

'Annapolis' Strawberry

ANDREW R. JAMIESON¹

The 'Annapolis' strawberry, since it's introduction in 1984, has gradually risen to become a major early season cultivar in Canada and northeastern USA. It was the seventh cultivar from the Agriculture and Agri-Food Canada strawberry breeding program at the Atlantic Food and Horticulture Research Centre (AFHRC) at Kentville, NS, and the first AFHRC cultivar to be resistant to several races of *Phytophthora fragariae* (Hickman), the cause of red stele root rot (Table 1).

Origin

During the 1970s, red stele was posing a very serious threat to strawberry growers throughout Nova Scotia, so developing resistance to it became a priority in the breeding program. The cultivar 'Earliglow' was brought in to Kentville by breeder Donald L. Craig in 1975, the year of its introduction, to test as a source of resistance to red stele root rot. Although the cultivar didn't perform well in field trials—Kentville was outside of its range of adaptability—'Earliglow' was used as a parent in the breeding program during 1977 to 1980. Two seedling populations from the 1977 crosses yielded important selections in 1978. Craig selected K78-4 from 66 seedlings of ('Micmac' x 'Raritan') x 'Earliglow', and K78-6 came from 92 seedlings of 'Earliglow' x 'Kent'. These two selections were propagated and established in matted rows in 1979 for observations in 1980. His 1980 field notes indicate that Craig was quite impressed with K78-4 but less so with K78-6. Both were entered in a multi-site cultivar trial in 1981 and the 1982 harvest revealed that their yield was similar (about 2/3 of the very productive 'Kent') but K78-4 had a larger average fruit

weight and was a bit earlier. K78-6, however, was considered more flavorful. Since the need for red stele resistant cultivars was great, both selections were named and introduced in 1984, only 6 years after selection, as documented by Craig et al. (2). K78-4 became 'Annapolis' and K78-6 was named 'Cornwallis'.

Range of Adaptation

In Nova Scotia, growers took about 5 years to choose between 'Annapolis' and 'Cornwallis', then the near unanimous choice was 'Annapolis.' In the Atlantic provinces, it took 'Annapolis' about 10 years to surpass the popularity of 'Veestar', the principal early season strawberry from 1975 to the early 1990s. The potential usefulness of 'Annapolis' in the northern Midwest USA was recognized as early as 1989 (4). Throughout the 1990s, 'Annapolis' became a very important cultivar in the following strawberry growing regions: Upper Midwest USA and Canadian Prairies, the Midwest USA and Southern Ontario, Northeast USA and Eastern Canada. It is even grown to some extent in the Mid-Atlantic states, which is considered 'Earliglow' territory (3). 'Annapolis' is typically grown in a perennial matted row system. Some growers are experimenting with 'Annapolis' in an annual plasticulture system to advance the spring harvest period. 'Annapolis' runners early enough to supply ample propagules for producing plug plants for a summer planting.

Characteristics

Several characteristics of 'Annapolis' have contributed to its success. Its red stele resistance is important to many growers.

¹ Fruit Breeder, Agriculture and Agri-Food Canada, Atlantic Food and Horticulture Research Centre, 32 Main Street, Kentville, Nova Scotia B4N 1J5 Canada. Atlantic Food and Horticulture Research Centre Contribution no. 2237

Compared to other early cultivars, 'Annapolis' berries are quite large. The seasonal mean fruit weight of 'Annapolis' is 13 g compared to about 7-8 g for 'Veestar' (2). Contributing to this high fruit weight is the fact that the inflorescence of 'Annapolis' does not produce high numbers of flowers. The very small berries that many cultivars produce at the end of the harvest season are absent—'Annapolis' fields are generally picked clean. Although the harvest season is quite short for 'Annapolis', about three weeks, growers prefer this since there is less overlap with the more productive mid-season cultivars.

Plants of 'Annapolis' are vigorous, they runner freely, and are moderately resistant to foliar diseases with the exception of powdery mildew [*Sphaerotheca macularis* (Wallr. Fr.) Jacz. f. sp. *fragariae* Peries].

The fruit of 'Annapolis' are medium firm and globose to globose-conic. The color is light to medium red. The flavor has been described as moderately sweet and tart, similar to 'Kent', but with more aroma and flavor intensity (2). In general, the flavor of 'Annapolis' is considered good but not excellent. Perhaps this confirms A. G. Brown's (1) opinion, referring to apples, that "A pleasant but undistinguished flavor is regrettably the answer-following the maxim that most will like that which has

nothing to dislike."

'Annapolis' was used as a parent in the breeding program at AFHRC frequently from 1982-87. The selection rate from 'Annapolis' seedlings was 0.47% which is slightly below the average rate for non-'Annapolis' seedlings, indicating that it has been a mediocre parent. It was a parent of 'Cavendish', however, and 'Cavendish' itself has been a very useful parent (Table 1). Over the past decade, a major focus of the AFHRC breeding program has been to develop an early season cultivar with improvements over 'Annapolis' in fruit qualities including flavor and suitability for shipping. Although 'Annapolis' was originally introduced as a stop-gap cultivar for growers with severe problems with red stele root rot, it has been difficult to improve upon.

Literature Cited

1. Brown, A. G. 1975. Apples. Pp.3-37. In J. Janick and J. N. Moore (eds.) "Advances in Fruit Breeding." Purdue University Press, West Lafayette, IN.
2. Craig, D. L., A. R. Jamieson, K. A. Sanford, and N. L. Nickerson. 1991. Annapolis and Cornwallis strawberries. Can. J. Plant Sci. 71:933-936.
3. Hokanson, S. C. and C. E. Finn. 2000. Strawberry cultivar use in North America. HortTechnology 10:94-106.
4. Luby, J. J. 1989. Midwest and plains states strawberry cultivars. Fruit Var. J. 43:22-31.

Table 1. Strawberry cultivars developed by the Atlantic Food and Horticulture Research Centre.

Cultivar	Year Introduced	Maturity	Pedigree
Acadia	1964	Late midseason	Redcrop x Sparkle
Bounty	1972	Late	Jerseybelle x Senga Sengana
Micmac	1978	Late midseason	Tioga x Guardsman S ₁ (Redgauntlet x Tioga) x Raritan
Kent	1981	Midseason	Micmac x Bounty
Glooscap	1983	Midseason	[Micmac x (Guardsman x Tioga)] x Holiday
Blomidon	1984	Late midseason	(Micmac x Raritan) x Earliglow
Annapolis ¹	1984	Early	Earliglow x Kent
Cornwallis ¹	1984	Early	Glooscap x Annapolis
Cavendish ¹	1990	Early midseason	Scott x Honeoye
Mira ¹	1996	Late midseason	Veestar x Cavendish
Sable ¹	1998	Early	(Elsanta x K79-5) x (ArKing x K79-4)
Cabot ¹	1998	Late midseason	Cavendish x Honeoye
Brunswick ¹	1999	Midseason	(Honeoye x Veestar) x NYUS 119
Evangeline	1999	Early	

¹Resistant to *Phytophthora fragariae*