
Lemont	37.9 b	9.2 de	6752 e	1662 ab	8414 e
Saber	30.7 b	27.5 a	7359 d	1336 cd	8696 de
Cocodrie	24.6 bc	28.5 a	8852 a	1141 de	9293 b
Jefferson	20.6 bc	11.3 cde	7890 bc	1443 bc	9333 c
CL121	20.2 cd	18.3 bc	7941 b	949 e	8890 cde
Cypress	17.7 cd	22.7 ab	8075 b	1127 de	9201 cd
Bolivar	14.2 cd	15.8 bcd	7457 cd	1572 abc	9028 cd
XL7	9.9 d	3.0 e	8095 b	1843 a	9937 b
XL8	9.5 d	7.5 de	9237 a	1657 ab	10894 a

Sub plot effects:

T or U	No. whiteheads		Yield (lb/acre)		
	M	R	M	R	M+R
T	1.8 b	12.9 b	8524 a	1508 a	10033 a
U	46.5 a	20.8 a	7269 b	1352 b	8621 b

Interactions:

T or U	No. whiteheads		Yield (lb/acre)		
	M	R	M	R	M+R
mp x sp	sig (P=0.0001)	ns (P = 0.1178)	sig (P = 0.0022)	ns (P = 0.2467)	sig (P = 0.0029)

Monitoring the Spread of the Mexican Rice Borer (MRB)

- ^ Two MRB pheromone traps were placed in each county of the TRB
- ^ County extension agents, farmers, consultants and Experiment Station personnel monitored the traps weekly from early spring to the end of November
- ^ All collections have not been counted but we do know that Galveston County can be added to the counties where MRB occur. Thus, all TRB counties west and south of Harris harbor MRB

Stem Borer Insecticide Screening - M.O. Way
 Ganado, TX 2002
 Plot Plan

-all plots planted with Cocodrie; plots with (I) planted with Icon 6.2FS-treated seed

-plot size 16' x 3.75' (no ratoon)

-29 treatments x 4 reps

IV	8	19	10	15	5	25	14	9	24	1	28	20	11	6	23	16	26	3	12	2	22	18	29	7	27	13	21	17	4
		(I)		(I)	(I)		(I)		(I)					(I)		(I)				(I)		(I)						(I)	
III	27	6	20	15	24	29	2	7	26	11	3	14	21	17	9	12	19	25	16	8	1	23	4	13	28	5	18	22	10
		(I)		(I)	(I)		(I)					(I)		(I)			(I)		(I)							(I)	(I)		
II	12	23	2	22	25	1	26	5	10	15	29	17	6	21	9	7	11	28	16	27	8	19	20	14	13	24	4	3	18
			(I)					(I)		(I)		(I)	(I)						(I)			(I)		(I)		(I)			(I)
I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
		(I)			(I)	(I)								(I)	(I)	(I)	(I)	(I)	(I)					(I)					

Stem Borer Insecticide Screening
Ganado, TX
2002

- 04/03/02 Planted test, plot size = 6 rows, 16 ft x 3.75 ft, 7.5 in. row spacing
Variety = Cocodrie @ 100 lb/ac seeding rate
38 lb N preplant fertilizer applied
- 04/04/02 Sprayed test with Command
- 04/05/02 Flushed
- 04/15/02 Emergence
- 05/10/02 Collected plants for 100 culm inspection
- 05/23/02 80N pre-flood fertilizer applied
- 05/24/02 Permanent flood
- 05/30/02 Marvin Lesikar checked 100 culms and found no signs of stem borer damage
- 06/07/02 Treatments 3, 5, 7, 8, 12, 14, 18, 22, 24, 26, 28 applied @ 38.4 gpa
Rice not quite at PD
Added Latron CS-7 @ 2.0 pt/100 gal spray to treatments 3, 5, 7
Collected plants from buffer rows for 100 culm inspection and 8, 10-sweep samples (found no MRB moths)
- 06/12/02 50N fertilizer (ammonium sulfate) applied at PD
- 06/14/02 Collected plants for 100 culm inspection
- 06/20/02 Treatments, 4, 6, 9, 13, 15, 19, 20, 21, 23, 24, 25, 27, 29 applied @ 38.4 gpa
Added Latron CS-7 @ 1.0 pt/100 gal spray to treatments 4, 6, 25
Rice at 2 in. panicle to boot (average is 4 in. panicle)
Collected plants for 100 culm inspection and 8, 10 sweep samples (no MRB moths)
Collected 5 cores from each plot of treatments 1 and 2 to assess RWW activity
- 06/25/02 Treatments 10, 12, 16, 18, 24 applied @ 38.4 gpa (rice is at boot on average)
Collected plants for 100 culm inspection and 8, 10 sweep samples (no MRB moths)
- 07/04/02 Treatments 11, 13, 17, 19, 24 applied @ 38.4 gpa (rice is heading)
Collected plants for 100 culm inspection and 8, 10 sweep samples (no MRB moths)
- 07/12/02 Collected plants for 100 culm inspection
- 07/22/02 Collected plants for 100 culm inspection
8, 10 sweep samples (no MRB moths found)
Counted number of whiteheads in middle 4 rows of each plot
Counted number of panicles in 3, 1 ft samples per plot
- 08/08/02 Harvested (4 middle rows of each plots x 16 ft long)
- 08/10/02 Harvested (4 middle rows of each plots x 16 ft long)

Table 1. Evaluation of selected insecticides for stem borer control. Ganado, TX. 2002.

Trt.#	Treatment	Rate [lb (AI)/acre]	Timing	Mean	
				No. whiteheads in middle 4 rows of a plot ¹²	Yield (lb/acre at 12% moisture) ¹³
1	Untreated	-	-	28.0 abc	7514 e
2	Icon ¹	0.0375	ST ⁷	21.8 bcde	8709 bcd
3	Dim ²	0.125	14 DAF ⁸	33.5 ab	7693 de
4	Dim	0.125	2" P ⁹	23.3 bcde	8774 abcd
5	Icon + Dim	0.0375 + 0.125	ST + 14 DAF	19.5 cdef	8772 abcd
6	Icon + Dim	0.0375 + 0.125	ST + 2" P	27.8 abc	8534 bcde
7	Noval ³	0.058	14 DAF	38.0 a	8024 cde
8	Kar ⁴	0.03	14 DAF	19.3 bcdef	8877 abc
9	Kar	0.03	2" P	12.8 fghi	8463 bcde
10	Kar	0.03	B ¹⁰	7.0 hijkl	9033 abc
11	Kar	0.03	H ¹¹	18.0 cdef	8794 abcd
12	Kar	0.03 + 0.03	14 DAF + B	4.8 ijklm	8685 bcd
13	Kar	0.03 + 0.03	2" P + H	2.0 klm	9171 ab
14	Icon + Kar	0.0375 + 0.03	ST + 14 DAF	13.5 defgh	9881 a
15	Icon + Kar	0.0375 + 0.03	ST + 2" P	3.5 ijklm	9059 abc
16	Icon + Kar	0.0375 + 0.03	ST + B	3.3 jklm	8211 bcde
17	Icon + Kar	0.0375 + 0.03	ST + H	7.8 hij	8513 bcde
18	Icon + Kar	0.0375 + 0.03 + 0.03	ST + 14 DAF + B	3.5 ijklm	8284 bcde
19	Icon + Kar	0.0375 + 0.03 + 0.03	ST + 2" P + H	2.0 lm	8626 bcde
20	Kar + Quad ⁵	0.03 + 0.195	2" P	8.3 hijk	8846 abc
21	Quad	0.195	2" P	35.3 ab	8123 bcde
22	Fury	0.04	14 DAF	13.5 efgh	8413 bcde
23	Fury	0.04	2" P	9.5 ghij	8291 bcde
24	Icon + Kar	0.0375 + 0.03 + 0.03 + 0.03 + 0.03	ST + 14 DAF + 2" P + B + H	1.5 m	9205 ab
25	Noval	0.058	2" P	25.5 abcd	8192 bcde
26	GF-317	0.01	14 DAF	24.3 abcd	8728 bcd
27	GF-317	0.01	2" P	13.8 defgh	8523 bcde
28	Confirm ⁶	0.125	14 DAF	28.0 abc	8413 bcde
29	Confirm	0.125	2" P	17.8 cdefg	8612 bcde

¹Icon = Icon 6.2FS²Dim = Dimilin 2L³Noval = Novaluron 0.83EC⁴Kar = Karate Z⁵Quad = Quadris⁶Confirm = Confirm 2F⁷ST = seed treatment⁸14DAF = 14 days after flood⁹2"P = 2 inch panicle¹⁰B = boot¹¹H = heading¹²Means in this column followed by the same letter are not significantly different at 5% level (ANOVA and DMRT using $\sqrt{x+0.5}$ transformation).¹³Means in this column followed by the same letter are not significantly different at the 13% level (ANOVA, DMRT).

Rice Stink Bug Lab Test

Table 1. Evaluation of selected insecticides for direct contact activity against rice stink bug (RSB), *Oebalus pugnax*. Beaumont, TX. 2002.

Treatment	Rate [lb (AI)/acre]	Mean ¹ % adult RSB mortality - hours after treatment ²	
		24	48
Fury 1.5EC	0.04	100 a	100 a
Karate Z	0.03	100 a	100 a
F0570 0.8EC	0.017	87.5 b	95.0 a
F0570 0.8EC	0.022	92.5 b	100 a
GF-317	0.01	100 a	100 a
GF-317	0.03	100 a	100 a
Untreated	-	5.0 c	12.5 b

¹Means in a column followed by the same letter are not significantly different at 5% level; data transformed using arcsine; (ANOVA, DMRT).

²10 adult RSB per experimental unit; RSBs sprayed, placed on untreated rice panicles and mortality recorded 24 and 48 hours after spraying

Rice Stink Bug Lab Test

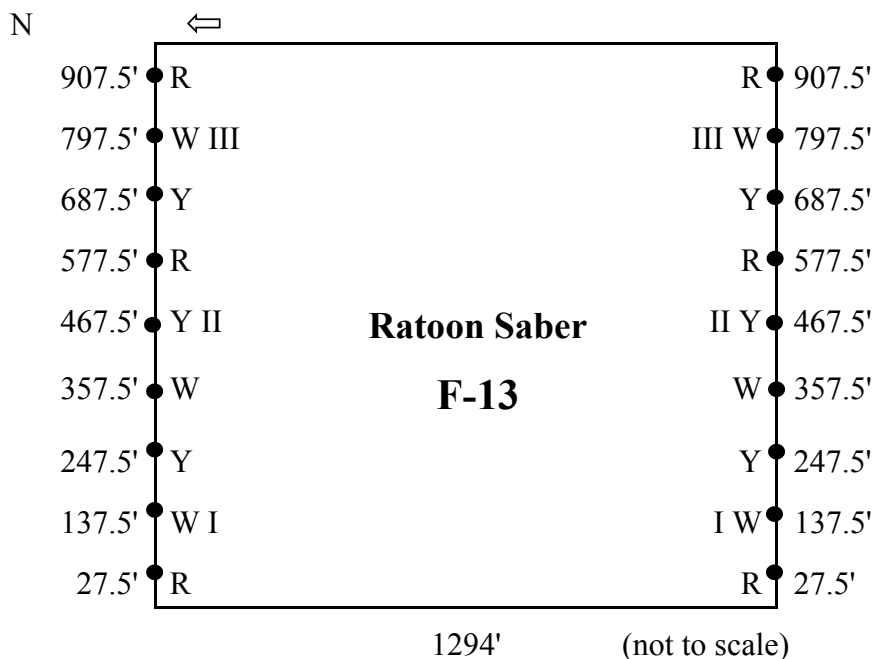
Table 2. Evaluation of residual activity of selected insecticides against rice stink bug (RSB), *Oebalus pugnax*. Beaumont, TX. 2002.

Treatment	Rate [lb (AI)/acre]	Mean ¹ % adult RSB mortality - 1 DAT ²	
		24 hour exposure to panicles	48 hour exposure to panicles
Fury 1.5EC	0.04	0	0
Karate Z	0.03	7.5	10.3
F0570 0.8EC	0.017	5.0	5.0
F0570 0.8EC	0.022	7.5	7.5
GF-317	0.01	10.0	12.5
GF-317	0.03	12.5	20.3
Untreated	-	<u>0</u>	<u>17.5</u>
		NS	NS

¹Means in a column followed by the same letter are not significantly different at 5% level; data transformed using arcsine; (ANOVA, DMRT).

²Plots treated Aug 8; 4 panicles per plot removed 24 hours after treatment and 10 adult RSB placed on panicles; each plot = a single replication of a treatment; experimental design = RCB with 4 replications

Rice Stink Bug Field Test
Beaumont, TX
2002



1 swath = 1294' x 55' = 1.634 acres; 3 swaths = 4.902 acres
each treated swath separated by untreated swath; 1 buffer swath between plots

Trt. #	Color Code	Treatments	Rate [lb (AI)/acre]
1	Red	Karate Z	0.03
2	White	Karate Z + Quadris	0.03 + 0.15 (9.2 oz prod/acre)
3	Yellow	Sevin XLR Plus	1.0
4	-	untreated	-

9/24/02 Pretreatment samples (2, 20 sweep samples/plot)
9/30/02 Treatments applied by M&M (5 gpa); calm conditions; most rice was in the milk stage
10/02/02 2 DAT samples
10/04/02 4 DAT samples
10/08/02 8 DAT samples (rice = milk-dough)
11/02/02 Combine harvested each strip

Rice Stink Bug Field Test

Table 1. Evaluation of aerially applied insecticides for rice stink bug (RSB), *Oebalus pugnax*, control. Beaumont, TX. 2002.

Treatment	Rate [lb (AI)/acre]	Mean ¹ no. RSB nymphs per 40 sweeps			
		Pretreatment	2 DAT ²	4 DAT	8 DAT
Karate Z	0.03	14.7	2.3 b	4.0 b	12.0 ab
Karate Z + Quadris	0.03 + 0.15	14.3	2.7 b	1.0 b	6.0 b
Sevin XLR Plus	1.0	13.3	1.7 b	2.7 b	6.7 b
Untreated	-	10.3	14.3 a	25.0 a	22.0 a

¹Means in a column followed by the same or no letter are not significantly different at the 5% level (ANOVA, DMRT).

²DAT = days after treatment

Table 2. Evaluation of aerially applied insecticides for rice stink bug (RSB), *Oebalus pugnax*, control. Beaumont, TX. 2002.

Treatment	Rate [lb (AI)/acre]	Mean ¹ no. RSB adults per 40 sweeps			
		Pretreatment	(2 DAT ²) ³	4 DAT	8 DAT
Karate Z	0.03	5.7	4.7 b	8.0	23.3 a
Karate Z + Quadris	0.03 + 0.15	6.7	4.0 b	3.3	8.0 b
Sevin XLR Plus	1.0	6.7	6.3 ab	3.7	17.0 a
Untreated	-	6.7	16.3 a	7.0	24.7 a

¹Means in a column followed by the same or no letter are not significantly different at the 5% level (ANOVA, DMRT).

²DAT = days after treatment

³Means in a column followed by the same or no letter are not significantly different at the 7% level (ANOVA, DMRT).

Rice Stink Bug Field Test

Treatment	Rate [lb (AI)/acre]	%			
		whole rice ¹	total ²	peck ¹	off-color ²
Karate Z	0.03	45.2	61.6 ab	1.7 bc	3.3 ab
Karate Z + Quadris	0.03 +0.15	46.9	63.1 a	1.4 c	2.2 b
Sevin XLR Plus	1.0	47.0	62.0 ab	1.8 b	2.3 b
Untreated	-	<u>40.9</u>	58.6 b	3.2 a	3.7 a
NS					

¹Means in these columns followed by the same or no letter are not significantly different at 5% level (ANOVA, DMRT).

²Means in these columns followed by the same or no letter are not significantly different at 10% level (ANOVA, DMRT).

Extension Activities:

I made 26 on-site visits to farmers fields during 2002 (see below a summary of these visits).

On-Site Visits to Solve Farmers' Problems

No.	Date	Farmer	Location	Problem
1	Nov 14, 2001	Steve Devillier	Winnie	insects in oats
2	Feb 6, 2002	Aubrey Jones	Winnie	mole crickets in turf
3	Apr 18, 2002	Gene Broussard	Nome	poor rice stand in stale seedbed
4	Apr 22, 2002	Stan Kotz	China	poor rice stand
5	Apr 22, 2002	Bill Dishman	China	poor rice stand
6	Apr 23, 2002	Farmer A	Garwood	chinch bugs on seedling rice
7	Apr 23, 2002	Farmer B	Garwood	chinch bugs on seedling rice
8	Apr 23, 2002	Farmer C	Garwood	chinch bugs on seedling rice
9	May 2, 2002	David LeCompte	Santa Fe	Mexican rice borer on rice
10	May 10, 2002	Alan Waldrup	Dayton	cutworms, negro bugs and chinch bugs on corn
11	May 10, 2002	Jimmy White	Nome	insects in sorghum
12	May, 23, 2002	Tommy Myzell	Anahuac	poor rice stand
13	May 24, 2002	Bobby Beavers	Nome	aphids and red rice in rice
14	May 25, 2002	Jacko Garrett	Danbury	rice root aphids
15	May 31, 2002	Jacko Garrett	Danbury	rice water weevil in rice
16	May 31, 2002	Randy Waligura	Garwood	chinch bugs on corn
17	Jun 9, 2002	Jimmy White	Nome	insects in sorghum
18	Jun 10, 2002	Bill Dishman	China	grasshoppers in rice
19	Jun 12, 2002	Mike Latta	Labelle	grasshoppers in rice
20	Jun 14, 2002	Jimmy White	Nome	sorghum midge
21	Jul 12, 2002	Jerry Batchelor	East Bernard	damage to rice panicles
22	Jul 31, 2002	David Wilde	Altair	stem borers in rice
23	Jul 31, 2002	Wayne Thompson	Angleton	channeled apple snail in ratoon rice
24	Aug 4, 2002	Steve Stelly	Winnie	borers in sugarcane
25	Aug 17, 2002	Troy Clubb	Beaumont	sorghum midge
26	Aug 20, 2002	Hal Koop	Edna	chinch bugs in ratoon rice

I gave 14 rice presentations at County Extension Agent meetings and field days in 2002 (see below a summary of these presentations):

Presentations at Extension Meetings:

Way, M.O. 2001. Rice, Soybean and Sugarcane Entomology Research Update. Rice Research and Extension Meeting. Beaumont, TX. Dec. 7.

Way, M.O. 2002. Rice Insect Control Update. Jefferson Co. Rice Symposium. Beaumont, TX. Jan. 15. (invited presentation).

Way, M.O. 2002. Rice Insect Control Update. Matagorda Co. Rice Clinic. Bay City, TX. Jan. 16. (invited presentation).

Way, M.O. 2002. Rice Insect Control Update. Wharton Co. Rice Clinic. El Campo, TX. Jan. 16. (invited presentation).

Way, M.O. 2002. Pesticide Safety. Brazoria Co. CEU Class. Angleton, TX. Jan. 17. (invited presentation).

Way, M.O. 2002. Rice Insect Research Update. Chambers Co. Rice Clinic. Anahuac, TX. Jan. 22. (invited presentation).

Way, M.O. 2002. Entomology Update. Jackson Co. Rice Clinic. Edna, TX. Feb. 5. (invited presentation).

Way, M.O. 2002. Entomology Update. Fort Bend and Harris Cos. Needville, TX. Feb. 5. (invited presentation).

Way, M.O. 2002. Entomology Update. Liberty Co. Rice Symposium. Liberty, TX. Feb. 7. (invited presentation).

Way, M.O. 2002. Grasshopper and Rice Stink Bug Problems in Rice. Fannett, TX. Jun. 26. (invited presentation).

Way, M.O. 2002. Entomology Update. Rice Educational Program Development Conference. Houston, TX. Sept. 10. (invited presentation).

Way, M.O. and T.E. Reagan. 2002. Ganado Site Visit: Mexican Rice Borer Sugarcane and Rice Research at Ganado. Ganado, TX. Sep. 20. (presentation).

Presentations at Field Days:

Way, M.O. 2002. Entomology Update. Eagle Lake Western Area Operations Field Day. Eagle Lake, TX. Jul. 2.

Way, M.O. 2002. Entomology Update. Beaumont Center Field Day. Beaumont, TX. Jul.11.

2003 Rice Production Guidelines:

Following Dr. Arlen Klosterboer's retirement, I coordinated the publication of the 2003 Rice Production Guidelines.

Regulatory Work:

My project helped gain rice labels for Fury and Birdshield in 2002.

Based on the results of my project experiments on stem borers, I requested Syngenta to add stem borers to the Karate Z rice label.