Dupont and Gowan Granular and Foliar Treatments for Rice Water Weevil
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 May 19
Plot size = 7 rows, 7 in. row spacing, 18 ft long with metal barriers around plots
Emergence on May 28

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

Fertilization: All fertilizer (urea) was distributed by hand.
113.3 lb N/acre (2/3 of 170) on May 19 at planting
56.7 lb N/acre (⅙ of 170) on Jun 15 at permanent flood
56.7 lb N/acre (⅙ of 170) on Jun 29 at panicle differentiation
40 lb N/acre on Jul 25 at late boot/heading
(Total season N/acre = 266.7 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 Jun 14 for early season weed control

Treatments: Treatment 3 (granular) applied before flood (BF) by hand on Jun 15
Treatment 2 (foliar spray) applied with a hand-held CO2-pressurized spray boom (3-800067 nozzles, 50 mesh screens, 21 gpa) on Jun 15
Treatments 5 and 6 (granulars) applied by hand 1 day after flood (DAF) on Jun 16
Treatments 4 and 6 (foliar sprays) applied 1 DAF as above foliar spray on Jun 16
Treatments 7 and 8 (granulars) applied 12 DAF by hand on Jun 27
Note: Granular products 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 Jul 8 and 19, 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 Sep 8
Size harvested plot = 7 rows, 7 in. row spacing, 18 ft long
Yields converted to lb/acre adjusted to 12% moisture

Note: All data analyzed using ANOVA and LSD
**Dupont and Gowan Granular and Foliar Treatments for Rice Water Weevil. Bmt., TX. 2005**

**Discussion**

The Neem treatments (Aza-Direct and Neemazal) did not provide adequate control of RWW (Table 1). However, Aza-Direct applied before flood (BF) or 1 day after flood (DAF) and Neemazal applied BF significantly reduced rice water weevil (RWW) populations compared to the untreated. Neemazal applied BF gave significantly better control than applied 1 DAF. Neemazal alone and the dual application (Aza-Direct and Neemazal) applied 1 DAF did not significantly reduce RWW populations compared to the untreated. The second cores taken on Jul 19 showed some decline in RWW populations in all treatments including the untreated but were not significant. None of the Aza-Direct or Neemazal treatments significantly out-yielded the untreated.

The experimental granular treatments (low and high rates) applied 12 DAF significantly reduced RWW populations (Table 1). On the Jul 8 sample date (experimental treatments were sampled only once), the high rate gave significantly better control than the low rate. Compared to the untreated, the high rate gave 78% control. At 12 DAF, typically most RWW eggs have been laid and hatched. This implies that the experimental post flood treatments were targeting RWW larvae. The experimental treatments did not out-yield the untreated which is surprising because visual observations mid-season revealed much more RWW damage to rice root masses in the untreated compared to the experimental treatments. However, RWW populations were well above the economic injury level in the experimental treatments on the first sample date. Possibly, surviving high densities of RWW in the experimental treatments were sufficient to produce yields comparable to the untreated. Oddly, the low rate of the experimental treatment yielded significantly less than the untreated although control was about 40%. Random experimental error may be responsible. Further research is needed to answer questions concerning the activity of the experimental compound relative to RWW.

**Table 1. Dupont and Gowan treatments for rice water weevil (RWW) control. Bmt., TX. 2005**

<table>
<thead>
<tr>
<th>Trt. no.</th>
<th>Treatment</th>
<th>Rate</th>
<th>Timing</th>
<th>No. immature RWW/5 cores</th>
<th>Yield (lb/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Untreated</td>
<td>---</td>
<td>---</td>
<td>138 d</td>
<td>8148 ab</td>
</tr>
<tr>
<td>2</td>
<td>Aza-Direct</td>
<td>26 oz/A</td>
<td>BF(^a)</td>
<td>90 b</td>
<td>8049 b</td>
</tr>
<tr>
<td>3</td>
<td>Neemazal</td>
<td>20 lb/A</td>
<td>BF</td>
<td>94 bc</td>
<td>8297 ab</td>
</tr>
<tr>
<td>4</td>
<td>Aza-Direct</td>
<td>26 oz/A</td>
<td>1 DAF(^b)</td>
<td>97 bc</td>
<td>8385 a</td>
</tr>
<tr>
<td>5</td>
<td>Neemazal</td>
<td>20 lb/A</td>
<td>1 DAF</td>
<td>136 d</td>
<td>8119 ab</td>
</tr>
<tr>
<td>6</td>
<td>Aza-Direct + Neemazal</td>
<td>26 oz/A + 20 lb/A</td>
<td>1 DAF</td>
<td>116 cd</td>
<td>8068 b</td>
</tr>
<tr>
<td>7</td>
<td>DPX-E2Y45</td>
<td>75 g (AI)/ha</td>
<td>12 DAF</td>
<td>81 b</td>
<td>7386 c</td>
</tr>
<tr>
<td>8</td>
<td>DPX-E2Y45</td>
<td>300 g (AI)/ha</td>
<td>12 DAF</td>
<td>31 a</td>
<td>8192 ab</td>
</tr>
</tbody>
</table>

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