Efficacy of Dinotefuran for Rice Water Weevil Control
Beaumont, TX
2005

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 15
Plot size = 7 rows, 7 in. row spacing, 18 ft long with metal barriers surrounding plots
Experimental design: randomized complete block with 4 replications
Emergence on Apr 26

Irrigation: Flushed blocks (temporary flood for 48 hours, then drain) on Apr 15
Note: Plots were flushed as needed from emergence to permanent flood.
Permanent flood on May 19

Fertilization: All fertilizer (urea) was distributed by hand.
56.7 lb N/acre (⅓ of 170) on Apr 15 at planting
56.7 lb N/acre (⅓ of 170) on May 19 at permanent flood
56.7 lb N/acre (⅓ of 170) on Jun 2 at panicle differentiation
40 lb N/acre on Jun 21 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, 21 gpa final spray volume) on May 11 for early season weed control

Treatments: Treatment 1 (granular) applied by hand before flood (BF) on May 19
Treatment 7 (50WDG) applied BF with a hand-held CO2-pressurized spray boom on May 19 (3-800067 nozzles, 50 mesh screens, 25 psi, 26 gpa)
Treatments 1, 2, 4, 6 and 7 (granulars) applied by hand 7 days after flood (DAF) on May 26
Treatments 3 and 5 (granulars) applied by hand 17 DAF on Jun 5
Note: Granular product dispersed very well and sank to bottom immediately.

Sampling: Rice water weevil (RWW) cores (5 cores per plot, each core 4 in. diameter, 4 in. deep, containing at least one rice plant) were collected on Jun 9 and 20, washed through 40-mesh screen buckets and immature RWW counted.
Note: Prior to analysis RWW core data transformed using $\sqrt{x + 0.5}$

Harvest: Harvested plots on Aug 14
Size harvested plot = 7 rows, 7 in. row spacing, 18 ft long
Yields converted to lb/acre and adjusted to 12% moisture
Note: All data analyzed using ANOVA and LSD

Discussion

Populations of immature RWW were high in the untreated on both sample dates (the economic injury level is about 15 per 5 cores) (Table 1). V-10112 (Trt. 1) gave excellent control of RWW on both sample dates when applied at the low rate immediately before flood (BF) and 7 days after flood (DAF). V-10112 applied once at the highest rate 7 DAF (Trt. 6) performed equally well. Also, V-10170 applied BF and 7 DAF (Trt. 7) gave excellent control. The latest application (17 DAF) of V-10112 (Trts. 3 and 5) gave partial control of RWW and exhibited a rate response. V-10112 applied 7 DAF at the low rate gave similar control compared to the mid rate Trts. 2 and 4). Data suggest early applications (7 DAF and earlier) are most effective. Future studies should evaluate before flood, 3, 7, 10 and 14 days after flood applications of the low and mid rates of V-10112. Yields from treated plots were not significantly greater than the untreated but the average yield advantage of all treatments compared to the untreated was 330 lb/acre.

Table 1. Efficacy of dinofuran for rice water weevil (RWW) control. Beaumont, TX. 2005

<table>
<thead>
<tr>
<th>Trt. no.</th>
<th>Treatment</th>
<th>Rate [g (AI)/acre]</th>
<th>Timing</th>
<th>No. immature RWW/5 cores</th>
<th>Yield (lb/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>V-10112 1.0GR</td>
<td>120 + 120</td>
<td>BF&lt;sup&gt;a&lt;/sup&gt; + 7 DAF&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0 c</td>
<td>4 c</td>
</tr>
<tr>
<td>2</td>
<td>V-10112 1.0GR</td>
<td>120</td>
<td>7 DAF</td>
<td>9 d</td>
<td>17 ab</td>
</tr>
<tr>
<td>3</td>
<td>V-10112 1.0GR</td>
<td>120</td>
<td>17 DAF</td>
<td>43 b</td>
<td>7 bc</td>
</tr>
<tr>
<td>4</td>
<td>V-10112 1.0GR</td>
<td>240</td>
<td>7 DAF</td>
<td>4 de</td>
<td>5 bc</td>
</tr>
<tr>
<td>5</td>
<td>V-10112 1.0GR</td>
<td>240</td>
<td>17 DAF</td>
<td>26 c</td>
<td>1 c</td>
</tr>
<tr>
<td>6</td>
<td>V-10112 1.0GR</td>
<td>360</td>
<td>7 DAF</td>
<td>1 e</td>
<td>4 c</td>
</tr>
<tr>
<td>7</td>
<td>V-10170 50WDG + 0.5GR</td>
<td>20 + 100</td>
<td>BF + 7 DAF</td>
<td>1 e</td>
<td>4 c</td>
</tr>
<tr>
<td>8</td>
<td>Untreated</td>
<td>—</td>
<td>—</td>
<td>85 a</td>
<td>33 a</td>
</tr>
</tbody>
</table>

<sup>a</sup> BF = immediately before flood  
<sup>b</sup> DAF = days after flood  
Means in a column followed by the same or no letter are not significantly different (NS) at the 5% level (ANOVA, LSD).