

**Progress Report to the Agricultural Research Foundation  
for Fiscal Period 2000-2001**

**Title:** Sweet Cherry Cultivar Collection

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**Funding History:**

Year Initiated:	1990	
Funding in 2000-2001:		\$1,000.00
Funding requested for 2001-2002:		\$3,500.00

**Significant Findings:**

Most of the Canadian selections produced large to very large fruit and had good flavor. Trees planted in 1996 produced fruit in 2000 and fruit characteristics were similar to those of fruit obtained from grafted limbs. The evaluation is still at an early stage and more conclusive data on tree performance will be obtained in the next few years.

**Objectives and Procedures:**

1. To evaluate sweet cherry cultivars for the Mid-Columbia area with respect to fruit size, quality, incidence of disease, and susceptibility to rain cracking.

As many cultivars as possible will be collected and grown in a site in The Dalles and at MCAREC in Hood River. Observations will be made on vigor, cropping, and fruit quality. Selections will be evaluated as to which ones to discontinue and which new selections to add.

**Estimated Duration:** 5 years

**Results:**

Although trees are still at an early bearing stage, some findings are of interest. Performance for trees at Kelsey site are shown in Tables 1-3. GA<sub>3</sub> at 40 ppm was applied at this site during 2000. Bloom began during the first week of April for all materials, with full bloom occurring from 10-18 April (Table 1). Fruit characteristics and crop size are characterized in Table 2. 'Bing' trees produced fruit of an average weight of 10.0 g, with a good crop size. Several selections/cultivars produced larger fruit, although crop size was still small compared to 'Bing'. On the other hand, 'Sweetheart' showed a tendency to over-set.

Tree growth habit and crop potential (based on visual estimation of floral bud density) were also determined for materials at Kelsey site (Table 3). Selections 13-S-21-1 and 4W-11-8, as well as 'Sonata' and 'Newstar' were rated above 5 points on a scale of 1 to 10. They show a spreading growth habit and wide angles. This information provides a general idea of tree shape in the open vase type of pruning system, although trees need to be evaluated more years since they are in the early bearing stage.

Fruit firmness, weight, and maturity were determined for trees planted at MCAREC (Table 4). No GA<sub>3</sub> was applied at this site during 2000. On June 28, fruit from all materials, except for 'Sylvia', was considered ripe. 'Cristalina' and 'Sylvia' produced smaller fruit than at the Kelsey site, where GA<sub>3</sub> was applied.

This evaluation of sweet cherry selections and cultivars is still preliminary due to the young age of trees. Based on overall tree performance and fruit characteristics, materials that appear promising include 'Sandra Rose' (large fruit, slightly later than 'Bing'), 'Newstar' (large fruit, better tree growth habit than 'Bing'), and 'Sonnet' (large fruit, slightly later than 'Bing'). There is also interest in late materials such as 'Staccato'. Other materials of recent interest such as 'Skeena' need to be added to the evaluation plots. Information on the performance of promising materials during handling will be essential to determine the true commercial potential.

Table 1. Bloom dates of sweet cherry selections at the Kelsey site, The Dalles, OR, 2000.

Cultivar/ Selection	First bloom	Full Bloom
Cristalina	4/9	4/15
13N-7-19	4/3	4/11
Symphony	4/4	4/11
13S-21-7	4/8	4/12
Sonata	4/7	4/16
13S-17-40	4/7	4/15
Sandra Rose	4/9	4/16
13S-18-15	4/6	4/10
13S-49-24	4/4	4/15
13S-8-33	4/7	4/12
13S-21-1	4/9	4/17
Sylvia	4/11	4/18
Newstar	4/7	4/15
13S-24-21	4/8	4/15
8S-3-13	4/5	4/11
13S-42-49	4/10	4/18
Staccato (13S-20-9)	4/8	4/12
Sonnet (13S-39-51)	4/6	4/16
13S-16-29	4/7	4/18
Sweetheart	4/2	4/11
<b>Bing</b>	<b>4/4</b>	<b>4/12</b>
Regina <sup>z</sup>	-	4/18

<sup>z</sup> located in Hazel Dell

Table 2. Firmness and fruit weight of sweet cherry selections from trees planted in 1996 at the Kelsey site, The Dalles, OR, 2000, GA applied at 40 ppm.

Selection /cultivar <sup>z</sup>	Sample date	Fruit firmness (N/cm) <sup>y</sup>	Fruit weight (g)	Fruit maturity	Crop size <sup>x</sup>
Newstar	6/28	7.4	12.6	ripe	good
Cristalina	6/28	7.4	11.6	ripe	OK
13S-8-33	6/28	7.7	12.4	?	OK
13S-8-33	7/5	6.5	12.8	ripe?	--
<b>Bing</b>	<b>7/3</b>	<b>6.2</b>	<b>10.0</b>	<b>ripe</b>	<b>good</b>
Sandra Rose	7/5	5.9	13.1	ripe	poor
8S-3-13	7/5	7.1	12.5	ripe	poor
13S-18-15	7/5	6.1	13.0	ripe	poor
Sonnet (13S-39-51) <sup>w</sup>	7/5	7.4	13.0	ripe	poor
Sylvia	7/5	6.3	13.1	ripe	poor
13N-7-19	7/11	8.0	16.8	?	poor
13N-7-19	7/19	6.2	14.8	ripe?	--
Sonata	7/19	7.1	14.5	ripe	OK
4W-11-8	7/26	7.7	10.9	slightly overripe	OK
13S-24-21	8/1	6.8	9.2	ripe	poor
Staccato (13s-20-9) <sup>w</sup>	8/7	6.8	9.1	under ripe	poor
Staccato (13s-20-9)	8/11	7.2	8.9	slightly overripe	
13S-21-1	8/11	8.9	8.8	ripe	good
13S-16-29 <sup>w</sup>	--	--	--	--	none
Regina <sup>v</sup>	7/13	7.2	10.2	slightly overripe	poor
Sweetheart/Mazzard - Sp. Bush	7/26	9.5	10.2	under ripe slightly under	good
Sweetheart/G-6 - Sp. Bush	7/26	8.5	8.9	ripe	over set
Sweetheart/G-6 - Central Leader	7/26	6.7	9.0	ripe	over set
13S-17-40	7/5	7.6	12.0	?	--
13S-21-7	7/5	10.4	9.3	?	poor
13S-49-24	7/19	8.1	13.8	?	poor
13S-42-49	7/19	7.9	14.2	?	good

<sup>z</sup> all trees on Mazzard rootstock unless otherwise specified

<sup>y</sup> measured with an Instron Model 1000, 5 Kg weigh beam, range 20 Kg, crosshead speed 20

<sup>x</sup> estimation of relative crop size based on observation

<sup>w</sup> planted in 1997

<sup>v</sup> located in Hazel Dell

Table 3. Growth habit and crop potential of sweet cherry selections from trees planted in 1996 at the Kelsey site, The Dalles, OR, 3/30/2000.

Selection/cultivar	Growth habit	Crop potential <sup>z</sup>
4W-11-8	spreading habit, wide angles	5
13S-17-40	spreading habit, wide angles	2
13S-18-15	somewhat upright, little fruiting wood	1
Sonata	spreading habit	5
Sandra Rose	spreading habit	2
Sylvia	very upright	1
13S-21-7	somewhat spreading	1
13S-21-1	spreading habit, wide angles	7
Symphony	upright	2
13S-8-33	spreading habit	1
13S-49-24	spreading habit	3
13N-7-19	upright	3
Cristalina	somewhat upright	2
13S-42-49	somewhat upright	1
Newstar	spreading habit, wide angles	4
13S-24-21	very upright, fruit born high in tree	2
8S-3-13	spreading habit, wide angles	1
13S-20-9 (Staccato)	somewhat upright	1

<sup>z</sup>10 = highest crop potential based on observation of flower bud density on 3/30/2000

Table 4. Firmness and fruit weight of sweet cherry selections from trees planted in 1994 at MCAREC, Hood River, OR, 2000.

Cultivar <sup>z</sup>	Sample date	Fruit firmness (N/cm) <sup>y</sup>	Fruit weight (g)	Fruit maturity
Viva/G-7/MM46	6/28	7.8	7.1	ripe
Somerset/Mazzard	6/28	6.9	8.0	ripe
Cavalier/G-7/MM46	6/28	5.9	9.1	ripe
Royalton/Mazzard	6/28	6.6	10.0	ripe
Santina/Mazzard	6/28	6.5	8.4	ripe
Sylvia/Mazzard	6/28	5.9	9.7	under ripe
Cristalina/Mazzard	6/28	6.5	9.1	ripe

<sup>z</sup> no GA<sub>3</sub> was applied this year.

<sup>y</sup> measured with an Instron Model 1000, 5 Kg weigh beam, range 20 Kg, crosshead speed 20