Insect Management in Peanuts

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Major Insects in Peanut

- Tobacco thrips
- Southern corn rootworm
- Potato leafhoppers
- Fall armyworms
- Corn earworms
- Spider mites
- Lesser cornstalk borer
Insect Management
Corn earworm
Spider mites
Thrips damage
Southern corn rootworm damage
Potato leafhopper damage

2,4-DB damage

Thrips damage
Components of Insect Management

- Insect identification/Scouting
- Economic thresholds
- Crop rotation
- Cultivar resistance
- Treat insects that are active
- Cultural practices
Sampling Procedures

- **Pest**
  - Thrips
  - Leafhopper
  - Rootworm
  - Foliar Feeders
  - Spider mites

- **When to Treat**
  - 25% leaflet damage
  - 25% leaflets with burn
  - See risk index
  - 4 worms/foot
  - Treat infested areas ASAP
Cultivar Resistance

• With the exception of the cultivar NC 6, all Virginia market type peanut cultivars are susceptible to southern corn rootworm, thrips, potato leafhoppers, corn earworms, fall armyworms, and spider mites.
Thrips Management
In-Furrow Treatments

- Di-Syston
- Thimet
- Temik
- Orthene
Thrips Management
Foliar Treatments

• Orthene
• Malathion
• Lannate
Corn Earworm and Fall Armyworm Management
Foliar Treatments

- Sevin
- Orthene
- Karate
- Asana
- Asana
- Danitol
- Lannate
- Baythroid
- Belt
Potato Leafhopper Management

- Sevin, POST
- Orthene, IFG or POST
- Karate, POST
- Asana, POST
- Malathion, POST
- Thimet, IFG or Pegging
- Di-Syston, IFG
- Lorsban, Pegging
- Baythroid, POST
- Belt, POST
Spider Mite Management

- Comite, POST
- Omite, POST
- Temik, Pegging
- Karate, POST
- Danitol, POST
Southern Corn Rootworm and Lesser Corn Stalk Borer Management

- **Southern Corn Rootworm**
  - Lorsban
  - Thimet
  - Mocap

- **Lesser Corn Stalk Borer**
  - Lorsban
Southern corn rootworm is an insect pest that feeds on developing pods in the soil.
Southern Corn Rootworm Index

- Variety selection
- Soil texture
- Drainage class
- Planting date
- Field history
- Irrigation
# MANAGING PEANUT ROOTWORM

Peanut Rootworm Advisory: What’s the risk of SCR in your fields?

## Table 5-3. One-Minute SCR Field Index Score

<table>
<thead>
<tr>
<th>Soil texture</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loamy sand</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Fine-sandy loam</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Loam</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drainage class</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well drained</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Moderately well drained</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Somewhat poorly drained</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Poorly drained</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field history of rootworm damage</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planting date</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before May 1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>May 2-May 15</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>After May 15</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cultivar resistance</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAMPS</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>NC-V 11, Gregory, Perry, Phillips, Bailey, Sugg, Florida 07, and GA 06G</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Irrigation</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>No irrigation</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

Total score
70 or above  High Risk  Treatment Needed
Treat high-risk fields with rootworm insecticides from about June 20 to July 10. All irrigated fields should be treated.

55 to 65  Moderate Risk  May Not Need Treatment
Treatment decisions for moderate-score fields depend on additional factors, such as weather and land-lease requirements. In many moderate-score fields, especially those at the low end of the range, rootworm damage does not reach economically damaging levels. In most years, pod damage in moderate-risk fields is not likely, so treatment may not provide an economic return and may, in fact, help create a spider mite problem. All irrigated fields should be treated.

50 or less  Low Risk  No treatment needed
Irrigation or wet weather may make rootworm problems worse. Always treat irrigated fields.
IPM and Secondary Pest Outbreaks

- Overuse of fungicides can flare spider mites - weather-based advisories can limit potential for this to occur.
- Applications of insecticides for southern corn rootworm control can flare spider mites - carefully selecting fields for insecticide applications only where it is needed can limit potential for this to occur.
No Lorsban
Minor amount of spider mite damage

Lorsban
Lots of spider mite damage

*Most likely there would be no rootworms to control when you have conditions favorable for spider mites

Photo provided by Jay Chapin, Clemson University
L = Lorsban
C = Control

Photo provided by Jay Chapin, Clemson University
The Decision to Apply Insecticide to Control Southern Corn Rootworm (SCRW)

<table>
<thead>
<tr>
<th>Did not apply insecticide</th>
<th>SCRW did not develop as a pest</th>
<th>SCRW did develop as a pest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Saved at least $15/acre in product, did not damage vines, saved labor costs</td>
<td>Substantial yield loss, in some studies 200-1000 lb/acre from insect damage and/or greater pod rot</td>
</tr>
</tbody>
</table>

| Did apply insecticide | Wasted at least $15/acre in product, labor and possible vine damage increased, flared spider mites (up to $50/acre to control mites and not completely effective) | Very good management decision. Often times weather conditions favoring SCRW (wet) is the opposite of conditions favoring spider mites (dry) |
Distribution of Tobacco Thrips Adults on Yellow Sticky Traps Over Bare Soil
Tomato Spotted Wilt Virus Index

- Variety selection
- Plant population
- Insecticide
- Planting date
- Tillage
Table 5-2. Advisory Index for Managing Tomato Spotted Wilt in North Carolina

### Peanuts

<table>
<thead>
<tr>
<th>Peanut Variety</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perry</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Sugg, CHAMPS, Phillips</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>GA 06G, Florida 07, Gregory, NC-V 11, Georgia Green, Bailey</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

Georgia Green is a runner market type. All other varieties are Virginia market types. Variation in response to tomato spotted wilt virus has been noted for the variety Gregory. Poor emergence and erratic and spotty stand have a major impact on development of tomato spotted wilt virus in varieties. This may be due, in part, because seed of Gregory are large, and peanut emergence may be less uniform than smaller seeded-varieties. Because seed of these varieties are large and more expensive at high seeding rates, growers are tempted to reduce seeding rates below recommended levels. Low planting rates may negate any benefits of partial resistance to TSWV.

<table>
<thead>
<tr>
<th>Planting Date</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to May 5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>May 6-15</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>After May 15</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

In absence of spotted wilt, higher yields are often obtained when peanuts are planted prior to May 15. Crop maturity can be affected by many factors. Planting a late-maturing variety such as Perry in late May to avoid spotted wilt may result in lower yields and market grades because pods do not have sufficient time and heat units to adequately mature.
<table>
<thead>
<tr>
<th>Plant Population (actual, not projected, stand)</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 or fewer plants per row foot</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>3 to 4 plants per row foot</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>5 or more plants per linear foot of row</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Seed size and count per pound should always be considered when planting Virginia market type peanuts. The varieties and seeding rates in pounds per acre (listed in parentheses) needed to establish a plant population of 4 plants per row foot assuming 80% germination (planting 5 seeds per row foot to get 4 plants per row foot): NC-V 11 Bailey (116 lb/acre), Sugg (126 lb/acre), Perry (138 lb/acre), NC 12C (158 lb/acre), Gregory (161 lb/acre), GA 06G, Florida 07, (100 lb/acre), Phillips (135 lb/acre), CHAMPS, (127 lb/acre), and Brantley (145 lb/acre). Actual seed count and germination can vary by year and lot. Consider the characteristics of the peanut seed you have purchased when setting your planter. For twin rows, the final plant population per linear foot of row is the sum of individual twin rows.
<table>
<thead>
<tr>
<th>Insecticide/Nematicide</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Orthene early postemergence</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Temik or Orthene in-furrow</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Table 5-2. Advisory Index for Managing Tomato Spotted Wilt in North Carolina

Peanuts

Thimet 20G or Phorate 20G in-furrow 5

The influence of insecticide on tomato spotted wilt virus should not be the overriding consideration for selection. Also consider effectiveness against thrips, injury potential from insecticides, cost of treatment, and possible interactions of insecticides with herbicides. If Thimet 20G, Phorate 20G, or Orthene is applied, growers will lose the nematode suppression provided by Temik.
<table>
<thead>
<tr>
<th>Tillage</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional tillage</td>
<td>10</td>
</tr>
<tr>
<td>Strip tillage into killed cover crop or previous crop residue</td>
<td>5</td>
</tr>
</tbody>
</table>

Research in North Carolina and Virginia has shown lower yields on average when peanuts are seeded into stubble from the previous crop. Establishing beds in the fall, seeding a cover crop, and then strip tilling peanuts into the killed cover crop has been the most effective reduced tillage system with yields from this approach similar to yields in conventional tillage systems. Yield potential has been more difficult to maintain on finer-textured soils when peanuts are strip tilled into the stubble from the previous crop and little or no bed is present. Using reduced tillage exclusively to manage tomato spotted wilt virus is not recommended.
Total Score

60 or Less = Low Risk  
65 to 85 = Moderate Risk  
90 or More = High Risk

Examples of the Advisory Index

All management options designed to minimize tomato spotted wilt virus:

Plant the variety Gregory (20 points) after May 5 but before May 10 (10 points) in strip tillage (5 points) at a plant population of 5 plants per row foot (5 points) using Thimet 20G in-furrow (5 points).

Advisory Index = 45 (Low Risk)

No management options designed to minimize tomato spotted wilt virus: Plant the variety Perry (40) before May 5 (25) in conventional tillage (10) at a plant population of 2 plants per row foot (25) using no in-furrow insecticide (25).

Advisory Index = 125 (High Risk)

Compromise situation – Finer-textured soil with history of Sclerotinia blight and CBR: Plant the variety Perry (40) between May 6 and 10 (10) in conventional tillage (15) at a plant population of 5 plants per foot of row (5) using Phorate 20G in-furrow (5).

Advisory Index = 75 (Moderate Risk)

Compromise situation – Coarse-textured soil with history of Sclerotinia blight in the extreme northern range of North Carolina production: Plant the variety VA 98R (30) prior to May 5 (25) in strip tillage (5) at a plant population of 5 plants per foot of row (5) using Temik in-furrow (10). Advisory Index = 75 (Moderate Risk)
Insect Management
Typical Grower Program
Considerable variation in programs

- Aldicarb, phorate, or acephathate applied in the seed furrow
- Acephate applied postemergence
- Granular chlorpyrifos applied at mid season
- Pyrethroid insecticides applied mid and late season
Restrictions on Feeding Insecticide-Treated Vines to Livestock

- **Do Not Feed**
  - Orthene
  - Lorsban
  - Asana
  - Lannate
  - Thimet

- **See Label Restrictions**
  - Temik
  - Sevin
  - Malathion
  - Comite/Omite
  - Karate
  - Danitol