Breeding and Development of Soybean Varieties in Middle-Europe

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Saatzucht Donau is a subsidiary of the two Austrian seed companies Saatbau Linz and Probstdorfer Saatzucht
### Variety registrations in the last years

<table>
<thead>
<tr>
<th>Variety Registrations</th>
<th>Reife 2 000-früh</th>
<th>Reife 3 000-mittel</th>
<th>Reife 4 000- spät</th>
<th>Reife 5 000-früh</th>
<th>Reife 6 00-mittel</th>
<th>Reife 7 00-spät</th>
<th>Reife 8 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probstdorfer Saatzucht</td>
<td>Alexa-15</td>
<td>Viola-15</td>
<td>Antonia-16</td>
<td>SY Emily-14</td>
<td>Flavia-10</td>
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</tbody>
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Soybean breeding at the breeding station Reichersberg

- 1989/1990 Acquisition of the Dornburger (East Germany-GDR) breeding program
- 1990 Start with own crosses
- Small soybean breeding program with limited resources
- 2010/2011 Extension of the breeding program and recruitment of a soybean breeder
Our breeding targets!

Development of new Feed and Food soybean varieties

• High and stable yields
• Resistent to abiotic stress factors
• Resistent to biotic stress factors
• Improved quality parameters
• Adapted to the different maturity zones in Austria and neighbouring countries (MG 0000-0)
Where do we screen our new varieties?
Soybean breeding

- Bi-parental cross, parent AxB->F1
- Single seed descent to F4
- Selection
- Release variety at F9 =6 or 7 years after the initial cross

- Up to 100 crosses/year
- Up to 50,000 F4 plants
- Up to 6000 head rows
- 1000 lines PYT
- 170 lines AYT=OT-1
- 10-12 lines OT1
Examples: Improving Soybean Using Exotic Germplasm

**USA:**
- **Aphid Resistance**
- **SCN Resistance**
- **Drought Tolerance**
  - Slow wilting
  - N2 fixation under drought
  - Fibrous rooting
- **Diversity**
  - Elite North American Soybean germplasm has a narrow genetic base.
  - 80% can be traced to 13 ancestral lines.
  - 50% of the northern US germplasm can be traced to 3 ancestral lines.

**Canada:**
- Maturity and cold temperature adaptation - >Fiskeby V
- **Yield Improvement** - >Canadian x Chinese crosses
- **SCN Resistance**

**Europe:**
- ? Dt2Dt2 semideterminate growth type
- **Low lipoxygenase**
- **Low P34 allergen**
Thank you for your attention!