Current Issues in Organic Fruit Production

Thursday afternoon 1:00 pm

Where: Grand Gallery (main level) Room D  
MI Recertification credits: 2 (1C, COMM CORE, PRIV CORE)  
OH Recertification credits: 0.5 (presentations as marked)  
CCA Credits: PM(1.0) CM(1.0)  
Moderator: Matt Grieshop, Entomology Dept., MSU

1:00 pm Organic Pomme Fruit Candidates and Trials and Tribulations of the Nursery Industry  
  • Tom Callahan, Adams County Nursery, Aspers, PA
2:00 pm Update on Organic Fireblight Management (OH: 2B, 0.5 hr)  
  • George Sundin, Plant, Soil and Microbial Sciences Dept., MSU
2:30 pm Update on Organic Spotted Wing Drosophila Management  
  • Matt Grieshop, Entomology Dept., MSU
3:00 pm Session Ends
**INITIAL™**

- (X-6163 Cltv.)
- Scab-resistant
- Picks one week before Gala
- Prone to fruit drop
- Fruit has good size with a crisp, mild acidic flavor
- Pollen sterile

**CRIMSONCRISP®**

- PP#16,622 (CO-OP 39)
- Origin: Purdue-Rutgers Coop
- Tart, sweet flavor
- Flexible harvest date
- Tolerates heat; no sunburn observed to date
- Scab-resistant
- Late blooming
- Fire blight susceptible
- Huge potential for North Carolina markets

**CRIMSON® GOLD**

- (Svatava Cltv.)
- Scab-resistant
- Picks second week of September in Adams County, PA – just before Golden Delicious
- Fruit is medium in size with sweet-tart flavor
- Fruit has storage life up to 8 months
- Trees are very productive and should be thinned

**LIBERTY**

- Resistant to apple scab, cedar apple rust, fire blight and mildew
- Yellow fleshed desert apple
- Vigorous and an annual bearer
- Picks before Golden Delicious
GALARINA™
- (X-4982 Cltv.)
- High resistance to apple scab and mildew
- Mid-late season
- Fruit resemble Gala with medium size with sweet, crisp flavor
- Will store for 4 months in regular cold storage
- Fruit will hand up to four weeks after expected harvest with little stem cracking
- Tree hardier than Gala

NOVA SPY
- Harvest same season as Northern Spy but more precocious
- Great for fresh markets
- Keeps well
- Good resistance to apple scab

QUERINA™
- (X-2775 Cltv.)
- Scab-resistant and moderate resistance to mildew
- Golden Delicious and Jonathan in parentage
- Firm fruit that keeps up to 2-3 months in storage
- Picks 2-3 weeks after Golden Delicious
- Susceptible to cedar apple rust

ENTERPRISE™
- (Co-op 30)
- Deep red apple with medium to large size
- Highly resistant to fire blight and cedar apple rust
- Becoming an important processing variety

CRIMSON® TOPAZ
- (Topaz Cltv.)
- Origin: Czech Republic
- Uniquely striped red apple
- Very tart acid, sweet flavor
- Picks October 8 in PA
- Scab-resistant
- Southern heat tolerance
- Susceptible to fire blight and aerial phytophthora

WINECRISP™
- PP# 20,437 (CO-OP 31)
- Origin: University of Illinois
- Resembles Stayman
- Matures early October
- Spicy, tart flavor
- Very tolerant of hot climates
- Stores 6 to 8 months
- Scab-resistant
- Feedback from NC and PA testers has been very positive
**GOLDRUSH**

- (CO-OP 38)
- One of my late season favorites
- A Jekyll and Hyde apple
- Tart off the tree, sweet as sugar when stored
- Renewed interest as a main player for hard cider
- Tree habit very friendly, precocious even on big roots
- Apple is susceptible to cracking

**NOVA MAC**

- Developed by Agriculture and Agri-food Canada, Nova Scotia
- Mid-season variety - Picks one week before original McIntosh
- Flavor profile and eating qualities very similar to original McIntosh
- High resistance to apple scab and cedar apple rust
- Very prone to drop

**NEW HONEYCRISP STRAINS**

**PREMIER™ HONEYCRISP**

- PP# 24,833 (DAS 10 Cltv.)
- Harvests a good 3 weeks ahead of standard Honeycrisp
- Picks 3-4 days ahead of GingerGold in Adams County, PA
- Distinctive red strain with very good storage qualities

**RED STRAINS OF HONEYCRISP**

- Firestorm™ PPAF (BAB 2000 Cltv.)
  - Origin Pacific Northwest
  - Should reduce number of pickings due to high red color
  - Should be seeing fruit on young eastern plantings this year or next

- MinnB42 Honeycrisp
  - One of 12 red selections from University of Minnesota
  - Evaluated by Jim Schupp at FREC
  - Scientifically proven to be redder than standard Honeycrisp grown in eastern conditions

**DISEASE RESISTANT PEARS**
**PEAR CHALLENGES**

- European varieties are fire blight susceptible
  - Since fire blight is especially dangerous to vigorous trees, eastern pear orchards tend to be:
    - older trees
    - managed for low vigor, leading to
    - low productivity and small fruit size.
- Large, non-precocious trees
  - Blight susceptible seedling rootstocks
  - “Plant pears for your heirs”.

**FIRE BLIGHT RESISTANT VARIETIES**

- New blight resistant varieties available
  - USDA breeding program at Kearneysville, WV,
  - Canadian breeding program at Vineland.
- Fruit maturity range: August - October
  - Reported to be dessert quality
  - Winter varieties reported to store well
- Performance in Pennsylvania?

**SUNRISE**

- Introduced by USDA-ARS and OSU
- Impressive resistance to fire blight
- Harvest two weeks before Bartlett
- Will store for two to three months

**AC™ HARROW CRISP**

- PP#17,843
- Attractive fruit with red blush on yellow skin
- Great fruit quality: grit-free and firm
- Sweet, mild flavor
- Matures around the same time as Bartlett
- Harvest over a 2 week period
- Early fruit can be stored for 2 months
- Larger than Bartlett
- Productive and hardy trees
- Excellent tolerance to fire blight

**BLAKE’S PRIDE**

- Mid-season
- Picks one week after Bartlett
- Medium size fruit with excellent aromatic flavor
- Produces small annual crops
- High degree of resistance to fire blight

**AC™ HARROW SWEET**

- Yellow fruit with a red blush
- Excellent flavor
- Sweet and juicy
- Fruit size comparable to Bartlett
- Ripens 2 weeks after Bartlett
- Good resistance to fire blight
**COLD SNAP™**

- (HW64 Clv.)
- Formerly known as ‘Harovin Sundown’
- Attractive appearance with light red over color
- Late season, harvests 3 weeks after Bartlett
- Very fine texture
- Medium to firm fruit with great storage quality
- Larger size than Bartlett
- High tolerance to fire blight
- GROWER AGREEMENT REQUIRED

**POTOMAC**

- Moonglow x Beurre D’Anjou cross developed by USDA and OSU
- Pleasing sub-acid flavor with buttery texture
- Resistant to fire blight

**SHENANDOAH**

- Release from USDA and OSU
- Picks about 3 weeks after Bartlett
- Good fire blight resistance similar to Seckel
- Stores well for up to 5 months without breaking down
- Intense, juicy flavor
- High malic acid

**PEAR ROOTSTOCK AND SPACING**

- OHxF 87: best all-around pear rootstock in Pacific Northwest trials, based on:
  - Some tree size control
  - Precocity
  - Total yield, fruit size
  - Freedom from suckering
  - Resistant to fire blight.
- WSU Extension recommends 6’ x 14’ spacing

**NY PEAR ROOTSTOCK & SYSTEM TRIALS**

- W. NY trials:
  - Pears successfully managed in intensive plantings
  - Trees on a given rootstock grew smaller at closer spacing than same trees at wide spacing
  - Tree densities: 518, 908, or 2178 trees / A
  - OHxF 87 again among best rootstocks in trials.

**PEAR SYSTEMS**

- Similar growth habit to apple
  - Strong apical dominance
  - Upright branch angles
- Adapts well to cone shaped canopy
  - Central leader/ vertical axis/ spindle form
  - Limb spreading beneficial
**VERTICAL AXIS**

- Spacing: 6’ x 14’
- Spacing: 4’ x 12’
- Familiar: same tree training as apple
- Moderate size control
  - rootstock,
  - early cropping

**B1 AXIS**

- Spacing: 4’ x 12’
- Two upright leaders per tree, otherwise a V. axis
- Easy to create a narrow tree wall
- Size control from
  - Rootstock
  - Early cropping
  - Splits vigor / 2 vertical leaders
  - Close spacing

### 4TH LEAF PREFERENCE RANKING

<table>
<thead>
<tr>
<th>Preference rank</th>
<th>Bartlett</th>
<th>Harrow Sweet</th>
<th>Shenandoah</th>
<th>USB4907-166</th>
<th>731655-034</th>
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<tr>
<td>1</td>
<td>12</td>
<td>8</td>
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**4TH LEAF CONCLUSIONS**

- Harrow Sweet and Gem scored well in overall flavor
- Harrow Sweet and Shenandoah scored well in texture while 166 and Bartlett did not
- 166 was ranked least preferred by 10 of 18 hedonic testers
- 166 scored poorly in overall flavor
- Shenandoah, 166, and Gem had good visual appearance ratings, while Harrow Sweet did not

### 4TH LEAF TASTE PANEL RATINGS

<table>
<thead>
<tr>
<th>Variety</th>
<th>Visual</th>
<th>Appearance</th>
<th>Texture</th>
<th>Flavor</th>
<th>Grittiness</th>
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<td>Harrow Sweet</td>
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<td>6.9</td>
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<tr>
<td>Bartlett</td>
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<td>5.6</td>
<td>5.9</td>
<td>5.7</td>
<td>3.1</td>
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<tr>
<td>Gem</td>
<td>/1</td>
<td>6.8</td>
<td>/4</td>
<td>6.3</td>
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</tr>
</tbody>
</table>

### YIELD CHARACTERISTICS

- Yield characteristics are shown for different treatments in the graph.
Fire blight resistant pears show great promise for revitalizing the Eastern pear industry.

Several of the fire blight resistant pears ranked higher than the traditional fire blight susceptible pear Bartlett.

Variety 391 was ranked 1st in preference among the early ripening pears based on its flavor and juiciness.

Gem scored highest in visual appearance and was among the most preferred.

Shenandoah ranked highest in the 2nd tasting and had among the highest scores of all the pears.

Shenandoah, Harrow Sweet, and Gem also scored well in last year’s preference tasting.

Pennsylvania fruit growers will be informed about and adopt high quality, blight resistant varieties, rootstock, and intensive production systems.

Re-establish European pears as a profitable crop.

Contributing to diversity of fruit crops offered for sale to local consumers.

Crispie™

- (Prem2P Cltv.) PP#17,387P3
- Medium-sized fruit
- Yellow color
- Harvest one week before Bartlett
- Firm, juicy texture
- Great flavor
- Highly productive
- Not suggested for long-term storage

Reddy Robin™

- (PremP109 Cltv.)
- The first interspecific hybrid of Asian and European pear to be commercialized
- A spherical, red blush pear with sweet flavor and excellent storage life. Harvests end of August.
- Not considered fire blight resistant
- Commercial growers only
- Grower agreement required
**ASIAN PEAR VARIETIES**

**SHINSUI**
- Selected as one of the best early Asian pears due to high resistance to fire blight
- Harvests 10th – 15th of August

**ATAGO**
- Another brown russeted pear
- Very resistant to fire blight
- Harvests 2 weeks ahead of Olympic, September 23

**YOINASHI™**
- Somewhat tolerant to fire blight but not resistant
- Kind growth habit, somewhat upright and spurry
- Excellent flavor
- Harvest September 18

**OLYMPIC**
- Also known as Korean Giant
- #1 late season Asian pear
- Very resistant to fire blight
- Calcium cover sprays suggested to avoid internal browning
- Harvest Oct 10 in Pa