PUMPKIN PRODUCTION: SOME DO’S, SOME DON’TS & SOME OPTIONS THAT WORK

Dr. Joe Kemble • Auburn University
Some Facts About Pumpkin Production in Alabama

- **CONVENTIONAL**
  - Bare ground
  - Direct seeded
  - Intensive
    - weed control
  - Sown late Jun – mid Jul

- **LIMITING FACTORS**
  - Weed pressure
  - Low soil moisture
    - Reduced stands & size
  - Increasing N costs
STEPS TO SUCCESSFUL Pumpkin Production

- **FIND A MARKET!!!**
  - choose a cultivar that sells

- **Scout fields & control pests**

- **Use well-drained soil**
  - if possible use raised beds

- **IRRIGATION????!!!!!!**
  - increased yield potential
  - increased quality
  - more important the further south your operation
STEPS TO SUCCESSFUL Pumpkin Production

- **SOIL TEST**
  - Fertility
  - Nematodes

- **TYPICAL FERTILIZER PROGRAM**
  - 50 lb N preplant
  - Sidedress 3 wk after sowing
    - w/ 20-30 lb N
  - Sidedress 6 wk after sowing
    - w/ 20-30 lb N

- **LIME TO pH 6.0 TO 6.5**

- **ALLOW SOIL TO WARM TO 60°F**
STEPS TO SUCCESSFUL Pumpkin Production

Bush types: Rows–5 to 6 feet apart; plants–2 to 3 feet apart in row; seed–4 to 6 pounds per acre.

Semi-vine types: Rows- 6 to 8 feet apart; plants–2 to 4 feet apart in row; seed–2 to 4 pounds per acre.

Vine types: Rows–8 to 10 feet apart; plants–4 to 5 feet apart in row; seed–2 to 4 pounds per acre.
### STEPS TO SUCCESSFUL Pumpkin Production

#### Miniature <2 lbs
- Apprentice
- Baby Boo
- Gooligan
- Lil Pump-ke-mon
- Lil Ironsides

#### Medium 6-12 lbs
- Autumn Gold
- Casper
- Cotton Candy
- Frosty
- Ghost-Rider
- Jarrahdale
- Midas
- Mystic Plus
- Neon
- Orange Bulldog

#### Large 12-20 lbs
- Big Autumn
- Cinderella
- Dependable
- Fairy Tale
- Gladiator
- Gold Bullion
- Harvest Jack
- Howdy Doody
- Magician
- Mother Lode
- Pro Gold 510
- Reliable
- Scarecrow
- Sorcerer

#### Extra Large 20-50 lbs
- Aladdin
- Big Max
- Gold Medallion
- Gold Rush
- Mammoth Gold
- Phantom
- Super Herc

#### Giant >50 lbs +
- Atlantic Giant
- First Prize
- Full Moon
- PrizeWinner
STEPS TO SUCCESSFUL Pumpkin Production

- Don’t plant too early
- Use honey bees
  - 1 hive/acre
- Control insects, diseases, & weeds
STEPS TO SUCCESSFUL Pumpkin Production

- **YIELDS**
  - Small fruited
    - 5 to 7 tons per acre
    - 2 to 4,000 fruit per acre
  - Large fruited
    - 10 to 30 tons per acre
    - 1 to 2,000 fruit per acre

- **When removing pumpkins...**
  - **CUT** don’t pull or rip from vines
  - Be sure to leave a long handle
STEPS TO SUCCESSFUL Pumpkin Production

**Costs**
- $815 to $1,745/acre
- Cost differences due to:
  - labor for harvest, haul, irrigation
  - Irrigation, irrigation equipment, boxes

**Returns**
- Vary depending on market
- Greatest potential with retail and direct sales
No-till and Strip-tillage

- **Minimum tillage method**
- **In-row portions tilled & sub-soiled**
- **Row middles are left undisturbed**

**Benefits:**
- Provides erosion control
- Conserves soil moisture
- Increases organic matter
- Some weed control activity
- Can use on-farm equipment
  - strip-till, no-till seeding
What We Found...

*An estimated 40% of plant tissue nitrogen becomes available the first year.

<table>
<thead>
<tr>
<th>Plant Type</th>
<th>Total N lb/acre</th>
<th>Available N lb/acre</th>
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</thead>
<tbody>
<tr>
<td>Yuchi Arrowleaf Clover</td>
<td>128.3</td>
<td>51.3</td>
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<tr>
<td>Hairy Vetch</td>
<td>137.4</td>
<td>55.0</td>
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<tr>
<td>Wheat + Crimson</td>
<td>95.2</td>
<td>38.0</td>
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<tr>
<td>Bare ground</td>
<td>0.0</td>
<td>0.0</td>
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</tbody>
</table>
### Fruit Number, Total Marketable Yield & Cover Crops

- *Yuchi & Vetch highest 3 out of 4 yrs; always > bare ground*

<table>
<thead>
<tr>
<th>Cover Crops</th>
<th>Fruit No. # per acre</th>
<th>Marketable Yield lb /acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yuchi Arrowleaf Clover</td>
<td>2,070.8</td>
<td>23,312.7</td>
</tr>
<tr>
<td>Hairy Vetch</td>
<td>1,974.9</td>
<td>21,536.5</td>
</tr>
<tr>
<td>Wheat + Crimson</td>
<td>1,791.5</td>
<td>21,202.5</td>
</tr>
<tr>
<td>Bare ground</td>
<td>1,570.9</td>
<td>15,480.2</td>
</tr>
</tbody>
</table>
What We Found…

- **Returns on Marketable Yield**
  - Vetch & Yuchi @ 45 lb/acre N $118 & $114 per acre
    - Based on wholesale value $6.50/250 lb fruit
  - **Poorest returns from bare ground**
    - $(-)60 @ 0 lb N to $70/acre @ 90 lb N
  - **Retail – most PYU, markets, patches, etc.**
    - Adjusted by 300 to 400% mark up
    - $1,125/acre to $1,688/acre for vetch @ 45 lb/acre N
STEPS TO SUCCESSFUL Pumpkin Production ?!

- Using a Cover Crop is Beneficial
  - Potential for increase returns
  - Increased environmental benefits

- Recommendation of 90 lb/acre N for pumpkins in Alabama can be reduced...
  - By 50% with no significant reductions in fruit number or marketable yield
  - With any cover or bare ground
POST-HARVEST CARE

- Curing is required
  - Elevated temperatures and relative humidity
  - To heal mechanical injuries
  - To ripen immature fruit

- Enhances color

- Ensures longer shelf life
STEPS TO SUCCESSFUL Pumpkin Production

- **Cure**
  - 80-85°F w/ 75-80% RH 10-20 d

- **Storage**
  - 50-55°F w/ 60-70% RH

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- Keep fruit dry, provide good air circulation
- Below 40°F cause chilling injury & fruit rots
- Keep 2-3 months