COTTON: *Gossypium hirsutum* L. 'DPL 41'

- Tobacco thrips; *Frankliniella fusca* (Hinds)
- Flower thrips; *Frankliniella trifurca* (Fitch)
- Soybean thrips; *Sericostethis variabilis* (Beach)
- Cotton aphid; *Aphis gossypii* Glover

Gene Burris (266)
Northeast Research Station
Louisiana Agr. Ext. Station
L.S.U. Agricultural Center
St. Joseph, LA 71366

Kevin Ratchford
Macon Ridge Branch
Northeast Research Station
Louisiana Agr. Ext. Station
L.S.U. Agricultural Center
Winnsboro, LA 71295

J. B. Graves, A. M. Pavloff and B. R. Leonard
Department of Entomology
Louisiana Agr. Ext. Station
L.S.U. Agricultural Center
Baton Rouge, LA 70803

TEMIK 15G AND NEMACUR 15G IN-FURROW RATE TEST ON DELTA (COMMERCE SILT LOAM) SOIL, 1986: Temik 15G and Nemacur 15G were tested at 0.5, 0.75 and 1.0 lb Al/acre for control of thrips and aphids on seedling cotton. Orthene 80SP seed treatments (6.4 oz (Al/100 lb seed) with and without Terracor Super X (TSX) and blended Di-Syston + TSX were included for comparison. Test plots were replicated 4 times in a randomized complete block design, at the Northeast Research Station, St. Joseph, LA. Plot size was 4 rows (40 inch spacing) x 65 ft. Cotton was planted on 30 Apr and fertilized with 90 lb N/acre applied preplant. Test treatments were applied in-furrow at planting with a John Deere 7100 planter, equipped with granular application split boxes. Terracor Super X (Terracor 1.0 lb + Terrazole 0.25 lb (Al/acre) was applied with the Temik 15G and Nemacur 15G treatments, and one of the seed treatments, as a standard fungicide treatment for delta conditions. The Di-Syston treatment was a commercial blend with TSX. Major pest and/or secondary pest treatments were initiated in Jun and maintained on an 'as needed' basis through Aug. The effects of the test treatments on thrips and cotton aphids were measured by washing insects from 10 seedling cotton plants/plot onto 200 mesh screens, backwashing them onto lined filter paper (7 cm) and counting them with the aid of a binocular dissecting microscope. Leaf area measurements were made on 22 and 29 May with a Licor leaf area machine, measuring all leaves from 5 plants/plot that were removed from the field and immediately processed. Stand data were taken from the middle 2 rows of each plot in 20 ft flagged sections on 4 Jun. Plant height of 20 randomly selected plants within each plot was measured on 4 Jun. Yields were determined by sold picking the 4 row plots with a mechanical harvester on 20 Sep and 7 Oct.

All Temik rates (0.5, 0.75 and 1.0 lb (Al/acre)) provided significantly better thrips control than other treatments except for Di-Syston. Average numbers of immature or total thrips in the Nemacur treatments were not statistically different from that observed in the Orthene 80SP seed treatments. Nemacur 15G (0.75 and 1.0 lb (Al/acre)), Di-Syston and all rates of Temik provided better aphid suppression than the seed treatments or Nemacur 15G at 0.5 lb (Al/acre). Leaf area measurements taken on 22 May reflect a trend toward increased levels of phytotoxicity as the rate of Temik 15G increased. Similar results were obtained on 4 Jun with stand and plant height counts in the Temik treated plots. Nemacur 15G (0.5 and 0.75 lb (Al/acre)) treatment effects on leaf area measurements made on 22 May reflect the poor thrips control associated with these treatments. The greatest leaf area on 22 May was measured in the Di-Syston treated plots, but lack of residual effectiveness allowed insect foliage feeding damage by 29 May. Stand and plant height reductions caused by the 1.0 lb (Al/acre) Nemacur 15G and Temik 15G treatments resulted in reduced yield and delayed maturity. In comparison to the Temik 15G 0.5 lb (Al/acre) treatment, Nemacur 15G 0.5 lb (Al/acre) produced a slightly greater yield, despite significantly less thrips control and numerically less aphid control. However, slightly more seed cotton at first harvest was picked in the Temik (0.5 lb (Al/acre)) plots. Although the Di-Syston treated plots had more insects than any of the Temik treated plots, greater yield at first harvest was picked in the Di-Syston plot. A probable explanation is that the blended insecticide/fungicide combination is less phytotoxic to seedling cotton than other treatments.

### Table: Avg. number insects/10 plants

<table>
<thead>
<tr>
<th>Treatment and lb (Al/acre)</th>
<th>Immature thrips</th>
<th>Total thrips</th>
<th>Aphids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temik 15G</td>
<td>1.4c</td>
<td>2.1c</td>
<td>0.6b</td>
</tr>
<tr>
<td>Temik 15G</td>
<td>1.1c</td>
<td>2.0c</td>
<td>0.6b</td>
</tr>
<tr>
<td>Temik 15G</td>
<td>1.3c</td>
<td>1.8c</td>
<td>0.3b</td>
</tr>
<tr>
<td>Nemacur 15G</td>
<td>6.9ab</td>
<td>11.7a</td>
<td>6.3b</td>
</tr>
<tr>
<td>Nemacur 15G</td>
<td>6.5ab</td>
<td>13.6a</td>
<td>2.1b</td>
</tr>
<tr>
<td>Nemacur 15G</td>
<td>5.1ab</td>
<td>9.6ab</td>
<td>1.8b</td>
</tr>
<tr>
<td>Orthene 80SP w/o Fungicide</td>
<td>6.4*</td>
<td>10.0ab</td>
<td>5.6b</td>
</tr>
<tr>
<td>Orthene 80SP</td>
<td>6.4*</td>
<td>12.4a</td>
<td>12.6a</td>
</tr>
<tr>
<td>Di-Syston</td>
<td>3.1bc</td>
<td>6.4bc</td>
<td>1.5b</td>
</tr>
</tbody>
</table>

*6.4 oz Al/100 lb seed.

**Means within a column followed by a common letter are not significantly different (P = 0.05; DMRT).
<table>
<thead>
<tr>
<th>Treatment and lb (AI)/acre</th>
<th>First harvest</th>
<th>Total harvest</th>
<th>% first harvest</th>
<th>Increase over control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temik 15G</td>
<td>0.5</td>
<td>2817**</td>
<td>3215ab</td>
<td>87.7a</td>
</tr>
<tr>
<td>Temik 15G</td>
<td>0.75</td>
<td>2775abc</td>
<td>3155ab</td>
<td>88.0a</td>
</tr>
<tr>
<td>Temik 15G</td>
<td>1.0</td>
<td>2710bc</td>
<td>3147ab</td>
<td>86.1ab</td>
</tr>
<tr>
<td>Nemacur 15G</td>
<td>0.5</td>
<td>2802ab</td>
<td>3222a</td>
<td>86.6</td>
</tr>
<tr>
<td>Nemacur 15G</td>
<td>0.75</td>
<td>2722ab</td>
<td>3111ab</td>
<td>87.5ab</td>
</tr>
<tr>
<td>Nemacur 15G</td>
<td>1.0</td>
<td>2540bc</td>
<td>3006ab</td>
<td>84.8b</td>
</tr>
<tr>
<td>Orthene 80SP w/o Fungicide</td>
<td>6.4*</td>
<td>2574c</td>
<td>2971b</td>
<td>85.0ab</td>
</tr>
<tr>
<td>Orthene 80SP</td>
<td>6.4*</td>
<td>2539c</td>
<td>2968b</td>
<td>85.5ab</td>
</tr>
<tr>
<td>Di-Syston</td>
<td>1.0</td>
<td>2530a</td>
<td>3240a</td>
<td>87.6ab</td>
</tr>
</tbody>
</table>

*6.4 oz Al/100 lb seed.
**Means within a column followed by a common letter are not significantly different (P = 0.05; DMRT).

COTTON: *Gossypium hirsutum* L. 'DPL 41'

Tobacco budworm; *Heliothis virescens* (F.)
Cotton bollworm; *Heliothis zea* (Boddie)
Boll weevil; *Anthonomus grandis* grandis Boheman
Cotton aphid; *Aphis gossypii* Glover
Spider mites; *Tetranychus* spp.

Gene Burris
Northeast Research Station
Louisiana Agr. Expt. Station
L.S.U. Agricultural Center
St. Joseph, LA 71366

Kevin Ratchford
Macon Ridge Branch
Northeast Research Station
Louisiana Agr. Expt. Station
L.S.U. Agricultural Center
Winnsboro, LA 71295

J. B. Graves, A. M. Pavloff and B. R. Leonard
Department of Entomology
Louisiana Agr. Expt. Station
L.S.U. Agricultural Center
Baton Rouge, LA 70803

A COMPARISON OF THE IGR SD115110 0.42E TO SELECTED PYRETHROIDS AND LARVIN, 1986: Two rates of SD115110 0.42E (0.2 and 0.4 lb (AI)/acre) were evaluated against *Heliothis* spp., boll weevil, mites and aphids in a randomized complete block design with 3 replications. Plots were 8 rows (40 inch spacing) × 65 ft. Cotton was planted on 25 Apr on a Commerce silt loam soil that was fertilized with 90 lb N/acre preplant. Temik 15G (0.5 lb (AI)/acre) and Terraclor Super X (Terraclor 1.0 lb + Terrazole 0.25 lb (AI)/acre) were applied infurrow behind the planter. Test treatments were applied with a high clearance sprayer equipped with a compressed air system for spraying small plots and delivering 2.5 gal/acre. Applications were made on 9, 20, 24, 30 Jul, and 4 Aug. Guthion 2L (0.25 lb (AI)/acre) was applied on 15 Aug and methyl parathion (0.25 lb (AI)/acre) was applied with the defoliant. Treatment effects on *Heliothis* spp. and boll weevil were measured by observations on cotton squares on the 2 center rows of each plot. Spider mite and aphid populations were estimated in Aug by collecting 10 leaves (third fully developed terminal leaf) per plot, washing the insects from the leaves onto 200 mesh screens, backwashing them onto lined filter paper (7 cm) and counting them with the aid of a binocular dissecting microscope. Yields were determined by solid picking the 4 row plots with a mechanical harvester on 10 Sep and 16 Oct.

The emulsifiable liquid formulation of SD115110 produced light spotting (tissue damage) on leaves at both rates. *Heliothis* control for both rates was in the same range as that resulting from the use of pyrethroids and Larvin 3.2E. *Heliothis* larvae with ruptured exoskeletons were found in both treatments, indicative of the IGR type mode of action, and good spider mite control was apparent for the 0.4 lb Al/acre rate. Poor aphid and boll weevil control was observed at each rate of the IGR. Both IGR rates resulted in later maturity (% first harvest) than the pyrethroids or Larvin 3.2E treatments.