Planting Systems of Sweet Cherries in Belgium

Jef Vercammen and Ann Gomand

Introduction

Advising a planting distance or planting system is difficult. Several factors as soil type, cultivar or rootstock have a big influence. Also the experience of the grower is an important factor. If one has little experience with the training and pruning of sweet cherries, it may be appropriate to plant wider. For intensive plantings it is necessary to prune consistently to avoid problems with growth.

Results

Height

The tree height in all systems is less than 4 m. The Spanish bush is only 2 to 2.5 m high and it is no problem to stay at this height. The V-system is about 3 m high. In this system the leader branches are cut back since the 6th growth year in order to limit the height. In addition, the summer pruning ensures that the trees stay sufficiently open. The classical pruning and the English system are slightly higher. Nevertheless, it is no problem with a self-fertile cultivar to control the height. The central axe can simply be cut in the more-year-old wood.

Yield data

In 2012 the yield for all systems was very good (Table 1). The result was that the fruit size was smaller than in the previous years. Expressed in tons per ha, the Spanish bush had with 23.5 tons/ha the highest production, despite the low number of trees per ha. Because production in the early years remained behind, there is a difference in total yields of ± 20 tons/ha compared with the classical system after 9 production years (Fig. 1). The average fruit size is similar. In 2012 the V-system had a yield of 19.9 tons/ha. With the exception of the early years the yield was usually less in recent years. As a result this system has the lowest total yield of all planting systems in this trial. Moreover, it is a labour-intensive system with high investment costs. This ensures that the financial result after 10 years is the worst.

Materials and Methods

In the planting year 2002-2003 we started a trial with 4 planting systems with ‘Sweetheart’ on Gisela 5. The following systems were included in the trial:

- Classical system: In the first years strong branches were cut on a stump, the others were bent down. In recent years some branches were cut into the flower buds to improve the fruit size. (720 trees/ha)
- English system: Pruning is mainly done in the same way as in the classical system. In addition, in the early years a number of strong branches or shoots per tree are broken and attached to an underlying branch. (900 trees/ha)
- Spanish bush: At planting 5 to 6 shoots are maintained and topped. The central axe of the tree is removed in the second year. (600 trees/ha)
- V-system: In the planting year the central axe is removed. The best four branches per tree are used as leader branches for the formation of the V-system. (1.200 trees/ha)

The experiment was followed for 10 years and attention was mainly paid to production and fruit size. In 2004, 2005 and 2007 all planting systems were 1-sided root pruned with a straight blade.

After 9 production years the total yield is the highest for the classical system and the English system. But taking into account the number of trees per ha and the investment costs, the classical system has the best financial result after 10 growth years.

Table 1: Yield data of ‘Sweetheart’ in the 10th growth year (pcfruit-pps, 2003-2012).

<table>
<thead>
<tr>
<th>Object</th>
<th>Kg/tree</th>
<th>Ton/ha</th>
<th>Fruit weight (g)</th>
<th>Before sorting</th>
<th>After sorting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical</td>
<td>27.7</td>
<td>20.0</td>
<td>9.8</td>
<td>11.5</td>
<td></td>
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<tr>
<td>English</td>
<td>21.6</td>
<td>19.4</td>
<td>9.9</td>
<td>11.7</td>
<td></td>
</tr>
<tr>
<td>Spanish bush</td>
<td>30.2</td>
<td>23.5</td>
<td>9.5</td>
<td>11.2</td>
<td></td>
</tr>
<tr>
<td>V-system</td>
<td>16.6</td>
<td>19.9</td>
<td>9.3</td>
<td>11.2</td>
<td></td>
</tr>
</tbody>
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