Outline

• Description of the project
• Overview fall 2016 – fall 2017
• Schedule of activities in the planting
• Results of the cultivar trial
• Spotted wing drosophila and Japanese beetle
• Observations
RCA Trellis

• Advantages
  – Easier and efficient harvest, all fruit is on one side of the canopy.
  – Improved productivity
  – Enhanced control of SWD
  – Less sunscald, fruit is in the shade
  – Winter protection.

• Disadvantages
  – Expensive.
  – Harder to learn how to train and prune.
  – Management intensive
Late spring to late fall (May – Nov)

RCA Trellis

Late fall to early spring (Nov – Mar)

Early spring to late spring (Mar – May)
The Cultivars

• Floricane fruiting cultivars
  – Natchez
  – Osage
  – Ouachita
  – Apache
  – Triple Crown

• Primocane fruiting cultivars
  – Freedom
  – Traveler
The Planting

- Located at MU Southwest Research and Education Center, Mount Vernon (hardiness zone 6b)
- Funded with a MDA Specialty Crops Block Grant
- Established 2016
- 3 rows, 12 foot apart, each row 132 feet long, oriented east/west
- Plants planted 5 feet apart, in plots of 3 plants per cultivar, with 3 plots per cultivar
- Plants on raised beds, covered with landscape fabric, with a single 18 mm dripline per row with 18” emitter spacing
Burning the Holes
The Project

• Outreach and promotion
Overview Fall 2016 – Fall 2017

• Activities in the demonstration planting
• Workshops
• Blackberry promotional activities
Schedule of Activities in the Planting: Fall 2016-Fall 2017

- Tipping of primocanes
- Applying the row cover
- Removing the row cover
- Training primocanes
- Harvest
- Removing floricanes
- Training laterals
The laterals were tipped December 15 2016
The rowcovers were applied December 15 2016
The rowcovers were removed March 18 2017
Primocane training started on April 15 and continued through June; primocanes were trained 2 times per week
Harvest began June 6 and continued through early October; fruit harvest 3 times per week.
Floricane removal began as soon as harvest concluded for each cultivar.
Pruned floricanes were removed from the planting.
Training laterals began as soon as the floricanes were removed and out of the way; laterals were trained once per week.
Does anyone see a problem?
Laterals were tipped, pruned and positioned for winter in late November.
The trellis was lowered into the winter position.
Rowcovers were placed on December 8 2017
2017 Blackberry Workshops

• Spring Workshop, April 26, MU Southwest Research Center, Mt Vernon.
• Summer Workshop, June 21, MU Southwest Research Center, Mt Vernon.
• Summer Workshop, June 28, Arnold, MO and Belleville, IL
• Fall Workshop, July 26, MU Southwest Research Center, Mt Vernon.
• Winter Workshop, November 15, MU Southwest Research Center, Mt Vernon.
Chris Eckert of Eckert’s Farm describes the RCA trellis.
2018 Blackberry Workshops

- April 25 – Mount Vernon
- April 26 - Farmington
- June 27 – Mount Vernon

For details, see: http://www.webbcityfarmersmarket.com/grower-training.html
2017 Promotional Activities

• Children eating blackberries at free kids meal - 600
• Families receiving blackberries at food pantries- 200
• Number of people learning at 5 blackberry food demonstrations - 250
  – blackberry dressing/marinade
  – blackberry smoothies
  – blackberry & cheese grilled sandwiches
  – a variety of other recipes
Results of the Cultivar Trial

- Floricane harvest
- Primocane harvest
## Floricane Harvest

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>First Harvest</th>
<th>Peak Harvest Reached</th>
<th>Final Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natchez</td>
<td>June 6</td>
<td>June 27</td>
<td>July 26</td>
</tr>
<tr>
<td>Traveler</td>
<td>June 6</td>
<td>June 20</td>
<td>July 24</td>
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<tr>
<td>Freedom</td>
<td>June 16</td>
<td>June 20</td>
<td>July 3</td>
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<tr>
<td>Osage</td>
<td>June 16</td>
<td>July 3</td>
<td>August 7</td>
</tr>
<tr>
<td>Ouachita</td>
<td>June 16</td>
<td>June 27</td>
<td>August 2</td>
</tr>
<tr>
<td>Apache</td>
<td>June 30</td>
<td>July 10</td>
<td>September 1</td>
</tr>
<tr>
<td>Triple Crown</td>
<td>July 10</td>
<td>July 26</td>
<td>August 18</td>
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</table>
# Floricane Harvest

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Total Yield/plant (g)</th>
<th>Total Yield/plant (lb)</th>
<th>Berry Size (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natchez</td>
<td>7620</td>
<td>16.8</td>
<td>7.43</td>
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<td>Traveler</td>
<td>6610</td>
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<td>8.97</td>
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<td>Osage</td>
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<td>10.3</td>
<td>5.11</td>
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<tr>
<td>Ouachita</td>
<td>6190</td>
<td>13.6</td>
<td>6.30</td>
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<tr>
<td>Apache</td>
<td>4316</td>
<td>9.5</td>
<td>8.34</td>
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<tr>
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<td>5167</td>
<td>11.4</td>
<td>4.88</td>
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## Primocane Harvest

<table>
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<tr>
<th>Cultivar</th>
<th>First Harvest</th>
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<th>Final Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freedom</td>
<td>July 26</td>
<td>August 9</td>
<td>October 1</td>
</tr>
<tr>
<td>Traveler</td>
<td>July 26</td>
<td>August 11</td>
<td>October 1</td>
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<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Total Yield/Plant (g)</th>
<th>Total Yield/Plant (lb)</th>
<th>Berry Size (g)</th>
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</thead>
<tbody>
<tr>
<td>Freedom</td>
<td>1596</td>
<td>3.5</td>
<td>11.29</td>
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<tr>
<td>Traveler</td>
<td>3323</td>
<td>7.3</td>
<td>4.99</td>
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</tbody>
</table>
Taste Test Results

• Three taste testings in 2017:
  – Webb City Farmers Market, Webb City (n=20)
  – Summer Blackberry Workshop, Mount Vernon (n=11)
  – July Master Gardeners of Greene County chapter meeting, Springfield (n=15)
Rating Scale:  
1 = terrible, why did I put this in my mouth  
2 = poor, this isn’t very good  
3 = acceptable, I would eat this  
4 = good, I like this  
5 = fantastic, the best ever!
## Blackberry Taste Test Ratings – Flavor

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Webb City</th>
<th>Mt Vernon</th>
<th>Springfield</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apache</td>
<td>3.55²</td>
<td>3.19</td>
<td>3.20</td>
<td>3.31</td>
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<tr>
<td>Natchez</td>
<td>3.90</td>
<td>3.55</td>
<td>3.27</td>
<td>3.57</td>
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<tr>
<td>Ouachita</td>
<td>3.25</td>
<td>3.00</td>
<td>2.93</td>
<td>3.06</td>
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<tr>
<td>Osage</td>
<td>4.00</td>
<td>3.55</td>
<td>4.14</td>
<td>3.90</td>
</tr>
<tr>
<td>Triple Crown</td>
<td>2.90</td>
<td>3.18</td>
<td>3.14</td>
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<tr>
<td>Freedom</td>
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<td>Traveler</td>
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² Likert scale where 1 = terrible and 5 = fantastic
Blackberry Taste Test Ratings – Size

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Webb City</th>
<th>Mt Vernon</th>
<th>Springfield</th>
<th>Average</th>
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</thead>
<tbody>
<tr>
<td>Apache</td>
<td>4.25(^z)</td>
<td>4.09</td>
<td>4.40</td>
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<tr>
<td>Natchez</td>
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<td>3.82</td>
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<td>Ouachita</td>
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<td>3.18</td>
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<td>Osage</td>
<td>3.65</td>
<td>3.27</td>
<td>3.87</td>
<td>3.60</td>
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<tr>
<td>Triple Crown</td>
<td>3.55</td>
<td>3.30</td>
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<tr>
<td>Freedom</td>
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<td>4.20</td>
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<tr>
<td>Traveler</td>
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<td>3.40</td>
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</tbody>
</table>

\(^z\) Likert scale where 1= terrible and 5= fantastic
Blackberry Taste Test Ratings – Appearance

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Webb City</th>
<th>Mt Vernon</th>
<th>Springfield</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apache</td>
<td>4.40$^z$</td>
<td>3.82</td>
<td>4.53</td>
<td>4.25</td>
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<tr>
<td>Natchez</td>
<td>4.15</td>
<td>3.90</td>
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<tr>
<td>Ouachita</td>
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<td>Osage</td>
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<td>3.59</td>
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$^z$ Likert scale where 1 = terrible and 5 = fantastic
**Blackberry Taste Test Ratings – Overall Acceptance**

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Webb City</th>
<th>Mt Vernon</th>
<th>Springfield</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apache</td>
<td>3.55</td>
<td>3.45</td>
<td>3.80</td>
<td>3.60</td>
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<tr>
<td>Natchez</td>
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<tr>
<td>Ouachita</td>
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<td>Osage</td>
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<td>3.80</td>
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<td>3.79</td>
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<tr>
<td>Triple Crown</td>
<td>3.22</td>
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<td>3.24</td>
</tr>
<tr>
<td>Freedom</td>
<td>3.90</td>
<td>3.33</td>
<td>3.47</td>
<td>3.57</td>
</tr>
<tr>
<td>Traveler</td>
<td>3.55</td>
<td>2.73</td>
<td>3.80</td>
<td>3.36</td>
</tr>
</tbody>
</table>

*Likert scale where 1 = terrible and 5 = fantastic*
Floricane Issues

- Anthracnose
Primocane Issues

- Double berry on Freedom
- Cane breakage on Freedom
- Calyx issue on Traveler
- Late crop coincided with SWD pressure
Spotted Wing Drosophila and Japanese Beetle

• Management
• Research
Spotted Wing Drosophila

• Sprays were applied weekly on Friday, using a backpack sprayer

• Spray schedule:
  – Mustang Max
  – Delegate
  – Malathion

• We applied a total of 19 sprays from June-Oct!
Japanese Beetle

• Japanese beetles were early in 2017
• The SWD program controlled the beetles, except when Delegate was used
SWD trial, using different attractant mixtures
Observations

• The RCA trellis requires a lot of attention!
• Be careful when training primocanes
• Don’t let down your guard with SWD
• Try to remove floricanes as soon as possible and train laterals as soon as possible
• Not sure if primocane crop is profitable on RCA trellis in Missouri
Any Questions?

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