V. RESPONSE OF COTTON TO IN-FURROW FUNGICIDE TREATMENTS (TAREC Research Farm, Hare Road)

A. PURPOSE: To assess the benefits of in-furrow fungicides for control of seedling diseases

B. EXPERIMENTAL DESIGN:
1. Four, randomized complete blocks
2. Split-plot design with in-furrow treatments in main plots
3. Subplots of two rows w/ and w/o in-furrow inoculum
4. Two, 30-ft rows per plot with 36 in. row spacing
5. Fifteen-ft alleyways between blocks

C. APPLICATION OF TREATMENTS: Liquid in-furrow fungicides (F) were mixed in water and applied at a volume of 5 gal/A through a microtube to the seed furrow at planting. Granular in-furrow fungicides were delivered by a Noble-box applicator to the seed furrow.

D. TREATMENT AND RATE/1000 ft of row):
1. Untreated check
2. Ridomil Gold PCGR 9.8 oz (in furrow)
3. Rovral CF 0.5 fl oz + Reason 0.5 fl oz (in furrow)
4. Rovral CF 0.5 fl oz + Ridomil Gold 0.15 fl oz (in furrow)
5. Terraclor Super X 18.8G 6.6 oz (in-furrow)
6. Quadris 2.08SC 0.6 fl oz (in-furrow)

E. INOCULUM (Sub-plots): Inoculum was prepared by Dr. Steve Rideout of Syngenta Crop Protection and applied to the open seed furrow at 0.5 ml/ft of row.
1. No inoculum
2. Inoculated (millet seed infested with *Rhizoctonia solani*)

F. ADDITIONAL INFORMATION:
1. Location: Tidewater Res. Farm, Hare Rd., Suffolk
3. Land preparation: Strip-tillage in wheat cover crop
4. Planting date and variety: 26 Apr 2004; ST 4892 BR (Lot # AM3G 4110; warm germ 90%, cool germ 84%)
5. Soil fertility report (Dec 2003):
   - pH: 5.9
   - Ca: 209 ppm
   - Mg: 19 ppm
   - P: 29 ppm
   - K: 34 ppm
   - Zn: 1.6 ppm
   - Mn: 1.7 ppm
   - Soil type: Kenansville loamy sand
6. Herbicide:
   - Pre-plant – Cotoran 1 qt + Prowl 1 pt/A (21 Apr)
   - Pre-emergence – Roundup Ultra Max 22 fl oz/A (27 Apr)
   - Post-emergence – Roundup Ultra Max 22 fl oz (13 May, 1 Jun)
     Cotton Pro 1 pt + Roundup Ultra Max 22 fl oz/A, directed (18 Jun)
7. Insecticide: Temik 15G 5 lb/A in furrow (26 Apr)
   Orthene 97S 6 oz/A (13 May, 1 Jun)
   Baythroid 4 fl oz/A (9 Aug)
8. Growth regulator: Pentia 10 fl oz/A (29 Jun, 13 Jul); 12 fl oz/A (9 Aug)
9. Defoliant/Boll opener: Finish 1 qt + Prep 8 fl oz + Dropp 0.1 lb/A (1 Oct)
     Nitrogen (32%) 30 lb/A (17 Jun, 2 Jul)
     Liquid boron 1 qt/A (17 Jun)
11. Harvest date: 3 Nov 2004

Table 19. Effect of in-furrow treatments on emergence of cotton.

<table>
<thead>
<tr>
<th>Treatment and in-furrow rate/1000 ft of row</th>
<th>Non-inoculated</th>
<th>Inoculated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated check.................................</td>
<td>1.9 a 1.8 a</td>
<td>0.5 d 0.0 c</td>
</tr>
<tr>
<td>Ridomil Gold PCGR 9.8 oz .....................</td>
<td>1.8 a 1.7 a</td>
<td>0.1 d 0.1 c</td>
</tr>
<tr>
<td>Rovral CF 0.5 fl oz + Reason 0.5 fl oz ..........</td>
<td>1.9 a 1.8 a</td>
<td>0.9 b 0.6 b</td>
</tr>
<tr>
<td>Rovral CF 0.5 fl oz + Ridomil Gold 0.15 fl oz ..........</td>
<td>1.6 a 1.6 a</td>
<td>0.7 c 0.4 b</td>
</tr>
<tr>
<td>Terraclor Super X 18.8G 6.6 oz ...........</td>
<td>2.0 a 1.9 a</td>
<td>0.1 d 0.1 c</td>
</tr>
<tr>
<td>Quadris 2.08SC 0.6 fl oz ..................</td>
<td>1.6 a 1.6 a</td>
<td>1.2 a 1.1 a</td>
</tr>
</tbody>
</table>

* Determined from counts of two, 30-ft rows per plot.
Mean followed by the same letter(s) are not significantly different at P=0.05 according to Waller-Duncan k-ratio t test.
Split-plot analysis indicated statistical significance for treatment, inoculant and a significant treatment by inoculant interaction.

Table 20. Effect of in-furrow treatments on growth of cotton.

<table>
<thead>
<tr>
<th>Treatment and in-furrow rate/1000 ft of row</th>
<th>Non-inoculated</th>
<th>Inoculated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated check.................................</td>
<td>36.6 a 26.0 c</td>
<td></td>
</tr>
<tr>
<td>Ridomil Gold PCGR 9.8 oz .....................</td>
<td>34.2 bc 29.4 b</td>
<td></td>
</tr>
<tr>
<td>Rovral CF 0.5 fl oz + Reason 0.5 fl oz ..........</td>
<td>32.8 cd 30.4 b</td>
<td></td>
</tr>
<tr>
<td>Rovral CF 0.5 fl oz + Ridomil Gold 0.15 fl oz ..........</td>
<td>32.6 d 29.1 b</td>
<td></td>
</tr>
<tr>
<td>Terraclor Super X 18.8G 6.6 oz ...........</td>
<td>36.9 a 29.0 b</td>
<td></td>
</tr>
<tr>
<td>Quadris 2.08SC 0.6 fl oz ..................</td>
<td>34.6 b 35.0 a</td>
<td></td>
</tr>
</tbody>
</table>

* Data are measurements of six plants per plot.
Mean followed by the same letter(s) are not significantly different at P=0.05 according to Waller-Duncan k-ratio t test.
Split-plot analysis indicated statistical significance for treatment, inoculant and a significant treatment by inoculant interaction.
### Table 21. Effect of in-furrow treatments on yield of cotton.

<table>
<thead>
<tr>
<th>Treatment and in-furrow rate/1000 ft of row</th>
<th>Yield (lb/A)*</th>
<th>Non-inoculated</th>
<th></th>
<th>Inoculated</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated check</td>
<td>4398 a</td>
<td>3.9 a</td>
<td>18 c</td>
<td>0.0 c</td>
<td>---</td>
</tr>
<tr>
<td>Ridomil Gold PCGR 9.8 oz</td>
<td>3503 a</td>
<td>3.1 a</td>
<td>384 c</td>
<td>0.3 c</td>
<td>---</td>
</tr>
<tr>
<td>Rovral CF 0.5 fl oz + Reason 0.5 fl oz</td>
<td>3467 a</td>
<td>3.1 a</td>
<td>1652 b</td>
<td>1.5 b</td>
<td>---</td>
</tr>
<tr>
<td>Rovral CF 0.5 fl oz + Ridomil Gold 0.15 fl oz</td>
<td>3388 a</td>
<td>3.0 a</td>
<td>1180 b</td>
<td>1.1 b</td>
<td>---</td>
</tr>
<tr>
<td>Terraclor Super X 18.8G 6.6 oz</td>
<td>4051 a</td>
<td>3.6 a</td>
<td>393 c</td>
<td>0.4 c</td>
<td>---</td>
</tr>
<tr>
<td>Quadris 2.08SC 0.6 fl oz</td>
<td>3273 a</td>
<td>2.9 a</td>
<td>2901 a</td>
<td>2.6 a</td>
<td>---</td>
</tr>
</tbody>
</table>

* Weight (lb/A) includes lint + seed; bales/A are weight of lint only. Lint was 43.0% of total weight and 480 lb/bale. Plots were harvested on 3 Nov 2004.

Means followed by the same letter(s) are not significantly different at P=0.05 according to Waller-Duncan k-ratio t test. Split-plot analysis indicated statistical significance for treatment, inoculant and a significant treatment by inoculant interaction.