If You Can Plant Into It

- No                  If Not

- Yes !

Same Response by Cotton

Regardless of How Much N on Small Grain

Can I Cut Back on My N Rate on Cotton
If I Used Some On My Small Grain ?

Glen Harris – University of Georgia (Tifton)
Soils of the Southeast

- Sandy
- Acidic
- Low Fertility
- Highly Weathered
- Poorly Buffered
- Low in Organic Matter
If You Can Plant Into It

- No                  If Not

Yes!

Same Response by Cotton Regardless of How Much N on Small Grain

Can I Cut Back on My N Rate on Cotton If I Used Some On My Small Grain?
Can I Cut Back on My N Rate on Cotton If I Used Some On My Small Grain?

Do NOT Exceed 15 lb N/a in Starter!!

Even in a “2 x 2” Placement!!
Nitrogen Fertilizers Sold in Georgia – FY 06
(Tons x 1000)
Foliar Feeding
DP 5555 BR

DELTAPINE®
Potassium Deficiency
“Early” Leafspot in Cotton
Potassium Trial 1998 – RDC Pivot

Lbs lint/a

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Lbs lint/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>1593</td>
</tr>
<tr>
<td>90+F</td>
<td>1685</td>
</tr>
<tr>
<td>45/45</td>
<td>1524</td>
</tr>
<tr>
<td>45/45+F</td>
<td>1575</td>
</tr>
</tbody>
</table>
Sunbelt Expo (Moultrie, Georgia) - 2009
K Rate on Cotton – Sunbelt Expo 2009
DP 0935
(STK = 46 Rec= 135)
K Rate on Cotton – Sunbelt Expo 2009
DP 0935

Lbs lint/a

<table>
<thead>
<tr>
<th></th>
<th>90AP</th>
<th>90AP+F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1077</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1327</td>
<td></td>
<td></td>
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</tbody>
</table>

DP 0935
K Rate on Cotton – Sunbelt Expo 2009
DP 0949   (STK = 46 Rec=135)
K Rate on Cotton – Sunbelt Expo 2009
DP 0949

Lbs lint/a

<table>
<thead>
<tr>
<th></th>
<th>90AP</th>
<th>90AP+F</th>
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</thead>
<tbody>
<tr>
<td>1333</td>
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<td>1468</td>
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</table>

Sunbelt Expo 2009 DP 0949
2006 UAP Foliar K
Sunbelt Expo

Yields (lb lint/a)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yields (lb lint/a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trisert+ 1.5 gal/a</td>
<td>1741</td>
</tr>
<tr>
<td>TrisertK+ 2.0 gal/a</td>
<td>1752</td>
</tr>
<tr>
<td>UTC</td>
<td>1710</td>
</tr>
</tbody>
</table>

CV=12%
Figure 1. Cotton lint yields were improved by adjusting solution pH in foliar application of several K sources.
N Deficiency

September 10 ’09
Nitrogen Management

Most Efficient = “3-Way Split”

Preplant

Sidedress

Foliar
## 2005 N Study – Harris

<table>
<thead>
<tr>
<th>Preplant</th>
<th>Sidedress</th>
<th>Foliar</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>30</td>
<td>0</td>
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</tr>
<tr>
<td>30</td>
<td>0</td>
<td>+</td>
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<tr>
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<tr>
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<td>0</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Yields (lb lint/a)

N Study 2005 - Harris

Bars labeled with letters to denote significant differences.
Yields (lb lint/a)

1980’s N Study – Walker et al
Affect of Foliar Yields (lb lint/a)

N Study 2005 - Harris

<table>
<thead>
<tr>
<th>30</th>
<th>60</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td>893</td>
<td>1470</td>
<td>1677</td>
</tr>
<tr>
<td>1267</td>
<td>1570</td>
<td>1609</td>
</tr>
</tbody>
</table>

No F
+Fol
Figure 1. Relative nitrogen requirements of cotton.
Plant Utilization of Urea

30% ABSORBED in one Hour
70% ABSORBED in 24 Hours

Nitrogen moved to the Boll in 6-48 Hours

No Nitrogen Movement to Other Leaves

Young Boll

Fruiting Branch
Calcium Requirement for Large-Seeded Runner Peanuts
# Peanut Seed Size

## Large-Seeded Runners (less than 700 seed/lb)
- **Georgia 06G**: 628
- **Florida 07**: 638
- **AP-4**: 648
- **Georgia 07W**: 647
- **Tifguard**: 652
- **McCloud**: 670
- **AT 3085SRO**: 685

## Medium-Seeded Runners (700-800 seed/lb)
- **Georgia 03L**: 710
- **Georgia Greener**: 724
- **AP-3**: 747
- **Georgia 02C**: 775

## Small-Seeded Runners (800+ seed/lb)
- **Georgia Green**: 804
- **York**: 842
Affect of Seed Calcium on Percent Germination of Peanut Seed

![Graph showing the relationship between Seed Ca (ppm) and Germination %]

\[ Y = -43.6 + 0.668x - 8.06 \times 10^{-4}x^2 \]

Plateau = 95%

\[ R^2 = 0.68 \]

Source: D.L. Hartzog and J.F. Adams, Auburn University
Provide Calcium to the Pegging Zone

1) Calcium Sulfate (Gypsum/Landplaster) - at Bloom

2) “Lime” Method – at Planting
Calcium Sources

**Gypsum/Landplaster/CaSO4**
- Granular (mined)
  - Ex. USG 500
- Wet Bulk
  - Exs. PCS Phosphogypsum
  - AgriCal FGD or “Smokestack”
- Semi-Granular (?)

**Lime (Ca/MgCO3)**
- Dolomitic and Calcitic
- Regular Ground and Fine

**“Liquid Calcium”**
- Foliar (“1 qt/a”) – Not Effective!
- CaCl and CaTS – Improve Grade?
- Liquid Lime and Liquid Gypsum (?)
N-Cal 212

Liquid - CaCl
Timing of N Applications

• Split Applications
• Preplant (1/4 to 1/3) then remainder at “Sidedress”
• Fertigation
  – Ex. 25 % (AP), 22.5 % (6, 12 and 18 L) then 7.5 % (at tassel)

• Reduces Risk of N Loss
• Reduces Total N Rate Needed
• Physiological Reasons
Figure 5. Nitrogen Fertilization Scheme (150 Bu/A Yield Goal) and Daily Nitrogen Requirement of Corn
“Enhanced Efficiency (EE)” Fertilizers
New Term Coined by The Fertilizer Institute (TFI)

“…products that minimize the potential of nutrient loss to the environment.”

**Slow/Controlled Release**
- Absorbed
- Coated
- Occluded
- Reacted

**Stabilized/Additive**
- Nitrification Inhibitors
- Urease Inhibitors
- Stabilizers

**CoRoN**

Association of American Plant Food Control Officials (AAPFCO)
2006 Tetra UAN/CaCl
Sunbelt Expo

Yields (lb lint/a)

0 UAN 0 CaCl 1250
0 UAN +CaCl 1535
30 UAN 1394
30 UAN +CaCl 1472
60 UAN 1517
60 UAN +CaCl 1493
2006 Englehard/Attapulgite Clay
Sunbelt Expo

Yields (lb lint/a)
Yields followed by the same letter are not statistically different (Coefficient of Variation = 15%).
Lang Farm (Tifton) - 2009

Corn Yield (bu/a)

Yields followed by same letter are not statistically different (Coefficient of Variation = 26 %)
UGA Boron Recommendation
0.5 lb B/a
2006 UAP Foliar Mn
Sunbelt Expo

Yields (lb lint/a)

CV=9%

LI 625
1 qt/a

LI 625
2 qt/a

UTC

1498
1298
1527

ab
b
a
Foliar Potassium on Soybeans?

- Two years of Study at Sunbelt Expo
- No
Questions?