

A Horticultural Review of the Newer Canadian Sweet Cherry Varieties

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(Presented at the 2003 Cherry Institute, Yakima, WA)

In recent years there has been an increasing interest in new varieties by growers throughout the Pacific Northwest. There are several reasons for this interest.

Harvest season. Historically, the majority of the fresh cherry harvest in The Dalles occurs in a six-day period around the 4th of July. New varieties are giving us the ability to extend the season to 1½ months, or longer when planted at different elevations. Not only does an extended season give growers the potential of increased returns, it also can reduce labor demands.

Tolerance to rain damage. Multiple varieties can also lower the devastating effect of rain damage. In 1991, a severe rainstorm hit the Northwest just before 'Bing' harvest and split a high percentage of 'Bings'. However, growers with 'Chelan' or 'Tieton' had already harvested these early varieties before the rain, thereby escaping the damage. In addition, some of these varieties such as 'Chelan' and 'Lapins' are more tolerant of rain than 'Bing' further decreasing the potential for rain damage.

Fruit size. Finally, the large sizes of many of these varieties, especially those from Canada, make the cherries very attractive to growers as well as consumers. Due to this factor many of these varieties receive a premium over 'Bing'.

Labor availability. Many growers have, in fact, diversified their cherry plantings over the last few years. 'Chelan', 'Tieton', 'Bing', 'Lapins', 'Skeena' and 'Sweetheart' are all varieties that have received a great deal of interest from growers. However, this "portfolio" of varieties leaves a harvest gap between 'Bing' and 'Lapins' or 'Skeena' that can be a problem. If pickers are not working between 'Bing' and 'Lapins' harvest they may decide to leave and seek employment elsewhere.

Research results

In 1996, scientists from Oregon State University planted a variety trial in The Dalles with 18 selections from the Summerland breeding program. In recent years a number of those selections were named and released by Pacific Agri-Food Research station in Summerland, British Columbia. Of these new releases there are two, 'Sandra Rose' and 'Sonata' that ripen between 'Bing' and 'Lapins' that may help fill this harvest gap. There are other varieties, however, that are also interesting.

This includes selections such as 13S-3-13, a very large early variety that had 76% 8 row cherries in 2001. Another selection, 13S-42-49 seems to be a high quality cherry that may

be of interest for the stemless market due to its weak stem attachment. Although Staccato ripens late, 13S-21-01 is even later.

We cannot, however, accept these cherries on these factors alone. Sandra Rose and 13S-3-13 are marginally firm with Firmtech 2 ratings of 252 g/mm and 286 g/mm, respectively, in 2002. These would be classified as average, but not firm ratings by at least one major Pacific Northwest packinghouse. Others, such as 13S-42-49 and Staccato seem to be very firm (Table 1).

132-S-13. 13S-3-13 is a selection that may be of interest to the Northwest cherry industry for its early ripening window and large size. In The Dalles it seems to ripen 4 to 5 days before 'Bing' and in 2001 grew fruit that was 76% 8 row and larger. Fruit set, however, is light to moderate. The taste is strong and flavorful, but various samplers disagreed on the quality of the flavor. Firmness remains the big issue with this selection. During the last two years firmness has been marginally acceptable with ratings of 250 g/mm and 286 g/mm. One Oregon packing shed uses 250 g/mm as the demarcation between export and domestic sales.

'Cristalina'. In the last few years 'Cristalina' has generated some interest from Northwest growers. It was said to be five days earlier than Bing, somewhat larger and more tolerant of rain splitting. However, in the last two years this cherry has been harvested with 'Bing'. In addition, although it is not self-fertile, it tends to overset; a comment made by European scientists, and observed this year in The Dalles. Fruit size went from 64% 9 row and larger in 2001 to 32% 9 row and larger in 2002. This is still acceptable size, however, the cherry was a very mild tasting cherry in 2001 and lacked flavor altogether in 2002. The firmness is another concern, being marginally acceptable at 286 g/mm. This is a cherry that needs to be pruned hard every year to maintain fruit size, firmness and potentially flavor. In addition, there appears to be a stem retention problem with this variety.

'Sandra Rose'. This is a cherry with great flavor that, . It, along with 'Sonata', falls into a harvest window between 'Bing' and 'Lapins', that is important to fill. The cherry is very large, with 58% 8-row and larger in 2001. However, upon grading the cherries, 50% were sorted out as culls due to wind or frost damage. In addition, this has always been a marginally firm cherry with a firmness reading of 252 g/mm in 2002 and about the same in 2001. If this cherry proves to have a propensity for marking it will not have a future in the Northwest cherry industry.

'Sonata'. Like 'Sandra Rose', 'Sonata' falls into an important harvest window and is a very large cherry, with 60% 8-row and larger in 2001. In fact, due to the large size and firmness, very high returns have been made in The Dalles on this cherry. However, 'Sonata' also has some major problems. Cullage rates due to wind or frost damage were around 30% this year. It is also a rather acidic cherry lacking the flavor that many people desire in a cherry. Finally, there is a question of stem retention, all of which adds up to a marginal cherry at best.

'Skeena'. This is the cherry that everyone is interested in and is currently planting. Most of the excitement about this cherry has been generated by Canadian growers that have tested or are commercially growing it at this time. We have little experience with it in the Pacific Northwest. Our trees, at the variety trial, will probably bear for the first time in 2003. Therefore, there is some risk in planting this cherry on such limited knowledge. As we learned in growing 'Lapins', Canadian growing conditions and those found in central Washington and The Dalles are significantly different. This was highlighted by our experience with 'Lapins', a cherry that has performed consistently well in Canada, but has been erratic in performance in the Pacific Northwest.

'Skeena' ripens at about the same time or slightly later than 'Lapins', but is currently the cherry of choice for this harvest time for a number of reasons. The flavor is strong and of high quality. The fruit is large, similar in size, or slightly larger than 'Lapins', however, unlike 'Lapins' the fruit grows in relatively loose clusters. The tree is open and therefore easier to grow than 'Lapins'. Like 'Lapins' the tree is self-fertile and therefore may have a tendency to overset, especially on Gisela rootstocks.

13S-42-49. This selection seems tends to ripen between 'Lapins' and 'Sweetheart'. A few years ago this would have been a cherry that we would have discarded outright due to weak stem attachment. However, with increased interest in marketing stemless cherries there may be a place for it in some orchards. Fruit seems to remain attached to the stem in normal winds but releases easily with a sharp rap on the branch, without the use of ethylene. The fruit is large with 40% 8-row and larger in 2001. The flavor is good, but mild. Before it is ripe there is somewhat of an off-flavor that disappears over time. At 322 g/mm, the fruit is very firm.

'Staccato'. There has been considerable interest in 'Staccato' for some time. Unfortunately, in the Pacific Northwest we are only now beginning to grow very limited quantities of this cherry. Under Canadian conditions, 'Staccato' seems to be of very high quality. In The Dalles it ripens in early August, more than one week after 'Sweetheart'. The fruit is large, but not huge, with 96% of the cherries falling into the 9-row category in 2002 and 60% in 2001 with few 8-row cherries. The flavor is strong, with a nice (agreeable, pleasant?) sweet/acid blend and the fruit is very firm at 360 g/mm. The main concern with 'Staccato' is its susceptibility to powdery mildew. In high-density orchards it will take diligence to keep the fruit healthy.

13S-21-01. This selection ripens even later than 'Staccato'. In fact, this last year it was 4 or 5 days later. The fruit of 13S-21-01 is smaller than 'Staccato', with 46% 9-row cherries in 2002. However, the flavor is better and it is very firm with a 301 g/mm rating. The slightly heart-shaped fruit is borne on an open, spreading tree with no clustering. Mildew may be a problem but disease severity seems to be less than with 'Staccato'.

Table 1. Fruit firmness as determined by Firmtech 2 for sweet cherry cultivars and selections. All trees were treated with 25 ppm GA₃. The Dalles, Oregon.

Selection/Cultivar	Av. Firmness (g/mm)*	Av. Firmness (g/mm)*
	2001	2002
13S-3-13	250.4	285.5
Cristalina	285.5	249.7
Bing	272.8	264.3
Sandra Rose	257.6	251.6
Sonata	300.8	334.9
Lapins	240.6	354.5
Sweetheart	322.1	389.2
13S-42-49	344.1	371.5
Staccato	335.9	359.8
13S-21-01	300.9	238.3

*Fruit firmness is based on a sample of 25 to 50 fruit.