New Fire Blight Resistant Pear Cultivars

Mid-Atlantic Fruit and Vegetable Convention
January 2013
Fire Blight

- Caused by the bacterium *Erwinia amylovora*
- Endemic to North America – an annual threat in the Midwest and Eastern US
- First plant disease shown to be caused by a bacterium (1884).
- Infects blossoms, young leaves and shoots, fruit, and wounded limbs and trunks
- Serious loss of fruit, bearing wood, or whole trees
- Cannot be easily eradicated
## Resistance of European Pears

<table>
<thead>
<tr>
<th>Most</th>
<th>Moderate</th>
<th>Least</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander Lucas</td>
<td>Bonne Louise d’Avr. Conference*</td>
<td>Abate Fetel</td>
</tr>
<tr>
<td>Blake’s Pride*</td>
<td>Dawn*</td>
<td>Aurora*</td>
</tr>
<tr>
<td>Harrow Delight*</td>
<td>Duchesse d’Angouleme</td>
<td>Bartlett</td>
</tr>
<tr>
<td>Harrow Sweet*</td>
<td>Harvest Queen*</td>
<td>Beurre Bosc</td>
</tr>
<tr>
<td>Honeysweet*</td>
<td>Luscious*</td>
<td>Beurre d’Anjou</td>
</tr>
<tr>
<td>Magness*</td>
<td>Seckel</td>
<td>Blanquilla</td>
</tr>
<tr>
<td>Moonglow*</td>
<td>Shenandoah*</td>
<td>Starkrimson</td>
</tr>
<tr>
<td>Potomac*</td>
<td>Starking Delicious (syn. Maxine)</td>
<td>Coscia</td>
</tr>
<tr>
<td>Tyson</td>
<td>Sunrise*</td>
<td>Doyenné du Comice</td>
</tr>
<tr>
<td>Warren!</td>
<td>US71655-014*</td>
<td>Flemish Beauty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Forelle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gorham*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jules Guyot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Packham’s Triumph</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Passe Crassane</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Winter Nelis</td>
</tr>
</tbody>
</table>

* Breeding Program Releases

! Possible sister seedling of Magness
Fire Blight Resistance

- Sources of resistance:
  - *Pyrus ussuriensis*: Illinois 76, Illinois 65, Summercrisp, David
  - *Pyrus pyrifolia*: ‘Kieffer’, NJ 1
  - *Pyrus ×bretschneideri*: ‘Pai Li’ and others
‘Potomac’ Pear

- Highly resistant to fire blight
- Glossy, light green skin; calyx end russet
- Aromatic, sub-acid flavor
- Harvest 2 weeks after ‘Bartlett’
- Storage life: 2-3 months
‘Blake’s Pride’ Pear

- Flavor and aroma similar to ‘Comice’
- Fruit size equal to ‘Bartlett’
- Fire blight resistant
- Harvest date: 2 weeks after ‘Bartlett’
- Storage Life: 3-4 months
- Moderate vigor; upright-spreading tree habit
**FIRE BLIGHT RESPONSE OF ‘BLAKE’S PRIDE’ AND ‘BARTLETT’**

<table>
<thead>
<tr>
<th>Infection type</th>
<th>Cultivar</th>
<th>Blake’s Pride</th>
<th>Bartlett</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural</strong></td>
<td>4</td>
<td>8.0 a</td>
<td>6</td>
</tr>
<tr>
<td><strong>Shoot inoculation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency (%)</td>
<td>90</td>
<td>68 b</td>
<td>87</td>
</tr>
<tr>
<td>% Lesion length</td>
<td>90</td>
<td>14 b</td>
<td>87</td>
</tr>
<tr>
<td>Age of infected</td>
<td>90</td>
<td>.01 b</td>
<td>87</td>
</tr>
<tr>
<td>Blossom severity</td>
<td>40</td>
<td>2.9 b</td>
<td>40</td>
</tr>
</tbody>
</table>

Blossom infection severity scale based on tissue infected: 0 = no infection; 1 = receptacle; 2 = pedicle; 3 = basal tissue of cluster; 4 = spur of 1-year old wood; 5 = spur-bearing or 2-year old wood; 6 = wood 3-year old or older.
‘Shenandoah’ Pear

- Aromatic, sub-acid to acidic flavor which mellows in storage.
- Large fruit
- Fire blight resistance equal to ‘Seckel’
- Harvest 4 to 5 weeks after ‘Bartlett’
- Storage life: 5 months
<table>
<thead>
<tr>
<th>Cultivar</th>
<th>n</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>Cumulative Fruit Yield (kg)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenandoah</td>
<td>9</td>
<td>7.1a</td>
<td>3.8a</td>
<td>2.8a</td>
<td>28.3a</td>
<td>17.1a</td>
<td>63.8a</td>
<td>13.8a</td>
<td>136.7 a</td>
<td>231.4 a</td>
</tr>
<tr>
<td>Bartlett</td>
<td>7</td>
<td>0.3a</td>
<td>1.9a</td>
<td>2.6a</td>
<td>17.2a</td>
<td>13.0a</td>
<td>19.4b</td>
<td>7.5a</td>
<td>59.8 b</td>
<td>186.6 b</td>
</tr>
</tbody>
</table>

### RESPONSE OF ‘SHENANDOAH’ AND ‘BARTLETT’ TO FIRE BLIGHT

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Natural Infection</th>
<th>Artificial Shoot Inoculation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Mean score</td>
</tr>
<tr>
<td>Bartlett</td>
<td>15</td>
<td>2.3 a</td>
</tr>
<tr>
<td>Shenandoah</td>
<td>15</td>
<td>7.3 b</td>
</tr>
</tbody>
</table>

Natural infection scale: 1 = dead tree; 7 = some infection in 2-year old wood; 10 = no infection.
FREQUENCY AND SEVERITY OF ARTIFICIAL BLOSSOM INFECTION OF ‘SHENANDOAH’ AND ‘BARTLETT’

<table>
<thead>
<tr>
<th>Year</th>
<th>Cultivar</th>
<th>% Infected blossoms</th>
<th>% Infected spurs/wood</th>
<th>Lesion length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>Bartlett</td>
<td>92 a</td>
<td>64 a</td>
<td>230 a</td>
</tr>
<tr>
<td></td>
<td>Shenandoah</td>
<td>84 a</td>
<td>13 b</td>
<td>160 a</td>
</tr>
<tr>
<td>2004</td>
<td>Bartlett</td>
<td>95 a</td>
<td>98 a</td>
<td>664 a</td>
</tr>
<tr>
<td></td>
<td>Shenandoah</td>
<td>98 a</td>
<td>85 b</td>
<td>238 b</td>
</tr>
</tbody>
</table>
‘Sunrise’

- Aromatic, sweet flavor; 14-16% SS; high consumer sensory ratings
- Attractive; frequent blush
- Productive; 2-3 fruit/spur
- Moderately resistant to fire blight
- Matures 2 weeks before ‘Bartlett’ (Clapp’s season)
- Stores for 2-3 months without core breakdown
- Named and released in 2006 by USDA-ARS and The Ohio State University, OARDC
- Certified budwood source: NRSP-5
## FRUIT DESCRIPTIVE AND SENSORY TRAITS OF ‘SUNRISE’ AND ‘BARTLETT’.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Sunrise</th>
<th>Bartlett</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvest (days +/– Bartlett)</td>
<td>-14</td>
<td>0</td>
</tr>
<tr>
<td>Fruit size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diameter</td>
<td>2 ½”</td>
<td>2 ½”</td>
</tr>
<tr>
<td>Length</td>
<td>3 3/8”</td>
<td>3 1/8”</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>205</td>
<td>187</td>
</tr>
<tr>
<td>Core diameter</td>
<td>2/3”</td>
<td>7/8”</td>
</tr>
<tr>
<td>Flavor (1-9)</td>
<td>7.0</td>
<td>6.4</td>
</tr>
<tr>
<td>Aroma (1-3)</td>
<td>1.6</td>
<td>1.8</td>
</tr>
<tr>
<td>Texture (1-9)</td>
<td>6.9</td>
<td>6.2</td>
</tr>
<tr>
<td>Grit (1-9)</td>
<td>7.0</td>
<td>6.4</td>
</tr>
<tr>
<td>Juiciness (1-9)</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>Russet (1-9)</td>
<td>7.3</td>
<td>6.5</td>
</tr>
<tr>
<td>Appearance (1-9)</td>
<td>7.8</td>
<td>6.5</td>
</tr>
<tr>
<td>Storage life (days)</td>
<td>84</td>
<td>92</td>
</tr>
</tbody>
</table>
### FIRE BLIGHT INFECTION IN ‘SUNRISE’ AND ‘BARTLETT’

<table>
<thead>
<tr>
<th>Infection type</th>
<th>No. years</th>
<th>‘Sunrise’</th>
<th>‘Bartlett’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural (USDA score)</td>
<td>10</td>
<td>7.7 a</td>
<td>3.4 b</td>
</tr>
<tr>
<td>Artificial</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesion length (mm)</td>
<td></td>
<td>66 a</td>
<td>311 b</td>
</tr>
<tr>
<td>% Lesion length</td>
<td></td>
<td>9 a</td>
<td>81 b</td>
</tr>
</tbody>
</table>
US 71665-014

good sensory scores, long storing, productive

very little superficial scald, no russet
**SET 1 Results**

### Appearance Preference

<table>
<thead>
<tr>
<th>Percentage</th>
<th>a</th>
<th>b</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Most</td>
<td>100%</td>
<td>80%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>2. More</td>
<td>80%</td>
<td>60%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>3. Less</td>
<td>60%</td>
<td>40%</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>4. Least</td>
<td>40%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Taste Preference

<table>
<thead>
<tr>
<th>Percentage</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Most</td>
<td>100%</td>
<td>80%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>2. More</td>
<td>80%</td>
<td>60%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>3. Less</td>
<td>60%</td>
<td>40%</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>4. Least</td>
<td>40%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Taste Rating

(10: Like Extremely; 1: Dislike Extremely)

<table>
<thead>
<tr>
<th>Scale</th>
<th>a</th>
<th>b</th>
<th>b</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Concorde USDA 047 Bartlett USDA 014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

### Purchase Intent

<table>
<thead>
<tr>
<th>Percentage</th>
<th>a</th>
<th>b</th>
<th>b</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Definitely not Buy</td>
<td>100%</td>
<td>80%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Probably not Buy</td>
<td>80%</td>
<td>60%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Might/Might not Buy</td>
<td>60%</td>
<td>40%</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>Probably Buy</td>
<td>40%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>1. Definitely Buy</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Set 2. Results for sample set 2 (N=256). ‘Blake’s Pride’ rated highest for all four categories of appearance, taste, taste preference, and purchase intent. When ripened, ‘Blake’s Pride’ has a golden ground color underneath a fine, overall russet. ‘Madeira’ rated lowest in all the categories.
**Set 3.** Results for sample set 3 (N=149). ‘Taylor’s Gold’ rated highest in taste preference but the lowest in appearance. ‘Blake’s Pride’ ranked high in appearance, taste preference, and purchase intent. ‘Bartlett’ and ‘d’anjou’ rated only slightly lower in taste preference than the other two samples.
Flowering of US71655-014 and Anjou
Fruit Set of US71655-014 and Anjou
Fruit Yield of US71655-014 and Anjou
Yield Efficiency of US71655-014 and Anjou
Fruit Weight of US71655-014 and Anjou
Yield of US71655-014 in 2011 thinning trial

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield (lbs/tree)</th>
<th>Projected yield (bins/acre)</th>
<th>Avg. fruit wt. (g)</th>
<th>Avg. fruit size (no. per 44lb box)</th>
<th>Yield efficiency (lb cm⁻² TCA)</th>
<th>Trunk growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy</td>
<td>120.2 a</td>
<td>40</td>
<td>149.9 c</td>
<td>135 c</td>
<td>2.8 a</td>
<td>14.9 b</td>
</tr>
<tr>
<td>Moderate</td>
<td>88.1 b</td>
<td>29</td>
<td>170.4 b</td>
<td>120 b</td>
<td>2.2 ab</td>
<td>23.4 ab</td>
</tr>
<tr>
<td>Light</td>
<td>54.1 c</td>
<td>18</td>
<td>207.8 a</td>
<td>100 a</td>
<td>1.4 bc</td>
<td>27 a</td>
</tr>
<tr>
<td>Commercial</td>
<td>65.4 c</td>
<td>22</td>
<td>202.7 a</td>
<td>100 a</td>
<td>1.7 b</td>
<td>28.1 a</td>
</tr>
</tbody>
</table>

Cropload was adjusted to 5, 9, 11 fruit/cm² TCSA, and “Bartlett commercial” (3-5 fruit/cm² TCSA). Thinning was at ~60 days post full bloom. Eight single tree replicates.
Fruit size distribution as affected by thinning.
Effect of cropload on fruit size.

Fruit size improved with intensity of thinning. Fruit size can be managed to produce targeted fruit classes.
# Effect of delayed harvest on fruit firmness and fruit size

<table>
<thead>
<tr>
<th>Harvest Timing</th>
<th>Firmness (lbs)</th>
<th>Avg. fruit wt. (g)</th>
<th>Avg. fruit size (no. per 44lb box)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12.3 a</td>
<td>217 c</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>11.1 b</td>
<td>220 c</td>
<td>90</td>
</tr>
<tr>
<td>3</td>
<td>10.7 bc</td>
<td>239 b</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>9.9 c</td>
<td>259 a</td>
<td>80</td>
</tr>
</tbody>
</table>

Harvests were one week apart.
Postharvest storage and ripening

- US71655-014 maintained firmness in storage up to 6 months regardless of harvest date, and up to 7 months after the earliest harvest.
- After 7 days of ripening, following 1 month of storage, firmness was correlated with harvest date, with earlier harvested fruit being firmer.
- After 2-6 months of storage, there was a slight upward trend in firmness after 5 months, but no significant differences due to harvest date.
- Fruit texture at harvest and immediately after storage is crisp, and the fruit can be eaten without ripening; however, following a period of ripening at room temperature, it softens to ~3 lbs. firmness and develops typical pear flavor.
US 84907-069

- **Parentage**: Bartlett × US65062-040
- **Fruit Shape**: Round-pyriform
- **Skin Color**: Yellow
- **Size**: 3.6" x 3.1"
- **Appearance**: Good; Sparse, smooth, tan russet
- **Texture**: Moderately fine; juicy
- **Grit**: Sparse; small
- **Flavor**: Good; subacid; Bartlett-type; aromatic
- **Scald**: None observed
- **Breakdown**: Moderate in late-harvested fruit stored over 3 months
- **Harvest Date**: August 21
- **Storage Life**: At least 3 months
- **(1°C, air)**
- **Precocity**: Moderately early, similar to Bartlett
- **Production**: Moderately high
- **Fire blight**: Very resistant (9 on 1-10 USDA scale)
- **Psylla**: Susceptible
- **Canopy type**: Upright-spreading
- **Tree vigor**: Moderately vigorous
Parentage: Bartlett x US65062-040

Fruit:
- Shape: Round-pyriform
- Skin Color: Yellow; occasional red blush
- Size: 3.5" x 3.0"
- Appearance: Very good; light tan lenticel russet
- Texture: Very fine; buttery
- Grit: Very sparse; very small
- Flavor: Very good; subacid; aromatic; Bartlett-type
- Scald: None observed
- Breakdown: Very little observed after 3 months storage
- Harvest Date: August 30
- Storage Life: At least 3 months (-1ºC, air)

Tree Traits:
- Precocity: 1st fruit 3 years after planting
- Production: Productive
- Fire blight: Resistant (8 on USDA 1 – 10 scale)
- Psylla: Susceptible
- Canopy type: Upright-spreading
- Tree vigor: Moderate
US 84907-166

- **Parentage**
  - Bartlett x US65062-040

- **Fruit**
  - **Shape**
    - Round-pyriform
  - **Skin Color**
    - Yellow; 5-40% pink or red blush
  - **Size**
    - 3.7” x 3.1”
  - **Appearance**
    - Good; usually little russet; regular contour
  - **Texture**
    - Fine to very fine; fine-grained or buttery
  - **Grit**
    - Sparse; small to very small
  - **Flavor**
    - Sweet to subacid; Bartlett-type
  - **Scald**
    - Rare
  - **Breakdown**
    - Observed in late-harvested fruit only
  - **Harvest Date**
    - August 20
  - **Storage Life**
    - Only tested up to 3 months
      - (-1ºC, air)

- **Tree Traits**
  - **Precocity**
    - 1st fruit 2 years after planting
  - **Production**
    - Moderately high
  - **Fire blight**
    - Very resistant
  - **Psylla**
    - Susceptible
  - **Canopy type**
    - Upright-spreading
  - **Tree vigor**
    - Moderately vigorous
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Oregon State University Food Innovation Center, Portland
• Green Jade (2004)
• Ambrosia (2005)
• Honeysweet (1977)
‘Green Jade’

- **Parentage:** US 386 x Star
- **Fruit Description:** Round or ovate-pyriform, uneven contour, moderately large, yellow-green, uneven russet
- **Fruit Quality:** Mildly sweet, buttery to melting, slight aroma
- **Maturity:** 1st week of August (southern Indiana)
- **Storage Life:** ~ 2 months
- **Tree:** Moderately vigorous, upright-spreading
- **Fire blight resistance:** Tolerant, similar to Honeysweet
‘Green Jade’ (‘Crisp n’ Sweet’)
‘Ambrosia’

- Large pyriform fruit
- Matures mid-August
- Spreading habit
- Productive
- High quality fruit, with sweet flavor and no grit
- Tolerant of fire blight
- Some russet
‘Honeysweet’

- Medium size: 2 ½ “ diameter
- Excellent “Seckel’-like flavor and texture
- Good fire blight resistance
- Self-fertile or parthenocarpic
- Matures early September
- Fine overall russet, sometimes with slight red blush
AGRICULTURE AND AGRI-FOOD CANADA AT HARROW & VINELAND

‘HARVEST QUEEN’ (1982)
‘HARROW DELIGHT’ (1982)
‘HARROW SWEET’ (1991)
‘AC HARROW GOLD’ (1999)
‘AC HARROW CRISP’ (1999)
‘HAROVIN SUNDOWN’ (2008)
‘HARROW SWEET’

• PURDUE 80-51 x ‘BARTLETT’
• HARVEST: ‘BARTLETT’ + 3 WEEKS
• MEDIUM SIZE (140 – 190 g), PYRIFORM
• YELLOW SKIN, PROMINENT LENTICLES, AND SLIGHT RED RED BLUSH
• PRECOCIOUS AND PRODUCTIVE
• EXCELLENT FLAVOR (‘BARTLETT’-LIKE)
• GOOD PROCESSING QUALITY
• MODERATE FIRE BLIGHT RESISTANCE (APPEARS MORE SUSCEPTIBLE HERE THAN IN CANADA)
‘Harrow Sweet’
‘AC HARROW GOLD’

- ‘HARVEST QUEEN x ‘HARROW DELIGHT’
- ‘BARTLETT’ + 10 DAYS
- STORAGE LIFE: 4 – 6 WEEKS
- GOOD PROCESSING QUALITY
- PRECOCITY SIMILAR TO ‘BARTLETT’
- EXCELLENT FIRE BLIGHT RESISTANCE (9.6)
- PBR APPLIED FOR
- INTER-PLANT PATENT MARKETING
‘AC HARROW CRISP’

- ‘BARTLETT’ x US 56112-146
- ‘BARTLETT’ SEASON
- 2 WEEK HARVEST WINDOW
- STORAGE LIFE: 8 WEEKS
- CRISP FLESH
- PRODUCTIVE
- POOR POLLINATOR
- EXCELLENT FIRE BLIGHT RESISTANCE (9.5)
- PBR APPLIED FOR
‘HAROVIN SUNDOWN’

• FIRE BLIGHT TOLERANT
• LATE SEASON: 3 WEEKS AFTER ‘BARTLETT’
• HIGH FRUIT QUALITY: SWEET FLAVOR, LITTLE GRIT
• BEST AFTER 3-4 WEEKS OF COLD STORAGE
• ATTRACTIVE: YELLOW WHEN RIPENED, WITH RED BLUSH ON CHEEK
• LARGE FRUIT SIZE (196 GRAMS)
• NOT SUITABLE FOR PROCESSING
‘Harovin Sundown’
INSTITUT SPERIMENTRALE PER LA FRUTTICOLTURA FORLI, ITALY

- TOSCA (1993)
- TURANDOT (2000)
- NORMA (2000)
- CARMEN (2000)
- BOHEME (2003) – Fire blight tolerant
‘Bohème’

- ‘Conference’ x ‘Dr. Jules Guyot’
- Introduced in 2003
- Medium size, truncate-pyriform fruit (160g)
- Light green-yellow at maturity
- Matures 35 days before ‘Bartlett’
- Sweet aromatic flavor
- Productive
- Moderately vigorous tree, but with short internodes
- Moderately resistant to fire blight
‘Aida’

- ‘Coscia’ x ‘Dr. Jules Guyot’
- Introduced in 2003
- Large pyriform fruit (250g), yellow-green with 30% blush
- Moderately fine juicy texture
- Aromatic flavor
- Matures 15 days after ‘Bartlett’
- Moderately vigorous tree
- Moderately productive
- Slightly susceptible to fire blight
‘Uta’

- ‘Madame Verte’ x ‘Beurre Bosc’
- Dwarf growth habit with pyramidal canopy
- Late maturity with storage until February and March
- Excellent fruit quality
- Large (280 g), attractive, fully russeted fruit
- Precocious cropping; high yields; annually productive
- Resistant to powdery mildew and pear scab, and tolerant of fire blight
- Not compatible on quince rootstock
- Pollinated by ‘Bartlett’, ‘Clapp’s Favorite; incompatible with Anjou
‘Elliot’

- Named and released in 1989
- Recently evaluated in Europe
- High soluble solids (~18%) and acidity
- Stores well (up to 4 months)
- Heavily russeted
- Matures 2-4 weeks after ‘Bartlett’
- Fire blight tolerant, but not immune
THANK YOU

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