VI. EFFECT OF RATE AND TIMING OF TOPSIN M ON HARDLOCK IN COTTON (TAREC Research Farm, Hare Road)

A. PURPOSE: To develop spray strategies for control of hardlock, and determine the benefit of disease control

B. EXPERIMENTAL DESIGN:
1. Five, randomized complete blocks
2. Four, 30-ft rows per plot with 36 in. row spacing
3. Two, center rows designated for treatments; outside border rows were untreated
4. Ten-ft alleyways between blocks

C. APPLICATION OF TREATMENTS: All treatments were over sprayed with insecticides during the bloom period to control stinkbugs and boll damage by insects in general. Fungicide sprays were applied with a CO₂, backpack sprayer delivering 13.9 gal/A with two, 8002 nozzles/row at 17 psi.

D. TREATMENT AND RATE/A: (1st bloom = 50% of plants have 1 open bloom – Jul 16)
1. Untreated check
2. Topsin M 0.5 lb/A (1st bloom + 2 wks + 2 wks)
3. Topsin M 1 lb/A (1st bloom + 2 wks + 2 wks)
4. Topsin M 0.5 lb/A (1st bloom + 2 wks)
5. Topsin M 1 lb/A (1st bloom + 2 wks)
6. Topsin M 0.5 lb/A (1st bloom)
7. Topsin M 1 lb/A (1st bloom)

E. ADDITIONAL INFORMATION:
1. Location: Tidewater Res. Farm, Hare Rd., Suffolk
3. Land preparation: Strip-tillage in wheat cover crop
4. Planting date and variety: 27 Apr 2004, DP 555 BG RR
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/A (13 May)
   Cotton Pro 1 pt + Roundup Ultra Max 22 fl oz, directed (18 Jun)
7. Insecticide: Temik 15G 5 lb/A in furrow (27 Apr)
   Orthene 97S 12 oz/A (13 May, 1 Jun, 29 Jun)
   Baythroid 4 fl oz/A (9 Aug)
8. Growth regulator: Pentia 10 oz/A (29 Jun); 6 oz/A (13 Jul); 12 oz/A (9 Aug)
9. Defoliant/Boll opener: Finish 1 qt + Dropp 0.1 lb + Prep 8 oz/A (7 Oct)
    Nitrogen (32%) 30 lb/A (17 Jun, 2 Jul)
    Liquid boron 1 qt/A (17 Jun)

11. Harvest date: 8 Nov 2004

Table 22. Number of flowers at the time of fungicide applications.

<table>
<thead>
<tr>
<th>Rep</th>
<th>Jul 16</th>
<th>Aug 10</th>
<th>Aug 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>57</td>
<td>99</td>
<td>34</td>
</tr>
<tr>
<td>II</td>
<td>24</td>
<td>84</td>
<td>23</td>
</tr>
<tr>
<td>III</td>
<td>52</td>
<td>110</td>
<td>35</td>
</tr>
<tr>
<td>IV</td>
<td>51</td>
<td>77</td>
<td>28</td>
</tr>
<tr>
<td>V</td>
<td>42</td>
<td>76</td>
<td>32</td>
</tr>
</tbody>
</table>

* Total number of flowers per one row of untreated check.

Table 23. Effect of fungicide applications on incidence of hard lock and yield of cotton.

<table>
<thead>
<tr>
<th>Treatment, rate/A and application date¹</th>
<th>Total bolls²</th>
<th>Total locks²</th>
<th>% hard lock²</th>
<th>Yield³ (lb/A)</th>
<th>Yield³ (bales/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated check</td>
<td>46 a</td>
<td>207 a</td>
<td>11.3 a</td>
<td>2347 b</td>
<td>2.21 b</td>
</tr>
<tr>
<td>Topsin M 0.5 lb/A (7/16, 8/9, 8/18).</td>
<td>60 a</td>
<td>271 a</td>
<td>11.2 a</td>
<td>2894 a</td>
<td>2.72 a</td>
</tr>
<tr>
<td>Topsin M 1 lb/A (7/16, 8/9, 8/18).....</td>
<td>61 a</td>
<td>274 a</td>
<td>11.9 a</td>
<td>2493 ab</td>
<td>2.34 ab</td>
</tr>
<tr>
<td>Topsin M 0.5 lb/A (7/16, 8/9).........</td>
<td>58 a</td>
<td>262 a</td>
<td>9.6 a</td>
<td>2551 ab</td>
<td>2.40 ab</td>
</tr>
<tr>
<td>Topsin M 1 lb/A (7/16, 8/9)............</td>
<td>51 a</td>
<td>231 a</td>
<td>13.2 a</td>
<td>2824 a</td>
<td>2.65 a</td>
</tr>
<tr>
<td>Topsin M 0.5 lb/A (7/16)...............</td>
<td>54 a</td>
<td>242 a</td>
<td>9.3 a</td>
<td>2524 ab</td>
<td>2.37 ab</td>
</tr>
<tr>
<td>Topsin M 1 lb/A (7/16)..................</td>
<td>59 a</td>
<td>264 a</td>
<td>11.2 a</td>
<td>2706 ab</td>
<td>2.54 ab</td>
</tr>
</tbody>
</table>

LSD...................................................... 19  87  6.6  433  0.41

¹ Treatments applied on 9 Aug were scheduled for 31 Jul, but were delayed due to rain.
² Counts are plants from 1 meter of each plot (ca. 7 plants) at harvest.
³ Weight (lb/A) includes lint + seed; bales/A are weight of lint only. Lint was 45.1% of total weight and 480 lb/bale. Plots were harvested on 8 Nov 2004.

Means followed by the same letter(s) are not significantly different (LSD, P=0.05).