Dermacor X-100 Seed Treatments – Experiment I – Cocodrie
Beaumont, TX
2007

Agronomic and Cultural Information

Planting: Drill-planted Cocodrie @ 90 lb/A into League soil (pH 5.5, sand 3.2%, silt 32.4%, clay 64.4%, and organic matter 3.8 - 4.8%) on Apr 22
Plot size = 7 rows, 7 in. row spacing, 18 ft long with metal barriers, barriers pushed into mud after first flush
Experimental design: randomized complete block with 6 treatments and 4 replications
Emergence on May 1

Irrigation: Flushed blocks (temporary flood for 48 hours, then drain) on Apr 22
Note: Plots were flushed as needed from emergence to permanent flood (PF)
PF on May 25 [24 days after rice emergence (DAE)]

Fertilization: All fertilizer (urea) was distributed by hand
56.7 lb N/acre (1/3 of 170) on Apr 22 at planting
56.7 lb N/acre (1/3 of 170) on May 23, 2 days before PF
56.7 lb N/acre (1/3 of 170) on Jun 11 (17 days after PF)
40 lb N/acre on Jun 26
(Total season N/acre = 210 lb N/acre)

Herbicide: Stam 80EDF @ 2.0 lb, Basagran @ 0.75 lb, Facet 75DF @ 0.25 lb and Ordram 8E @ 2.0 lb (AI)/acre and Agri-Dex @ 1.0 pt/acre with a 2-person, CO2-pressurized spray boom (13- 80015 nozzles, 50 mesh screens, spray swath 20 ft, 21 gpa final spray volume) on May 11 (10 DAE) for early season weed control

Treatments: All seed (treated and untreated) was provided by DuPont; Karate Z treatment was applied 5 days after PF on May 30 using a hand-held, CO2-pressurized spray boom (3-800067 nozzles, 50 mesh screens, 4 ft spray swath, 24 gpa)

Sampling: Stand counts (no. of rice plants in 2, 3 ft row samples) were taken in each plot on May 8 (7 DAE)
Rice water weevil (RWW) cores (5 cores per plot, each core 4 in. diameter, 4 in. deep containing at least one rice plant) collected on Jun 14 (20 days after PF) and Jun 26 (32 days after PF); cores were later washed through 40-mesh screen buckets and immature RWW counted.
Plots inspected for South American rice miner (SARM) damage on Jun 22 (28 days after PF); no. of SARM damaged leaves/plot was recorded
Plots inspected for stem borer (sugarcane borer and Mexican rice borer) damage on Aug 1; no. of whiteheads (WHs) in the middle 4 rows of each plot was recorded
Prior to analysis of RWW cores, SARM damaged leaves and WH counts, data were transformed using $\sqrt{x + 0.5}$
Harvest:  Harvested plots with small plot combine on Aug 28 (120 DAE)
Size harvested plot = 7 rows, 7 in. row spacing, 18 ft. long; yields converted to lb/A
and adjusted to 12% moisture
Note:  All data analyzed using ANOVA and LSD

Discussion

No delayed rice emergence or phytotoxicity was observed in any of the seed treatments. Also, rice plant stands were unaffected by any of the seed treatments (Table 1). Although SARM damage was slight, significantly fewer SARM damaged leaves were observed in the Dermacor X-100 and Karate Z treatments. SARM damage inspections were conducted on 22 Jun – 61 days after planting. All Dermacor X-100 seed treatment rates gave excellent control of RWW on both sampling dates in spite of high RWW populations in the untreated. Stem borer damage, reflected in WHs, was minimal, so no conclusions can be drawn from these data. Yields were reported only from replications I-III (replication IV was not reported) because of urea drift from aerial applications on a Foundation Seed rice field adjacent to the experiment. Yields were abnormally high because of the strong possibility that some urea drift also impacted replications I-III. Although yields among treatments were not significant, Dermacor X-100 seed treatments outyielded the untreated by an average of 360 lb/A. Urea drift probably partially masked treatment yield effects. Dermacor X-100 seed treatment appears to be very effective at controlling RWW and potentially controlling other rice insect pests.
Table 1. Rice water weevil (RWW), South American rice miner (SARM) and stem borer control. Cocodrie, Beaumont, TX. 2007.

<table>
<thead>
<tr>
<th>Trt. #</th>
<th>Description</th>
<th>Rate mg (Al)/seed / lb (Al)/A&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Timing&lt;sup&gt;b&lt;/sup&gt;</th>
<th>No. plants/ft of row&lt;sup&gt;c&lt;/sup&gt;</th>
<th>No. SARM damaged leaves</th>
<th>No. immature RWW/5 cores</th>
<th>No. WHs&lt;sup&gt;d&lt;/sup&gt;</th>
<th>Yield&lt;sup&gt;e&lt;/sup&gt; lb/A</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dermacor X-100</td>
<td>0.0125 / 0.047</td>
<td>ST</td>
<td>19</td>
<td>1 b</td>
<td>2 c</td>
<td>1 b</td>
<td>10349</td>
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<tr>
<td>2</td>
<td>Dermacor X-100</td>
<td>0.025 / 0.093</td>
<td>ST</td>
<td>17</td>
<td>0 b</td>
<td>1 c</td>
<td>1 b</td>
<td>9956</td>
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<tr>
<td>3</td>
<td>Dermacor X-100</td>
<td>0.05 / 0.186</td>
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<td>19</td>
<td>0 b</td>
<td>1 c</td>
<td>0 b</td>
<td>10168</td>
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<td>Dermacor X-100</td>
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<td>19</td>
<td>1 b</td>
<td>0 c</td>
<td>0 b</td>
<td>10331</td>
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<td>5</td>
<td>Karate Z</td>
<td>0.04 lb (Al)/A</td>
<td>5 DAF</td>
<td>16</td>
<td>1 b</td>
<td>7 b</td>
<td>1 b</td>
<td>10215</td>
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<tr>
<td>6</td>
<td>Untreated</td>
<td>---</td>
<td>---</td>
<td>16</td>
<td>3 a</td>
<td>53 a</td>
<td>12 a</td>
<td>9841</td>
</tr>
</tbody>
</table>

<sup>a</sup>lb (Al)/A based on 18,800 Cocodrie seeds/lb and 90 lb/A seeding rate.
<sup>b</sup>ST = seed treatment; DAF = days after flood.
<sup>c</sup>Based on no. of rice plants in 2, 3 ft samples/plot.
<sup>d</sup>Based on no. whiteheads (WHs) in middle 4 rows/plot.
<sup>e</sup>Based on reps I-III; rep IV data deleted due to drift of urea from adjacent Foundation Seed field. Means in a column followed by the same or no letter are not significantly different (NS, P > 0.05, ANOVA and LSD).