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'Stella' Sweet Cherry

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The introduction of 'Stella' in 1968 was significant, as it was the first self-fertile sweet cherry cultivar with good fruit quality (6). The fruit were described as black, large, heart to oval in shpae with a medium course flesh. The flavor was rated as fair to good. Early descriptions were that the flesh was moderately firm, however grower experience since introduction has suggested that it is too soft for use in British Columbia because of the requirement for long distance shipping.

Until the release of 'Stella', sweet cherry cultivars were considered to be self-incompatible, also certain groups of cultivars are cross-incompatible (12). Commercial growers of sweet cherries needed to plant two or three cultivars of sweet cherries from different compatibility groups, with overlapping bloom periods to ensure adequate pollination and fruit set. As Tehrani and Brown (12) indicate this requires increased expense and potential management problems for growers. The advent of self-fertile cultivars allowed growers to plant larger blocks of single cultivars, helping to ease management of the orchard. In addition, self-fertile cultivars ensured more consistent production by producing fruit in years with poor pollination conditions (cool, wet with low bee flight((4, 12). Lane (4) reported that bee pollination of 'Stella' improved the final fruit set and number of fruits harvested. Conversely, the self-fertility trait has the potential for over cropping in years when pollination conditions are ideal. This can lead to over cropping and reduction in fruit size, an important quality trait in the marketplace.

'Stella' resulted from a cross between 'Lambert' and JI2420 made in 1956 and first selected in 1964. The self-fertility trait was inherited from JI2420, developed at the Johns Innes Institute, UK by crossing 'Emperor Francis' with irradiated pollen of 'Napoleon' (8). Incompatibility in sweet cherries is due to the gametophytic multiallelic locus *S*. A diploid style rejects a haploid pollen grain having one of the same *S* alleles. The selection JI2420 has lost the pollen activity of the S_4 allele (12) and this is indicated by an apostrophe, e.g., S_4'. Wiersma et al. (14) have determined that 'Stella' carries the alleles S_3S_4'. The selection JI2420 has benn also used in the breeding program at Ahrensburg, Germany, however no self-fertile cultivars have been released. The cause of the loss of pollen activity in S_4' is unknown.

Self-fertility has become an important trait in sweet cherrry breeding and development programs around the world, including Canada (3); France (11); Italy (10); Yugoslavia (9); Germany (1); Washington, USA (5); and Australia (2). In most cases either 'Stella' or a progeny of 'Stella' such as 'Lapins' were being used as the source of self-fertility. A number of cultivars have been released that have 'Stella' as a parent (Table 1).

Compact 'Stella' is a mutant that was developed by irradiation of 'Stella' scions with 4 kR of X-rays. It was named in 1973 and was hoped to combine self-fertility and a compact growth habit (7). It has not been extensively planted because of problems with fruit quality, primarily lack of firmness required by the British Columbia

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Table 1. Partial list of cultivars that have 'Stella' as a parent.

Country	Cultivar
Australia	'Sir Don', 'Sir Tom'
Canada	'Lapins', 'Sunburst', 'Newstar', 'Samba', 'Santina', Tehranivee', 'Vandalay'
Hungary	"Sandor'
Italy	'Isabella', 'Early Star'
United States	'Glacier', 'Chelan', 'Cashmere', 'Index', 'Starkrimson'

industry, and the compact nature did not result in significantly smaller trees.

The release of self-fertile cutivars combined with high fruit quality and extended maturity (such as 'Lapins' and 'Sweetheart') has resulted in extensive planting of sweet cherries in British Columbia. Growers in the Pacific Northwest of the United States have also expanded sweet cherry plantings with 'Lapins' (a progeny of 'Stella') the second leading sales variety in Washington (13). Self-fertility continues to be an important trait in the breeding program at the Pacific Agri-Food Research Centre at Summerland, however 'Stella' is no longer the primary parent used for this trait. Although 'Stella' did not become an important commercial variety it has had an immense impact in the development of high quality self-fertile varieties that now are making a major impact in sweet cherry industries around the world.

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Effects of Location of Plant Production on Strawberry

Transplants of 'Sweet Charlie' strawberry were secured from northern, mid-latitude and southern locations and planted in Florida. Plants from northern and mid-latitude areas fruited earlier which is more profitable. Plant loss was higher from southern produced plants mostly due to colletotrichum crown rot. Location of plant production affected the disease and insect pressure differentially. From Stapleton et al 2001 Hort Technology 11(1):61-665.