Selection of Muscadine Cultivars for the Fresh Market

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Muscadine Production Regions

Generally require 100 days to fruit.

Growing region rarely falls to 0-10 °F.

Frost is seldom a problem due to late flowering.
Choosing a muscadine cultivar.

Muscadines cultivars can be female or self-fertile (perfect) flowered.

If you only want one vine, make sure it is self-fertile!
Choosing a muscadine cultivar.

1. Juice or fresh eating?

- Wine/juice cultivars need high yields and good brix, berry size and skin toughness is important.

- Fresh-market grapes need to be large, firm, with a dry picking scar. Newer cultivars have a crisper skin.
2. Flower type.

- Yield of female vines reduced due to “cap-stick”, smaller cluster size, lack of pollination. Female cultivars may have only about ½ yield of self-fertile cultivars.

- Female vines are still grown because they often have bigger berries and better eating quality than self-fertile vines.
Choosing a muscadine cultivar.

3. Berry size.

- Self-fertile cultivars are usually smaller than female cultivars, but more consistent in size.
- Minimum size needed = 9-10 grams, 1 inch diameter.
- Clamshell berries can be smaller than boxed berries.

New release ‘Paulk’ combines large size and self-fertile flowers!
Choosing a muscadine cultivar.

4. Dry stem scars and firm flesh.

- Torn and split berries are often juiced rather than packed. Often juice up to 1/3 of cultivars with wet scars.
Choosing a muscadine cultivar.

5. Vigorous, disease resistant vines.

- Much easier to grow purple varieties as they seldom have much trouble with fruit rots. Bronze berries will rot if not sprayed well, especially when grown in the coastal plains.
Recommended fresh market purple cultivars.

<table>
<thead>
<tr>
<th>Season</th>
<th>Cultivar</th>
<th>Flower type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>Lane</td>
<td>Self-fertile</td>
</tr>
<tr>
<td>Mid</td>
<td>Supreme</td>
<td>Female</td>
</tr>
<tr>
<td>Mid</td>
<td>Delicious</td>
<td>Self-fertile</td>
</tr>
<tr>
<td>Mid</td>
<td>Ison</td>
<td>Self-fertile</td>
</tr>
<tr>
<td>Mid</td>
<td>Paulk</td>
<td>Self-fertile</td>
</tr>
<tr>
<td>Late</td>
<td>Nesbitt</td>
<td>Self-fertile</td>
</tr>
</tbody>
</table>
Prominent features of ‘Lane’ muscadine

- ‘Lane’ has moderate vigor and productivity.
- Size is similar to other self-fertile cultivars (9 g).
- Currently the only self-fertile **early** black cultivar.
- Berries have a very firm flesh and hold on the vine well with high brix.
‘Lane’ recommendation

‘Lane’ has moderate yields and can split at the stem scar. We currently recommend planting ‘Lane’ for early season black production and transitioning into ‘Supreme’ or ‘Paulk’ for main season black production.
Prominent features of ‘Supreme’ muscadine

- Most popular fresh market cultivar.
- Excellent size (15 g) and fruit firmness with crisp skin.
- Vine vigor is low, and heavy cropping can stunt vines.
- Berries often split on picking scar.
- Cold-hardiness is not good.
‘Supreme’ recommendation

The size and quality of ‘Supreme’ currently makes up for its fussy growth habits. Growers should reduce crop load if vines set too many berries or vine death can occur. Growers in northern regions may see heavy losses in cold years.
‘Paulk’ Muscadine

- Tested as Ga. 6-2-26.
- ‘Supreme’ x ‘Tara’ progeny.
- Named for Mr. Jacob Paulk, founder of Paulk Vineyards.
## Berry quality of ‘Paulk’ muscadine at Tifton Ga., (2012-2016)

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Flower type</th>
<th>Berry color</th>
<th>Berry weight (g)</th>
<th>Berry diameter (mm)</th>
<th>Percent soluble solids of all harvests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paulk</td>
<td>SF</td>
<td>Black</td>
<td>15.5 a</td>
<td>30.2 a</td>
<td>14.2</td>
</tr>
<tr>
<td>Supreme</td>
<td>F</td>
<td>Black</td>
<td>15.1 a</td>
<td>29.9 a</td>
<td>14.3</td>
</tr>
<tr>
<td>Fry</td>
<td>F</td>
<td>Bronze</td>
<td>11.7 b</td>
<td>27.4 b</td>
<td>14.0</td>
</tr>
<tr>
<td>Hall</td>
<td>SF</td>
<td>Bronze</td>
<td>10.2 cd</td>
<td>26.0 cd</td>
<td>14.5</td>
</tr>
<tr>
<td>Lane</td>
<td>SF</td>
<td>Black</td>
<td>9.6 d</td>
<td>25.6 d</td>
<td>15.3</td>
</tr>
<tr>
<td>Tara</td>
<td>SF</td>
<td>Bronze</td>
<td>10.8 bc</td>
<td>26.4 c</td>
<td>13.9</td>
</tr>
<tr>
<td>Sig.</td>
<td></td>
<td></td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>NS</td>
</tr>
</tbody>
</table>
• Similar appearance to Supreme.
• More prominent lenticels.
• Slightly redder color.
• More consistent berry size, few small berries, few giants.
## Harvest date of ‘Paulk’ Muscadine

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Avg. day of first harvest</th>
<th>Percent of total yield of first harvest</th>
<th>Percent soluble solids (Brix) of first harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paulk</td>
<td>Aug. 20</td>
<td>65</td>
<td>14.3</td>
</tr>
<tr>
<td>Supreme</td>
<td>Aug. 16</td>
<td>60</td>
<td>14.8</td>
</tr>
<tr>
<td>Fry</td>
<td>Aug. 15</td>
<td>64</td>
<td>14.3</td>
</tr>
<tr>
<td>Hall</td>
<td>July 31</td>
<td>47</td>
<td>14.9</td>
</tr>
<tr>
<td>Lane</td>
<td>Aug. 1</td>
<td>56</td>
<td>14.6</td>
</tr>
<tr>
<td>Tara</td>
<td>Aug. 2</td>
<td>61</td>
<td>14.2</td>
</tr>
</tbody>
</table>

* Early berries of ‘Supreme’ could have been picked, ‘Paulk’ does not have early ripening berries.
Notes on Yield of ‘Paulk’ Muscadine

- Good yields in tests.
- Can overproduce with lower quality and delayed harvest.
- Too heavy yield in Wray test in 2015, ‘Supreme’ had a lot of vine death, no death in ‘Paulk’.

Need to thin crop to keep quality and flavor up in some years.
<table>
<thead>
<tr>
<th>Cultivar</th>
<th>% Rot</th>
<th>% Split</th>
<th>% Tear</th>
<th>% Dry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paulk</td>
<td>8 b</td>
<td>4 c</td>
<td>11 d</td>
<td>85 ab</td>
</tr>
<tr>
<td>Supreme</td>
<td>4 c</td>
<td>13 b</td>
<td>29 b</td>
<td>59 c</td>
</tr>
<tr>
<td>Fry</td>
<td>16 a</td>
<td>18 a</td>
<td>34 a</td>
<td>48 d</td>
</tr>
<tr>
<td>Hall</td>
<td>17 a</td>
<td>3 c</td>
<td>8 d</td>
<td>90 a</td>
</tr>
<tr>
<td>Lane</td>
<td>4 c</td>
<td>22 a</td>
<td>23 c</td>
<td>55 c</td>
</tr>
<tr>
<td>Tara</td>
<td>10 b</td>
<td>5 c</td>
<td>12 d</td>
<td>83 b</td>
</tr>
<tr>
<td>Sig.</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

* More rot in ‘Paulk’ than most black muscadines, fungicides may be needed.
Prominent features of ‘Paulk’ muscadine.

- First self-fertile cultivar where berry size has continued to be large over time.
- Excellent yield potential.
- Good vigor, much better than ‘Lane’, but still can be overcropped.
- Overcropped berries will lack flavor and be later.
Prominent features of ‘Paulk’ muscadine.

- Skin and flesh texture similar to traditional muscadines.
- No early berries, you need to have an early black cultivar. ‘Lane’ or ‘Supreme’
- Much less berry split and tearing than ‘Supreme’.
- More disease susceptibility than most blacks, still much better than bronze cultivars.
- Unknown cold-hardiness.
Prominent features of ‘Delicious’ muscadine

- Medium size (10 g).
- Self-fertile.
- Can overcrop badly.
- Tough skin and soft pulp.
- Available mostly from Florida nurseries.
- OK for clamshell sales.
Prominent features of ‘Ison’ muscadine

- Medium size (10 g).
- Self-fertile, common pollinator.
- Can overcrop badly.
- Very good taste if not overcropped.
- OK for clamshell sales.
Prominent features of ‘Nesbitt’ muscadine

• Self-fertile flowers.
• Mid to late season cultivar.
• Good cold hardiness and disease resistance.
• Soft pulp and tough skin.
• Very useful for home garden or pick-your-own.
Recommended fresh market bronze cultivars.

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</thead>
<tbody>
<tr>
<td>Early</td>
<td>Hall</td>
<td>Self-fertile</td>
</tr>
<tr>
<td>Early</td>
<td>Early Fry</td>
<td>Female</td>
</tr>
<tr>
<td>Mid</td>
<td>Fry</td>
<td>Female</td>
</tr>
<tr>
<td>Late</td>
<td>Granny Val</td>
<td>Self-fertile</td>
</tr>
<tr>
<td>Late</td>
<td>Late Fry</td>
<td>Self-fertile</td>
</tr>
</tbody>
</table>
Prominent features of ‘Hall’ muscadine

- ‘Hall’ has good vigor and productivity, doesn’t overcrop.
- Better brix and flavor than ‘Tara’.
- Very good picking scar, low percentage of splits and tears.
- Color is more yellow than other bronze cultivars.
- Size is similar to other self-fertile cultivars (10g).
Prominent features of ‘Early Fry’ muscadine

- Female vine with large berry size (15g) and very good flavor.
- Berries are often somewhat dirty in appearance.
- Variable productivity.
Prominent features of ‘Fry’ muscadine

• Main season female cultivar.
• Large size (13 g) and great flavor, even when picked before peak ripeness.
• Variable productivity.
• Very disease susceptible and wet picking scar.
• Growers want a replacement, we don’t really have one yet.
Prominent features of ‘Late Fry’ muscadine

• Late season self-fertile cultivar.
• Fruit rot is an issue.
• Soft berry with a wet scar.
• Usually good flavor.
Prominent features of ‘Granny Val’ muscadine

• Late season self-fertile cultivar, probably latest one we have.
• Can be over-productive.
• Flavor is average to poor.
• Better disease resistance than ‘Late Fry’.
Miscellaneous bronze cultivars.

  - All are female with variable productivity. None have really taken off commercially.

- Summit – UGA release to replace ‘Fry’.
  - Smaller than ‘Fry’ and more reddish. Good flavor but less attractive. Not generally used as much as ‘Fry’.
Juice Cultivars

- 'Noble' – Small purple grape. Extremely vigorous and disease resistant. Holds juice color better than most muscadines. Poor fresh fruit value.
Juice Cultivars

- ‘Carlos' – Small bronze grape. Extremely vigorous and productive. Only good for juice.
Information Sources

• Google “UGA Muscadine Breeding” for cultivar information.

• Sources of plants – New UGA releases.
  – Ison’s Nursery
  – Bottoms Nursery
  – Agri-starts