ROMANIAN
CHERRIES
BREEDING
PROGRAMME
ROMANIAN CHERRIES PRODUCTION

Minimum 68,000 t/2009

Maximum 104,800 t/2006

7% from total fruit production
Commercial orchard surface (ha)

<table>
<thead>
<tr>
<th></th>
<th>Surface (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>58.506</td>
</tr>
<tr>
<td>Pear</td>
<td>3.442</td>
</tr>
<tr>
<td>Cherries</td>
<td>7.032</td>
</tr>
<tr>
<td>Plum</td>
<td>60.455</td>
</tr>
<tr>
<td>Apricot</td>
<td>3.008</td>
</tr>
<tr>
<td>Walnut</td>
<td>1.237</td>
</tr>
<tr>
<td>Berries</td>
<td>112</td>
</tr>
<tr>
<td>Peach</td>
<td>2.538</td>
</tr>
<tr>
<td>Others</td>
<td>1.759</td>
</tr>
</tbody>
</table>
Commercial orchard age

<table>
<thead>
<tr>
<th>Fruit</th>
<th>&gt; 25 years</th>
<th>10-25 years</th>
<th>1-10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>35.782</td>
<td>19.741</td>
<td>2.983</td>
</tr>
<tr>
<td>Pear</td>
<td>1.543</td>
<td>1.676</td>
<td>224</td>
</tr>
<tr>
<td>Cherries</td>
<td>2.809</td>
<td>3.457</td>
<td>766</td>
</tr>
<tr>
<td>Plum</td>
<td>31.288</td>
<td>26.184</td>
<td>2.984</td>
</tr>
<tr>
<td>Apricot</td>
<td>1.286</td>
<td>1.529</td>
<td>193</td>
</tr>
<tr>
<td>Walnut</td>
<td>434</td>
<td>386</td>
<td>416</td>
</tr>
<tr>
<td>BERRIES</td>
<td>0</td>
<td>46</td>
<td>66</td>
</tr>
<tr>
<td>PEACH</td>
<td>1.369</td>
<td>834</td>
<td>335</td>
</tr>
<tr>
<td>OTHERS</td>
<td>468</td>
<td>633</td>
<td>658</td>
</tr>
</tbody>
</table>
RESEARCH TOPICS

- Preservation and evaluation of the "ex situ" collected germplasm;

- Releasing of new cultivars with best fruit quality and tolerance to biotic and abiotic factors.
SWEET AND SOUR CHERRY

Genetic resources and breeding

RSFG Iasi

RIFG Pitesti

ICDP
I. PRESERVATION AND EVALUATION OF THE „EX SITU" COLLECTED GERMPLASM
# Fruit genetic resources preserved at the RIFG Pitesti

<table>
<thead>
<tr>
<th>No.</th>
<th>Species</th>
<th>No. accessions</th>
<th>Species</th>
<th>Autochthonous accesions</th>
<th>Foreign cultivars</th>
<th>Evaluated genotypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Apple</td>
<td>567</td>
<td>13</td>
<td>100</td>
<td>454</td>
<td>308</td>
</tr>
<tr>
<td>2</td>
<td>Pear</td>
<td>334</td>
<td>25</td>
<td>164</td>
<td>145</td>
<td>280</td>
</tr>
<tr>
<td>3</td>
<td>Plum</td>
<td>550</td>
<td>9</td>
<td>231</td>
<td>310</td>
<td>350</td>
</tr>
<tr>
<td>4</td>
<td>Sweet cherry</td>
<td>361</td>
<td>3</td>
<td>239</td>
<td>119</td>
<td>317</td>
</tr>
<tr>
<td>5</td>
<td>Sour cherry</td>
<td>160</td>
<td>16</td>
<td>54</td>
<td>90</td>
<td>154</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>1.972</strong></td>
<td><strong>66</strong></td>
<td><strong>788</strong></td>
<td><strong>1.118</strong></td>
<td><strong>1.409</strong></td>
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</tbody>
</table>
Sweet Cherry Collection

Sour cherry collection
FRUIT GERMPLASM EVALUATION

Catalogue
Genetic resources in Romanian pomological collections
II. RELEASING OF NEW CULTIVARS WITH BEST FRUIT QUALITY AND GENETIC RESISTANCE TO BIOTIC AND ABIOTICS FACTORS
Seedling fields
Rootstock trial
OBTAINED RESULTS
In the last 20 years have been released:

- **42 sweet cherry varieties**
  - 24 by the Research Fruit Growing Station, Iasi;
  - 11 by the Research Institute for Fruit Growing, Pitesti;
  - 4 by the Research Fruit Growing Station, Bistrita;
  - 2 by the Research Fruit Growing Station, Cluj;
  - 1 by a private cherry grower.

- **5 sour cherry varieties**
  - 2 by the Research Institute for Fruit Growing, Pitesti;
  - 2 by the Research Fruit Growing Station, Falticeni;
  - 1 by the Research Fruit Growing Station, Iasi.
SWEET CHERRY BREEDING

• Specific breeding objectives:
  ➤ Harvesting season extension (early and late ripening cultivars);
  ➤ Tolerance to leaf spot and brown rot;
  ➤ Self fertility;
  ➤ Fruit quality improving;
  ➤ Improving fruit cracking resistance;
  ➤ Low vigour;
  ➤ High productivity.

• Annual breeding activity:
  ➤ 5-8 cross pollinations;
  ➤ 200 - 300 seedlings obtained;
  ➤ first evaluation of 2,000 seedlings;
  ➤ second evaluation of 40 selections.
GENITORS USED IN THE SWEET CHERRY BREEDING

Harvesting season extension
- Bigarreau Burlat
- Early Rivers
- Spectral, Sublim
- Sam, Skeena
- Kordia, George Hudson

Self fertility
- Stella
- New Star
- Sunburst
- Lapins
- Maria

Fruit quality
- Summit
- Bing
- Hedelfinger
- Germersdorf
- Van
- Superb
- Ulster

Tolerance to leaf spot and brown rot
- Viscount
- Hedelfinger
- Bigarreau Napoleon

Improving fruit cracking resistance
- Kristin
- Kordia
- Lapins
- Early Rivers

Low vigour
- Cerna
- Burlat C I
- Van compact
- Stella compact
- Lambert compact

High productivity
- Daria
- Van
- Superb
- Kristin
- Hedelfinger
SUBLIM
(Muncheberger fruhe x Bigarreau Moreau)
Large fruit, vigorous tree, tolerance to *Blumeriella jaapii*

SPECTRAL
(Muncheberger fruhe x Bigarreau Burlat)
Very early ripening season, medium sized fruit, short stem, tolerance to *Blumeriella jaapii*, susceptible to cracking
DARIA
(Boambe de Cotnari x Thurn und Taxis)
Consistently heavy cropping, large fruit

SIMBOL
(Bigarreau Donissen x Germersdorf)
Medium sized fruit, long stem, good processing quality
PONOARE
(Pietrose negre de Odessa X Ramon Oliva)
Productive, medium sized fruit, good tasting quality

SUPERB
(Boambe de Cotnari x Thurn und Taxis)
Attractive, firm, large fruit, good tasting quality, tolerance to Blumeriella jaapii
SILVA

Selection from wild flora with small fruit (3 - 4 g), black coloured flash and juice, bitter taste, good processing quality

TENTANT

(Germersdorf x Schneiders Spate)

Attractive, firm, large fruit, high productivity
SOUR CHERRY BREEDING

• **Specific breeding objectives**:  
  - Self fertility;
  - Red colored fruit (skin, flesh, juice);
  - Tolerance to leaf spot and brown rot;
  - Upright or spreading tree habit;
  - Small and spherical stone shape;
  - High yielding capacity.

• **Annual breeding activity**:  
  - 5 cross pollinations;
  - 600 - 1,000 seedlings obtained;
  - first evaluation of 2,500 seedlings;
  - second evaluation of 30 selections.
GENITORS USED IN THE SOUR CHERRY BREEDING

**Self fertility**
- Schattenmorelle,
- Nana, Oblacinska,
- Vladimirskia

**Red colored fruit**
- Heimans Rubin,
- Rival,
- Schattenmorelle,
- Sumadinka

**Tolerance to leaf spot and brown rot fruit**
- Spanka, Griot Moscovski,
- Anglaise Hative, Mari timpurii,
- Northstar

**Upright or spreading tree habit**
- Heimanns Konserven,
- Erdi Nogygyumolcsu,
- Tarina, Anglaise Hative,
- Eugenia, Montmorency

**High Yielding capacity**
- Schattenmorelle,
- Spaniole,
- Oblacinska,
- Nana, Sumadinka,
- Ilva,
- Ludwigs fruhte
RIVAL
(Griot Moscovski x Nana)
Medium ripening season, self fertile, very good yielding capacity, low susceptibility to *Monilia laxa*

STELAR
(Mocanesti 16 x Anglaise Hative)
Early ripening season, large fruit, tolerance to *Blumeriella jaapii*, good yielding capacity, upright tree habit
"CIREȘUL, VIȘINUL ȘI NUCUL - ȘANSE CERTE PENTRU VIITOR"

("Sweet cherry, sour cherry and walnut - a chance for the future")

Stațiunea de Cercetare Dezvoltare pentru Pomicultură Iași
15 iunie 2012
Thanks for your attention!