COTTON: *Gossypium hirsutum* L. 'Stoneville BXN 47'

TRACER VERSUS ALTERNATIVE CHEMICALS FOR HELIOTHINE CONTROL ON COTTON, 2000

John D. Hopkins  
Arkansas Cooperative Extension Service  
Lonoke Agricultural Center  
P.O. Box 357  
Lonoke, AR 72086  
Phone: 501-676-3124  
Fax: 501-676-7847  
E-mail: jhopkins@uaex.edu

Donald R. Johnson and Gus M. Lorenz, III  
Arkansas Cooperative Extension Service  
P.O. Box 391  
Little Rock, AR 72203  
Phone: 501-671-2229  
Fax: 501-671-2303  
E-mail: djohnson@uaex.edu  
E-mail: glorenz@uaex.edu

Jack D. Reaper, III  
Arkansas Cooperative Extension Service  
Lonoke Agricultural Center  
P.O. Box 357  
Lonoke, AR 72086  
Phone: 501-676-3124  
Fax: 501-676-7847  
E-mail: jreaper@uaex.edu

Cotton bollworm: *Helicoverpa zea* Boddie  
Tobacco budworm: *Heliothis virescens* (F.)

This trial was conducted on the Bryant Farm in Jefferson County, AR, located within the boll weevil eradication zone and received programmed sprays of ULV malathion that virtually eliminated boll weevil and plant bug pressure. Treatments were evaluated in small plots (eight 38-inch rows by 50 ft) arranged in a RCBD with four replications. The cotton variety 'Stoneville BXN47' was planted on 3 May. Insecticide treatments were initiated based on state recommendations of one Heliothine-damaged square per row foot with eggs and small larvae present. Applications were made with a John Deere 6000 hi-cycle sprayer equipped with a compressed air delivery system. The boom was equipped with conejet TXVS 6 nozzles on a 19-inch spacing. Operating pressure was 45 psi with a final spray volume of 8.6 gpa. Treatments were applied as foliar sprays on 21 and 28 Jul and 4 Aug. Insect counts and damage ratings were made on 25 Jul (4 DAT#1), 1 Aug (4 DAT#2), and 8 Aug (4 DAT#4). Data were collected by examining 50 squares and 50 terminals selected at random from the center of each plot for the presence of live larvae and square damage. Seasonal averages for percent square damage and live larvae counts were calculated from the rating dates. The center two rows of each plot were machine harvested with a commercial two-row John Deere cotton picker on 19 Oct (169 DAP), and lint yields were determined based on a 36% gin turnout. Data were processed using Agriculture Research Manager (Gylling, version 6.0.1). Analysis of variance was
conducted, and DNMRT ($P = 0.05$) was used to separate means only when AOV Treatment P(F) was significant at the 5% level.

This test site was hampered by low Heliothine pest pressure (seasonal average of 6.0% Heliothine square damage and 1.5 live Heliothine larvae/50 squares and 50 terminals in the untreated check). Steward (0.11), Tracer (0.067), and Decis (0.01) were the only treatments that resulted in significantly lower seasonal square damage compared to the untreated check. Under light pest pressure, the new compounds, Denim and Intrepid, and the conventional pyrethroid, Karate, failed to significantly differ from the untreated check with respect to seasonal average Heliothine square damage. No differences were observed among treatments in this experiment for the seasonal average counts of live Heliothine larvae or yield. On a numerical basis only, Tracer (0.067) was the highest yielding treatment in the test.

**TABLE 1.**

<table>
<thead>
<tr>
<th>Treatment/formulation</th>
<th>Rate lb (Al)/acre</th>
<th>Seasonal average % Heliothine-damaged squares</th>
<th>Seasonal average No live Heliothine larvae/50 squares and 50 terminals</th>
<th>Lint yield (lb/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracer 4SC</td>
<td>0.067</td>
<td>4.0 b</td>
<td>0.9 a</td>
<td>1116.4 a</td>
</tr>
<tr>
<td>Steward 1.25SC</td>
<td>0.11</td>
<td>3.9 b</td>
<td>1.1 a</td>
<td>1052.9 a</td>
</tr>
<tr>
<td>Intrepid 2SC</td>
<td>0.15</td>
<td>5.8 a</td>
<td>1.1 a</td>
<td>1028.8 a</td>
</tr>
<tr>
<td>Denim 0.16EC</td>
<td>0.01</td>
<td>4.8 ab</td>
<td>1.3 a</td>
<td>1064.7 a</td>
</tr>
<tr>
<td>Karate Z 2.08CS</td>
<td>0.025</td>
<td>5.3 ab</td>
<td>1.3 a</td>
<td>1101.8 a</td>
</tr>
<tr>
<td>Decis 1.5EC</td>
<td>0.01</td>
<td>4.0 b</td>
<td>1.3 a</td>
<td>1095.0 a</td>
</tr>
<tr>
<td>Untreated check</td>
<td>6.0 a</td>
<td>1.5 a</td>
<td></td>
<td>1073.4 a</td>
</tr>
</tbody>
</table>

Means followed by the same letter do not significantly differ ($P = 0.05$, DNMRT).