Effect of Rate and Timing of Etofenprox on 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 22*
Plot size = 7 rows, 7 in. row spacing, 18 ft long with metal barriers around plots
Emergence on May 4

Irrigation:  
Flushed blocks (temporary flood for 48 hours, then drain) *on Apr 22*
*Note: Plots were flushed as needed from emergence to permanent flood*
Permanent flood *on May 25*

Fertilization:  
*All fertilizer (urea) was distributed by hand.*
56.7 lb N/acre (⅓ of 170) *on Apr 22 at planting*
56.7 lb N/acre (⅓ of 170) *on May 25 at permanent flood*
56.7 lb N/acre (⅓ of 170) *on Jun 10 at panicle differentiation*
40 lb N/acre *on Jun 29 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 (Al)/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 20*

Treatments:  
*See Table 1 for treatment descriptions and rates.*
Karate Z was applied immediately before flood (BF) *with a hand-held CO₂-pressurized spray boom* (3-800067 nozzles, 50 mesh screens, 25 gpa) *on May 25*
MTI-500 granular (low, mid and high rate) was applied by hand 2 days after flood (DAF) *on May 27*
MTI-500 granular (low, mid and high rate) was applied by hand 7 DAF *on Jun 1*
*Note: Measured material for MTI-500 granular treatments was brought up to a total of 30 grams with Blank Formulation to aid in hand dispersal.*

Sampling:  
Adul%RWW feeding scars from 5 random plants per plot 9 DAF on Jun 3
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 16 and 27, 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 26*
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*
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Discussion

Regardless of rate, the earlier application of MTI-500 reduced the number of adult rice water weevil (RWW) feeding scars relative to the later application (Table 1). Probably, MTI-500 applied earlier killed more adult RWW before they fed. Likewise the earlier application of MTI-500 provided better control on the first sample date than the later application. All treatments provided equivalent control on the second sample date. Populations of immature RWW were very high in the untreated on both sample dates (the economic injury level is about 15 immatures/5 cores). All treatments resulted in positive yield responses compared to the untreated. The mid rate of MTI-500 applied early (2 days after flood) produced a 600 lb/acre yield advantage over the untreated. The project investigator suggests future tests evaluate MTI-500 applied before flood.

Table 1. Effect of rate and timing of etofenprox on rice water weevil (RWW) control. Beaumont, TX. 2005

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate [g (AI)/ha]</th>
<th>Timing</th>
<th>No. adult RWW feeding scars/plant</th>
<th>No. immature RWW/5 cores</th>
<th>Yield (lb/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jun 16</td>
<td>Jun 27</td>
<td></td>
</tr>
<tr>
<td>MTI-500</td>
<td>150</td>
<td>2 DAF$^a$</td>
<td>8 b</td>
<td>16 c</td>
<td>17 a</td>
</tr>
<tr>
<td>MTI-500</td>
<td>200</td>
<td>2 DAF</td>
<td>11 b</td>
<td>9 b</td>
<td>7 a</td>
</tr>
<tr>
<td>MTI-500</td>
<td>250</td>
<td>2 DAF</td>
<td>9 b</td>
<td>8 b</td>
<td>6 a</td>
</tr>
<tr>
<td>MTI-500</td>
<td>150</td>
<td>7 DAF</td>
<td>25 c</td>
<td>40 d</td>
<td>16 a</td>
</tr>
<tr>
<td>MTI-500</td>
<td>200</td>
<td>7 DAF</td>
<td>19 c</td>
<td>35 d</td>
<td>14 a</td>
</tr>
<tr>
<td>MTI-500</td>
<td>250</td>
<td>7 DAF</td>
<td>23 c</td>
<td>32 d</td>
<td>12 a</td>
</tr>
<tr>
<td>Karate Z</td>
<td>34 BF</td>
<td></td>
<td>2 a</td>
<td>2 a</td>
<td>6 a</td>
</tr>
<tr>
<td>Untreated</td>
<td>—</td>
<td>BF$^b$</td>
<td>29 c</td>
<td>88 e</td>
<td>50 b</td>
</tr>
</tbody>
</table>

$^a$ DAF = days after flood

$^b$ BF = immediately before flood

Means followed by the same letter are not significantly different at the 5% level (ANOVA, LSD).