Valent U.S.A. Corporation  
Seed Treatments for Rice Water Weevil Control  
Beaumont, TX  
2006

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 Mar 27  
Experimental design: randomized complete block with 4 replications  
Plot size = 7 rows, 7 in. row spacing, 18 ft long with metal barriers  
Emergence on Apr 5

Irrigation:  
Flushed blocks (temporary flood for 48 hours, then drain) on Mar 27  
Note: Plots were flushed as needed from emergence to permanent flood  
**Permanent flood on Apr 27**

Fertilization:  
All fertilizer (urea) was distributed by hand.  
42.5 lb N/acre (25% of 170) on Mar 27 at planting  
59.5 lb N/acre (35% of 170) on Apr 27 at permanent flood  
68 lb N/acre (40% of 170) on May 11 at panicle differentiation  
40 lb N/acre on Jun 2 at late boot/heading  
*(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 @ 2.0 lb (AI)/acre and Agri-Dex @ 1.0 pt/acre with a 2-person hand-held spray boom (13- 80015 nozzles, 50 mesh screens, 16 gpa final spray volume) on Apr 11 for early season weed control

Treatments:  
Seed treatments were applied on Mar 8  
**Karate Z applied before flood (BF)** with a hand-held CO₂-pressurized spray boom on Apr 27 (3-800067 nozzles, 50 mesh screens, 20 psi, 24 gpa)

Sampling:  
**Stand counts** (4- 3 ft counts in rows 2, 3, 5, and 6 of each plot) on Apr 7  
No phytotoxicity or vigor differences noted on Apr 10 and May 4  
**Adult rice water weevil (RWW) feeding scars** recorded from 5 plants per plot on May 4 (7 days after permanent flood)  
**RWW cores** (5 cores per plot, each core 4 in. diameter, 4 in. deep containing at least one rice plant) were collected on May 17 and May 31, later washed through 40-mesh buckets and immature RWW counted.  
*Note: Prior to analysis RWW core data transformed using* $\sqrt{x + 0.5}$  
No differences in root damage were noted between treatments and/or rates in 2nd core plants, however, more damage was noted in untreated than treated

Harvest:  
**Harvested plots on Jul 31**  
Size harvested plot = 5 middle rows, 7 in. row spacing, 18 ft long  
Yields converted to lb/acre and adjusted to 12% moisture
**Discussion**

Plots for all treatments emerged to uniform good stands (test mean of 17 plants per foot of row). There were no statistical differences in plant stands among treatments. Adult rice water weevil (RWW) feeding scars were recorded 7 days after permanent flood. Scars were significantly highest in untreated plots (Table 1) which indicates seed treatments may affect adult RWW feeding activity. Immature RWW counts from core samples in untreated plots on both sampling dates were well above threshold levels (about 15 per 5 cores). Karate Z (foliar spray) and the high and low rates of both V-10170 and V-10194 seed treatments provided excellent control of RWW larvae (Table 1). This control persisted through the second sampling date on May 31.

Both the high and low rates of V-10170 and V-10194 provided significant yield responses when compared to plots untreated for RWW. Seed treatments averaged 7970 lb/acre. Plots treated with Karate Z yielded 7593 lb/acre. On average, seed treatments resulted in a 1610 lb/acre yield advantage over untreated seed. With the elimination of Icon 6.2FS as a viable rice seed treatment for RWW, it is extremely important to continue research to identify and approve suitable alternatives.

**Table 1. Valent seed treatments for rice water weevil (RWW) control. Beaumont, TX. 2006.**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate [g (AI)/hkg]</th>
<th>Timing</th>
<th>RWW feeding scars/plant</th>
<th>No. immature RWW/5 cores</th>
<th>Yield (lb/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated</td>
<td>---</td>
<td>---</td>
<td>18.7 a</td>
<td>90 a</td>
<td>6356 b</td>
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<tr>
<td>Karate Z</td>
<td>0.03 lb (Al)/acre</td>
<td>BF&lt;sup&gt;a&lt;/sup&gt;</td>
<td>6.0 bc</td>
<td>1 b</td>
<td>7593 a</td>
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<tr>
<td>V-10170</td>
<td>250</td>
<td>ST&lt;sup&gt;b&lt;/sup&gt;</td>
<td>4.2 bc</td>
<td>0 b</td>
<td>8112 a</td>
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<td>ST</td>
<td>2.9 c</td>
<td>0 b</td>
<td>7946 a</td>
</tr>
<tr>
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<td>250</td>
<td>ST</td>
<td>8.1 b</td>
<td>1 b</td>
<td>7800 a</td>
</tr>
<tr>
<td>V-10194</td>
<td>500</td>
<td>ST</td>
<td>2.9 c</td>
<td>0 b</td>
<td>8025 a</td>
</tr>
</tbody>
</table>

<sup>a</sup> BF = immediately before flood  
<sup>b</sup> ST = seed treatment  
Means in a column followed by the same letter are not significantly different at the 5% level (ANOVA, LSD).