New cherry rootstocks from the Krymsk Experimental breeding station

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Krymsk Experimental breeding station

- Krymsk experimental Breeding Station was founded in 1935
- Prof. Gennady Eremin (director station 1974-2007) collected over 6000 unique Prunus genotypes for breeding interspecific rootstocks for stone fruit species
- Aims of breeding program:
  - Semi vigorous and dwarfing rootstocks for stone fruits
  - Precocious rootstocks adapted to hot and dry summer conditions
  - Rootstocks tolerant to dry, wet and wet soils, nematodes, pest and diseases
Varieties International – Oregon, USA

• Owns world license to propagate Krymsk rootstocks outside Russia

• Facilitates the patenting and marketing of Krymsk rootstocks outside Russia

• Organizes tours for interested nurseries to visit the Krymsk breeding station

Dave Weil    Adam Weil

International participants Krymsk tour 2017
Main characteristics of released Krymsk cherry rootstocks

Krymsk®5 (VSL-2)  *Prunus fructicosa x P. Lannesiana*
- Vigour 80% of Mazzard seedling
- Precocity between Mazzard and Gisela®6
- Lower flower density than with Gisela rootstocks
- Suitable for self-fertile varieties
- More tolerant to asphixia, drought and heat stress than Gisela®5 and Gisela®6
- Very sensitive to PNRS and PDV virus

Krymsk®6 (LC-52)  *Prunus cerasus x (P. cerasus x P. maakckii)*
- Vigour 70% of Mazzard seedling
- More precocious than Krymsk®5, similar to Gisela®6
- More tolerant to asphixia, drought and heat stress than Gisela®5 and Gisela®6
- Very sensitive to PNRS and PDV virus

Krymsk®7 (L2)  *Prunus lannesiana*
- Vigour 90% of Mazzard seedling, excellent for replant soils
- More precocious than Mazzard and Colt, equivalent to Mahaleb
- More tolerant to asphixia, drought and heat stress than Gisela®5 and Gisela®6
- Not sensitive to ILAR viruses
Heat stress trees on Gisela®6 in Turkey
Propagation Krymsk rootstocks

Hedge row Krymsk®5 for taking cuttings
Propagation Krymsk rootstocks by cuttings
Propagation Krymsk rootstocks

Field-grown cuttings of several Krymsk cherry rootstock selection

RVL-9  A9 x VSL-2  C56-12 x VSL-2
Tissue culture propagation
Evaluation of new selections in Krymsk
Evaluation of new selections in Krymsk

Tree growth, fruit yield, disease and pest resistance, drought tolerance, etc.

Evaluation is also done in Turkey, Chile, California and The Netherlands
Evaluation of new selections in Krymsk

Cultivar – rootstock compatibility
NAKTuinbouw Horst (NL) is EU-entry point

Some new Krymsk rootstock selections released from quarantine at Naktuinbouw (NL)
<table>
<thead>
<tr>
<th>Name/Code</th>
<th>Parentage</th>
<th>Estimated vigour compared to Mazzard seedling</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-7-17</td>
<td>( P. \text{ canescens } \times P. \text{ cerasus} )</td>
<td>50 %, smaller than Gisela\textsuperscript{5}</td>
</tr>
<tr>
<td>A-9 x VSL-2</td>
<td>((P. \text{ avium } \times P. \text{ incisa}) \times ) (( P. \text{ fructicosa } \times P. \text{ lannesiana} ))</td>
<td>60%</td>
</tr>
<tr>
<td>42-2-16</td>
<td>( P. \text{ serrulata} )</td>
<td>70%</td>
</tr>
<tr>
<td>C 56-12 x VSL-2</td>
<td>((P. \text{ cerasus } \times P. \text{ pseudocerasus}) \times ) (( P. \text{ fructicosa } \times P. \text{ lannesiana} ))</td>
<td>60%</td>
</tr>
<tr>
<td>P.Serrulata 42-2-16 No 1</td>
<td>( P. \text{ serrulata} )</td>
<td>70%</td>
</tr>
<tr>
<td>P.Serrulata x Sachalinensis</td>
<td>( P. \text{ serrulata } \times P. \text{ sachalinensis} )</td>
<td>60%</td>
</tr>
<tr>
<td>P.Mahaleb x P.Fruticosa Dwarf</td>
<td>?</td>
<td>dwarf</td>
</tr>
<tr>
<td>Rulan 8</td>
<td>((P. \text{ cerasus } \times P. \text{ maackii}) \times ) (( P. \text{ fructicosa } \times P. \text{ lannesiana} ))</td>
<td>50-60%</td>
</tr>
<tr>
<td>RVL-4</td>
<td>((P. \text{ maackii } \times P. \text{ cerasus }) \times ) ( P. \text{ lannesiana nr. 2} )</td>
<td>70%</td>
</tr>
<tr>
<td>RVL-7</td>
<td>((P. \text{ maackii } \times P. \text{ cerasus }) \times ) ( P. \text{ lannesiana nr. 2} )</td>
<td>60%</td>
</tr>
</tbody>
</table>
Evaluation of new selections in EU

- Will be done in cooperation with group of European Nurseries
- Coordinator and contact person trials in EU on behalf of Varieties Int.
  Dr. Frank Maas, The Netherlands
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Interested nurseries at the moment:
- Agromellora (Spain)
- Battistini (Italy)
- Botden & Van Willigen (Netherlands)
- Fleuren (Netherlands)
- Fytos (Czech Republic)
- Gräb (Germany)
- Schrama (Netherlands)
- Star fruits (France)
Thanks for your attention

‘Lapins field trial on different Krymsk rootstocks planted in 2018 at 5 x 2 m, 1 rootstock type in every 200 m long row

Interested in joining Krymsk rootstock testing group Europe? Contact: frank.maas.nl@gmail.com