Update on the UGA Pecan Breeding Program

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New UGA cultivar release: 'Byrd'

- Parentage: 'Pawnee' x 'Desirable'
- Cross made by Dr. Darrell Sparks in 1989.
- Released in 2008.
- 46 nuts / lb
- 62% kernel

Flowering: Similar to 'Desirable' and 'Pawnee', early pollen shed and late pistil receptivity.
'Byrd'

• Advantages
  – Large nut with high % kernel
  – Very early harvest date, similar to 'Pawnee'.
  – Better kernel quality than 'Pawnee' or 'Mandan'.
  – Good scab resistance.

• Limitations
  – Thin shell with potential for water split.
  – Will likely need fruit thinning.
  – Lack of long term trials.
New USDA cultivar release: 'Mandan'

- Parentage – 'Osage' x BW-1
- Cross made in 1985
- Released for all growing regions
'Mandan' performance years 1-5 (2002-2006)

<table>
<thead>
<tr>
<th></th>
<th>Mandan</th>
<th>Desirable</th>
<th>Stuart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield (year 5)</td>
<td>3.4</td>
<td>2.7</td>
<td>0.6</td>
</tr>
<tr>
<td>% Kernel</td>
<td>57</td>
<td>51</td>
<td>49</td>
</tr>
<tr>
<td>Nuts/Lb</td>
<td>49</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td>Leaf Scab</td>
<td>1.5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Nut Scab</td>
<td>1.7</td>
<td>3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Flowering: Similar to 'Desirable' and 'Pawnee', early pollen shed and late pistil receptivity.
'Mandan'

• Advantages
  – Early harvest, 2-4 days before 'Pawnee'
  – Good size and % kernel.
  – Better scab resistance than 'Desirable' and 'Pawnee'

• Limitations
  – Despite high % kernel often did not fill kernel tips.
  – Dark kernel color and spotting.
  – Kernel cupping.
New USDA cultivar release: 'Apalachee'

- Parentage: 'Moore' x 'Schley'
- 85 nuts/lb
- 55% kernel
- Extensively tested at Muckalee plantation in Albany.
- Flowering similar to 'Desirable'.

![Image of pecan nuts and kernel measurements]
'Apalachee'

• Advantages
  – Precocious and consistently productive.
  – Good % kernel and shell out.
  – Strong tree form.

• Limitations
  – Smaller nut size than most growers want.
Breeding Program

• 142 crosses made, 18,000 seedlings produced.


• 11 seedlings selected for replicated testing.
## Selections Propagated in 2009

<table>
<thead>
<tr>
<th>Selection</th>
<th>Female parent</th>
<th>Male parent</th>
<th>Nuts/lb</th>
<th>% Kernel</th>
<th>Harvest date</th>
<th>Scab resistance</th>
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<tbody>
<tr>
<td>99-2-28</td>
<td>Elliott</td>
<td>Oconee</td>
<td>55</td>
<td>60</td>
<td>Early-Mid</td>
<td>Susceptible</td>
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<tr>
<td>99-3-22</td>
<td>Kiowa</td>
<td>Oconee</td>
<td>56</td>
<td>55</td>
<td>Early</td>
<td>Susceptible</td>
</tr>
<tr>
<td>99-7-55</td>
<td>Desirable</td>
<td>Elliott</td>
<td>67</td>
<td>59</td>
<td>Mid</td>
<td>Excellent</td>
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<tr>
<td>99-10-3</td>
<td>Oklahoma</td>
<td>Kiowa</td>
<td>53</td>
<td>59</td>
<td>Mid-Late</td>
<td>Excellent</td>
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<tr>
<td>99-12-20</td>
<td>Forkert</td>
<td>Pawneee</td>
<td>61</td>
<td>64</td>
<td>Early-Mid</td>
<td>Fair</td>
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<tr>
<td>00-6-34</td>
<td>Gloria</td>
<td>Caddo</td>
<td>63</td>
<td>53</td>
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<tr>
<td>03-6-32</td>
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<td>Desirable</td>
<td>46</td>
<td>60</td>
<td>Early</td>
<td>Good</td>
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