Updates on Peanut Production and Pest Management
NC County Production Meetings, 2022

David Jordan
Department of Crop and Soil Sciences
North Carolina State University

919-810-6611
david_jordan@ncsu.edu
Peanut Team at NC State

- Entomology (Brandenburg, phased retirement)
- Plant Pathology (Shew, retired)
- Weed Science (Jordan)
- Nematology (Gorny)
- Agronomy (Jordan)
- Engineering (Roberson and Ward)
- Breeding and Genetics (Dunne and Andres)
- Food Science (Dean, USDA)
- Economics (Brown and Washburn, NCSU)
- NC State Extension Agents
- NCDA&CS
General Production Practices

- Apply nutrients based on soil test (pH 5.8 to 6.2)
- Avoid excessive Mg and K
- Avoid fields with zinc
- Establish good rotations (cotton, corn, sorghum)
- Plant in May
- 5 seed per foot of row on 36-inch rows
- Conventional tillage
- Irrigate if possible
- Inoculate with *Bradyrhizobia* for BNF
- Apply calcium at pegging
- Apply boron and manganese as needed
- Dig and harvest in a timely manner
- Control pests using IPM practices
Fertility Reminders

• Inoculate in new ground or rotated ground (positive response in both)

• New information on correcting a nitrogen deficiency (~50% of the field needs to be deficient for a broadcast application across the entire field to be justified)

• Entire field needs a pH above 5.8 (negative response to gypsum if pH is below 5.8)

• Apply gypsum to all peanuts (1x rate for Virginia market types and at least a 0.5x rate for runner market types)

• Consider the amount of manganese and boron in the formulations you use relative to application rates and cost
Plant Pathology

- After new department head for DEPP is hired, two extension plant pathologists will be hired (likely in late 2022)
Entomology

• Removal of Lorsban from market
• Efficacy of in-furrow insecticides (consistency of imidacloprid?)
• Spider mites (Portal)
• Caterpillar and Worm Control (Expensive products versus Pyrethroids)
Southern corn rootworm is an insect pest that feeds on developing pods in the soil.
Managing Southern Corn Rootworm without Lorsban

- SCR Risk Index can help avoid high risk fields (but there are financial implications of not planting these “good peanut fields”)
- Generally need 20% or more scarring to have measurable yield loss due to puncturing of pods (but hotspot fields and areas of fields do exist)
- Soil characteristics that affect survival of SCR larvae are variable across fields
- Consider planting higher risk fields early (finer-textured soils that are poorly drained as well as irrigated fields)
- Concern for irrigated peanut (ample soil water promotes survival of larvae that feed on pods), even in sandy, low organic matter fields
- No evidence that multiple applications of insecticide that affect adults will reduce damage from SCR
- AgLogic, Thimet, and Lorsban are no longer registered for use in peanuts to control SCR – there are currently no chemical options to suppress SCR
<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil texture</td>
<td>Loamy sand</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Fine sandy loam</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Loam</td>
<td>15</td>
</tr>
<tr>
<td>Drainage class</td>
<td>Well drained</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Moderately well drained</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Somewhat poorly drained</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Poorly drained</td>
<td>20</td>
</tr>
<tr>
<td>Damage history</td>
<td>None</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>15</td>
</tr>
<tr>
<td>Planting date</td>
<td>Before May 1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>May 2 – May 15</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>After May 15</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>After June 1</td>
<td>25</td>
</tr>
<tr>
<td>Cultivar resistance</td>
<td>Bailey II, Emery, GA 06G, Sullivan, Wynne, TUF 297, TUF 511</td>
<td>20</td>
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<tr>
<td>Irrigation</td>
<td>No irrigation</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Periodic irrigation or frequent rainfall</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Intensive Irrigation</td>
<td>45</td>
</tr>
<tr>
<td>Total score</td>
<td><strong>50 or less, low risk: 55-65, moderate risk: 70 or more, high risk</strong></td>
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Opposite of Risk for TSW:
Make sure plant population is adequate and thrips control program is effective if planting early.
Influence of Prevathon and Lorsban on peanut pod scarring caused by southern corn rootworm and peanut pod yield during 2017 and 2018.†

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>Growth stage‡</th>
<th>Experiments with pod scarring and yield recorded</th>
<th>Experiments with pod scarring only</th>
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<tbody>
<tr>
<td></td>
<td>lbs ai/acre</td>
<td></td>
<td>Pod scarring</td>
<td>Pod yield</td>
</tr>
<tr>
<td>Non-treated</td>
<td>-</td>
<td>-</td>
<td>20 a</td>
<td>4,570 a</td>
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<tr>
<td>Prevathon</td>
<td>0.063</td>
<td>R1-R3</td>
<td>19 a</td>
<td>4,620 a</td>
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<td>Lorsban</td>
<td>2.0</td>
<td>R1-R2</td>
<td>10 b</td>
<td>4,550 a</td>
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<td>P &gt; F</td>
<td>-</td>
<td>-</td>
<td>0.0100</td>
<td>0.4050</td>
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<td>CV(%)</td>
<td></td>
<td></td>
<td>36.4</td>
<td>11.4</td>
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<tr>
<td>No. of experiments</td>
<td>-</td>
<td>-</td>
<td>15</td>
<td>15</td>
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</table>

†Means within a column followed by the same letter are not significantly different based on Fisher’s Protected LSD test.

‡Peanut growth stages defined by Boote, 1982.
Pod Scarring Following Pegging Applications of Prevathon and Lorsban

Percent scarring

- Control
- Prevathon
- Lorsban
Distribution of SCR Pod Damage (1989-1996)
Relationship of Total Damage from SCR and Yield (1990-1992, Suffolk)  

<table>
<thead>
<tr>
<th>Years</th>
<th>Total pod damage</th>
<th>Peanut yield</th>
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<tbody>
<tr>
<td></td>
<td>No Lorsban</td>
<td>Lorsban</td>
</tr>
<tr>
<td>1990</td>
<td>39.9</td>
<td>8.4</td>
</tr>
<tr>
<td>1991</td>
<td>7.5</td>
<td>0.3</td>
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<tr>
<td>1992</td>
<td>13.1</td>
<td>5.9</td>
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</table>

30% pod damage = 214 lbs/acre (average yield of 3500 lbs/acre = 6%)  
18 lbs/acre for each percentage of pod damage  
Stem rot control?  
Thrips Control with In-Furrow Insecticides in 2021

Rick Brandenburg and Brian Royals
Department of Entomology and Plant Pathology
Injury from Thrips Feeding following In-furrow Insecticides (0 = no injury, 10 = plant death)

Injury on May 24 and June 3, 10 and 16
Peanut Yield (pounds per acre) following In-furrow Insecticides

\[ p = 0.0300 \]

- **AgLogic**: a
- **Thimet**: b
- **Admire Pro**: ab
- **Non-treated**: b
Vydate is being promoted for thrips control in some areas.

Vydate has activity against thrips but has not been tested recently in NC.

Vydate is not currently recommended in NC because it has not been tested.