Stem Borer Research on Main and Ratoon Crop Rice  
Ganado, TX  
2007

Agronomic and Cultural Information

Planting: Drill-planted Cocodrie @ 80 lb/A and XL 723 @ 35 lb/A into Edna fine sandy loam soil on Apr 17  
Plot size = 9 rows, 7.5 in. row spacing, 16 ft long no metal barriers  
Randomized complete block with 4 treatments and 4 replications for each experiment (Cocodrie experiment and XL723 experiment)  
Emergence on Apr 30

Irrigation: Flushed blocks (temporary flood for 48 hours, then drain) on Apr 21  
Additional flushes until permanent flood (PF)  
PF of main crop on Jun 7  
PF of ratoon crop on Aug 5

Fertilization: 45-45-45 (lbs N-P-K/A) on May 9 after emergence  
70 lb N/A (urea) on Jun 5 before PF  
70 lb N/A (ammonium sulfate) on Jun 18 at panicle differentiation  
100 lb N/A (urea) on Aug 24 before ratoon PF  
Total main crop nitrogen = 185 lb/A; total ratoon crop nitrogen = 100 lb/A

Herbicide: Command 3ME applied @ 0.2 and Propanil @ 1 lb (AI)/A on May 4  
Arrosolo @ 3.0, Facet @ 0.35, Permit @ 0.06 lb (AI)/A on Jun 4

Treatments: All plots sprayed with Karate Z @ 0.03 lb (AI)/A on Jun 6 before PF for rice water weevil (RWW) control  
Treatments 1 and 2 were sprayed with Mustang Max @ 0.025 lb (AI)/A (Cocodrie @ ¼ inch panicle and XL 723 @ ½-3/4 inch panicle) on Jun 28.  
Treatments 1 and 2 were sprayed with Karate Z @ 0.03 (AI)/A (Cocodrie @ late heading and XL 723 @ heading) on Jul 17.  
Treatments 1 and 3 were sprayed with Karate Z @ 0.03 lb AI/A on Sep 11 (1 inch panicle to boot) and Sep 27(XL723 in late boot/milk; Cocodrie in mid boot/heading)  
All spray treatments were single application foliar sprays applied with a hand-held, CO₂-pressurized spray boom (3- 800067 nozzles, 50 mesh screens, 25 psi, 28 gpa application rate).

Sampling: No evidence of stem borers on Jun 28 (Cocodrie @ ¼ inch panicle and XL 723 @ ½-¾ inch panicle)  
Cocodrie @ mid-boot, XL 723 @ late boot on Jul 9  
Whiteheads (WH) in 4 middle rows were counted on Aug 3  
Panicles were counted on Aug 3 (3- 1ft panicle counts per plot)
20 WHs were collected from buffer plots and dissected for stem borers on Aug 3; only 4 sugarcane borers were found.

WHs in 4 middle rows per plot were counted on Oct 18

10 WHs were collected from buffer plots and dissected for stem borers on Oct 18; 2 sugarcane borers and 1 Mexican rice borer were found.

**Harvest:**

- Main crop harvested on Aug 20 [112 days after emergence (DAE)]
- Main crop harvested plot size = 7 rows, 7.5 inch row spacing, 16 ft long
- Ratoon crop harvested Nov 8 (95 DAE)
- Ratoon crop harvested plot size = 4 rows, 7.5 inch row spacing, 16 ft long

**Discussion**

Cocodrie Experiment: Results of both experiments discussed below were not affected by RWW because all plots were sprayed with Karate Z before PF. Two applications of pyrethroids on both main and ratoon crops were effective controlling stem borers (combination of sugarcane borer and Mexican rice borer) (Table 1). WH counts were very high in untreated main crop plots and relatively low in untreated ratoon crop plots. Controlling stem borers in the main crop produced a 973 lb/A yield advantage compared to not controlling stem borers in the main crop—Treatment 2 vs 4. Controlling stem borers in the ratoon crop produced a 125 lb/A yield advantage compared to not controlling stem borers in the ratoon crop—Treatment 1 vs 2, but the difference was not significant. Ratoon crop yields among treatments were not significantly different, but treating both main and ratoon crops produced a 673 lb/A yield advantage compared to not treating both main and ratoon crops. Data show controlling stem borers in both main and ratoon crops produces highest yields.

XL723 Experiment: Again, two applications of pyrethroids on both main and ratoon crops were effective controlling stem borers (combination of sugarcane borer and Mexican rice borer) (Table 2). WH counts were very high in untreated main crop plots and low in untreated ratoon crop plots. Controlling stem borers in the main crop produced a 1881 lb/A yield advantage compared to not controlling stem borers in the main crop—Treatment 2 vs 4. Controlling stem borers in the ratoon crop did not produce a positive yield response compared to not controlling stem borers in the ratoon crop which was due to low stem borer damage in the ratoon crop. However, controlling stem borers in both main and ratoon crops resulted in a 2100 lb/A yield advantage compared to not controlling stem borers in either crop. Data show XL723 benefited greatly from stem borer control.
Table 1. Stem borer research on main and ratoon crop rice. Cocodrie, Ganado, TX. 2007.

<table>
<thead>
<tr>
<th>Trt. #</th>
<th>Main Crop(^a)</th>
<th>Ratoon Crop(^a)</th>
<th>No. WHs(^b)/4 middle rows</th>
<th>Yield (lb/A)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Main</td>
<td>Ratoon</td>
<td>Main</td>
<td>Ratoon</td>
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<tr>
<td>1</td>
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<td>T</td>
<td>7 b</td>
<td>1 b</td>
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<tr>
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<tr>
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<td>T</td>
<td>55 a</td>
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<tr>
<td>4</td>
<td>U</td>
<td>U</td>
<td>61 a</td>
<td>16 a</td>
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</tbody>
</table>

\(^a\)T = treated for stem borers; U = untreated.

\(^b\)WHs = whiteheads.

Means in a column followed by the same or no letter are not significantly different (NS, \(P > 0.05\), ANOVA and LSD).

Table 2. Stem borer research on main and ratoon crop rice. XL723. Ganado, TX. 2007.

<table>
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<td>U</td>
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<td>4 a</td>
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