Sweet cherry varieties bred in RBIP Holovousy

Autor: Lubor Zelený, Pavol Suran
Sweet cherry breeding

• **Important breeder** JITKA BLAŽKOVÁ bred sweet cherries for all her life more than 40 years.

• **More than 30 of genotypes** have been registered or applied for registration in our country till now.

• The emphasis was given on their **fruit size, fruit firmness, good taste and reliable productivity**.

• Time of their ripening completely **covers total cherry harvesting season** since the 1st cherry week (‘Adélka’ cv.) till the 7th (‘Vilma’ cv.).
Sweet cherry breeding

- Their **fruit size** is connected to the week of ripening. Some of them (‘Helga’, ‘Christiana’) are good resistant to fruit cracking, and **more productive** than ‘Kordia’.

- Some of them are preferably recommended for large scale **commercial growing**.

- Testing on rootstocks: mostly GiSelA 5, P-HL-A and P-HL-C (dwarfing CZ cherry rootstocks)

- Testing without irrigation and special fertigation
Total area: 78,866 km²
Population: > 10 mil.

Average temperature: 8.1 °C
Average rainfalls: 650 mm p. year
max. 1,700 mm p.year
min. 450 mm p.year
CZ sweet cherry cultivars

- Adélka
- Helga
- Aranka
- Kasandra
- Jacinta
- Marta
- Horka
- Vanda
- Těchlovan
- Early Korvik
- Elza
- Felicita – self-fertile
- Sylvana
- Christiana
- Sandra
- Debora
- Korvik
- Kordia
- Tim
- Fabiola
- Lívia
- Amid
- Justyna
- Tamara
- Halka – self-fertile
- Vilma
- Irena
Early ripening varieties

- **Kassandra** (20 d before ‘Kordia’, 4 d after ‘Burlat’)
- **Early Korvik** (9 d before ‘Kordia’, 15 d after ‘Burlat’)
- **Christiana** (8 d before ‘Kordia’, 13 d after ‘Burlat’)

Kasandra

- ‘Burlat’ x ‘Sunburst’
- **Blossoming:** early
- **S-alleles:** S1S3
- **Pollinizer:** Tamara’, ‘Burlat’, ‘Vanda’
- **Time of ripening:** early
Kasandra

- **Stem:** medium-long, 39-43 mm
- **Fruits:** very large, dark red skin, flesh softer than ‘Burlat’, sweetly acidulated (12-14 °Brix.), juicy, excellent taste.
Kasandra

- **Tree:** medium vigorous, rather dense canopy
- **Productivity:** precocious, high
- **Special note:** Moderately resistant to late spring frosts and *B. jaapii* and susceptible to Monilinia rot.

---

<table>
<thead>
<tr>
<th></th>
<th>Gisela 5</th>
<th>P-HL-A</th>
<th>P-HL-C</th>
<th>MaxMa 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kasandra</td>
<td>20,4</td>
<td>14,8</td>
<td>11,8</td>
<td>10,3</td>
</tr>
<tr>
<td>Kordia</td>
<td>10,0</td>
<td>7,0</td>
<td>7,0</td>
<td>14,0</td>
</tr>
<tr>
<td>Burlat</td>
<td>27,5</td>
<td>27,5</td>
<td>21,6</td>
<td>14,0</td>
</tr>
</tbody>
</table>

Kg/tree
Kasandra / MaxMa14 / Switzerland

- Diameter: 27.9
- Yield per tree: 14.3
- Firmness: 51.4

2011-2017
Early Korvik

- **mutation of our variety** ‘Korvik’ (‘Kordia’ x ‘Vic’)
- **Blossoming:** medium late
- **S-alleles:** S2S6
- **Pollinizer:** ‘Těchlovan’, ‘Kordia’
- **Time of ripening:** medium early
Early Korvik

- **Stem:** long, 45-50 mm
- **Fruits:** large, heart-shaped, dark brown-red skin, flesh firm, sweetly acidulated sweet (16-20.9 °Brix.), less juicy, very good taste

![Graph showing the comparison of Early Korvik, Kordia, and Burlat in terms of weight, diameter, cracking, and firmness.](attachment:image.png)
Early Korvik

• **Tree:** medium vigorous, medium dense canopy, wide-branched

• **Productivity:** very high, regular and uniform

• **Special note:** Quite resistant to late spring frosts and susceptible to Monilinia rot.
Early Korvik / Gisela 5 / Belgium

<table>
<thead>
<tr>
<th>Parameter</th>
<th>2016</th>
<th>2009-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (Kg/tree)</td>
<td>15.2</td>
<td>92.8</td>
</tr>
<tr>
<td>Fruit weight before sorting (g)</td>
<td>10.1</td>
<td>9.9</td>
</tr>
<tr>
<td>Production compared with Kordia (%)</td>
<td>192</td>
<td>114</td>
</tr>
<tr>
<td>% cracked cherries on the tree</td>
<td>39</td>
<td>28</td>
</tr>
<tr>
<td>Cracking index (1-100)</td>
<td>-</td>
<td>23</td>
</tr>
</tbody>
</table>

Early Korvik / Gisela 6 / Chile

**Figure 1: Calibration 2016**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Red</th>
<th>Red mahogany</th>
<th>Dark mahogany</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble solids (%)</td>
<td>17.7</td>
<td>17.5</td>
<td>19.1</td>
<td>18.1</td>
</tr>
<tr>
<td>Tritratable acidity (%)</td>
<td>-</td>
<td>-</td>
<td>1.76</td>
<td>-</td>
</tr>
<tr>
<td>Firmness durofel (0-100)</td>
<td>93.9</td>
<td>92</td>
<td>92.7</td>
<td>92.8</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.9</td>
<td>3.2</td>
<td>3.3</td>
<td>2.4</td>
</tr>
</tbody>
</table>

**Color distribution**

- Red: 4%
- Dark mahogany: 60%
- Red mahogany: 36%

**Size distribution (mm)**

- Size 22-23.9: 4%
- Size 24-25.9: 18%
- Size 26-27.9: 50%
- Size 28-30: 22%
- Size > 30: 6%
Christiana

- **Van‘ x ‘Kordia‘**
- **Blossoming:** medium early
- **S-alleles:** S3S6
- **Pollinizer:** ‘Tamara’, ‘Early Korvik’
- **Time of ripening:** medium early
Christiana

- **Stem**: medium-short, 30-38 mm
- **Fruits**: large, dark red skin, medium firm, aromatic acidulated sweet taste (15.3-21 °Brix.), juicy, very good taste
Christiana

- **Tree:** medium vigorous, wide-branched
- **Productivity:** precocious, very high
- **Special note:** Quite resistant to late spring frosts and sensitive to *B. jaapii.*
### Christiana / Gisela 5 / Belgium

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2011-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (Kg/tree)</td>
<td>10.6</td>
<td>13.2</td>
<td>44.1</td>
</tr>
<tr>
<td>Fruit weight before sorting (g)</td>
<td>7.4</td>
<td>8.5</td>
<td>8.8</td>
</tr>
<tr>
<td>Production compared with Kordia (%)</td>
<td>116</td>
<td>123</td>
<td>146</td>
</tr>
<tr>
<td>% cracked cherries on the tree</td>
<td>43</td>
<td>36</td>
<td>37</td>
</tr>
<tr>
<td>Cracking index (1-100)</td>
<td>-</td>
<td>-</td>
<td>52</td>
</tr>
</tbody>
</table>

### Christiana / Gisela 6 / Switzerland

**Frucht**

26–28mm Durchmesser, Ø 9 g.

![Graph](image1.png)

*Figure 1: Calibration 2015*

![Graph](image2.png)

*Figure 1: Calibration 2016*
Late ripening varieties

- **Felicita** (4 d before ‘Kordia’, 20 d after ‘Burlat’)
- **Tamara** (3 d after ‘Kordia’, 28 d after ‘Burlat’)
- **Irena** (7 d after ‘Kordia’, 31 d after ‘Burlat’)

Felicità

- ‘Krupnoplodnaja‘ x ‘Stella‘
- **Blossoming:** medium early
- **S-alleles:** S4`S9
- **Pollinizer:** self-fertile
- **Time of ripening:** medium late
Felicita

- **Stem:** medium-short, 35 mm
- **Fruits:** very large, dark red skin and flesh, firm, acidulated sweet (16-20.3 °Brix.), aromatic, juicy, very good taste
Felicita

- **Tree:** medium vigorous
- **Productivity:** precocious, high
- **Special note:** moderately resistant to *Monilinia fructigena* and *Blumeriella jaapii*, less resistant to fruit cracking

![Graph showing kg/tree for Felicita, Kordia, and Burlat varieties.](image-url)
Felicitas / Germany

2016

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>31</td>
</tr>
<tr>
<td>Weight</td>
<td>15</td>
</tr>
<tr>
<td>Firmness</td>
<td>74</td>
</tr>
</tbody>
</table>

Gisela 5
Tamara

- ‘Krupnoplodnaya’ x ‘Van’
- **Blossoming:** medium early
- **S-alleles:** S1S9
- **Pollinizer:** ‘Vanda’, ‘Burlat’, ‘Kordia’
- **Time of ripening:** late
Tamara

- **Stem**: medium-long, 39-43 mm
- **Fruits**: very large, red skin, very attractive, pink flesh, firm, very sweet (14-21 °Brix.), juicy, very good flavoured taste

![Graph showing the comparison of Tamara, Kordia, and Burlat in terms of weight, diameter, cracking, and firmness.](image-url)
**Tamara**

- **Tree**: medium vigorous
- **Productivity**: precocious, high
- **Special note**: medium susceptible to fruit cracking and susceptible to brown rot (monilinia)
Irena

- ‘Kordia’ x ‘Merton Reward’
- **Blossoming:** very late
- **S-alleles:** S4S6
- **Pollinizer:** ‘Regina’
- **Time of ripening:** late
Irena

- **Stem**: long, 55-60 mm
- **Fruits**: large, globular shape, darkly red colour; juicy, firm, sweetly acidulated (16-19 °Brix.), very good taste
Irena

- **Tree:** medium vigorous, medium dense canopy, wide-branched
- **Productivity:** precocious, medium high
- **Special note:** good pollinizer of cv. ‘Regina’. Sensitive to late spring frosts and moderate resistant to *B. jaapii* and Monilinia rot.
Irena / MaxMa14 / Switzerland

**Frucht**

28 – 30mm Durchmesser, Ø 13g.

2011-2017

- Diameter: 28.8
- Yield per tree: 14.8
- Firmness: 59.8

Irena / Germany

2016

- Diameter: 30
- Weight: 14
- Firmness: 73

**Gisela 5**
Thank you for your attention

Mail: zeleny@vsuo.cz