Strawberry Cultivar Testing in the Atlantic Provinces

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The testing of strawberry cultivars at the research stations in the Atlantic region of Canada went on independently prior to 1967. As a result, the stations frequently tested different groups of cultivars, which made it difficult to compare results on a yearly basis. Co-operative trials in which all locations planted the same cultivars in a given year were established at the Kentville, Nova Scotia; Charlottetown, Prince Edward Island; and Fredericton, New Brunswick Research Stations in 1967.

Cultivars on trial 1967-1970

Seven cultivars (Acadia, Gorella, Midway, Redcoat, Senga Sengana, Sparkle and Vesper) and the Kentville seedling, K-60-98, (Louise x Merrimack) were grown in the trials which were fruited once. The plants for all the trial plots were grown in propagation beds at Kentville. The soil in these beds was fumigated in the fall previous to spring planting. Plants for the propagation beds originated in the Kentville Research Station screenhouse and were free of virus diseases at time of planting. Insecticides were applied to the propagation beds every 7-10 days during the growing season.

The same cultivars were planted in 1967, 1968 and 1969 and were arranged in six randomized blocks of 10 plants per plot, with plants 2 feet apart in rows 4½ feet apart. The plants were permitted to form matted rows. Standard fertility and pesticide programs were used at all locations. Fruit was considered unmarketable when malformed, damaged by rot or mechanically damaged.

Cultivar Performance

The data were analysed by analysis of variance and are presented in Tables 1-3. The data analysis showed a significant interaction for location x years, location x cultivars, year x cultivars, and location x year x cultivars.

The yield data for the three trial locations show that the highest yielding cultivar varies from year to year, and from location to location (Table 1). However, the cultivar Gorella was the most consistent in that it was highest yielder in 6 of the 8 tests. Redcoat and Senga Sengana were also rather consistent in that they had highest yields in 5 of the 8 tests (Table 1). Vesper appears to be well suited to conditions at Charlottetown where it was highest yielder in all 3 years (Table 1). K60-98 also yielded well at Charlottetown (Table 1). Sparkle was the lowest yielder at all locations and in all years (Table 1).

Gorella, Acadia, Senga Sengana, Redcoat and Vesper outyielded Midway, K60-98 and Sparkle but did not differ significantly from one another (Table 1). Because Gorella, Acadia, Senga Sengana, Redcoat and Vesper yields did not differ significantly, the choice of cultivar to plant must be made on some other basis, such as fruit size, quality or season of maturity.

Redcoat is recommended for general planting in Nova Scotia, Prince Edward Island and New Brunswick. The information from these trials does not suggest the need for any change in this recommendation. Gorella performed well and is recommended because of its high yield potential. Unfortunately Gorella was found susceptible to mildew; but, with the use of proper fungicides, the disease can

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Table 1. Marketable crop of strawberries in pounds per acre.

Cultivar	Means for each station			Means for all stations			
	Kentville (1969, '70)	Charlottetown (1968, '69, '70)	Fredricton (1968, '69, '70)	1968	1969	1970	Mean
Gorella	13112a*	18711ab	16625ab	18065	18076	13959	16529a*
Redcoat	12689a	16364bc	15137abc	15446	18322	11342	14985a
Senga-Sengana	12362a	18526ab	14574bc	15975	16839	13853	15503a
Acadia	11356b	18064b	17074a	18672	15399	14863	16016a
Midway	10800c	14826c	13358cd	14112	15559	10418	13269b
Vesper	10132c	19844a	13105cd	16490	15423	13288	14889ab
K60-98	8380d	17738ab	11852d	17321	12566	11063	13191bc
Sparkle	7898d	11866d	12777cd	13673	11604	9190	11216c

*Yields in the same column followed by the same letter are not significantly different at the 5% level by Duncan's Multiple Range Test.

be controlled. It seems unlikely that any of the other cultivars tested will replace Redcoat as the most popular cultivar.

Per Cent of Crop Marketable

The per cent of the crop that was marketable varied little between locations and years. The poorest cultivar from this standpoint was Senga Sengana. It appeared to be very susceptible to botrytis fruit rot. It was noted that Senga Sengana in the 1969 Kentville trial was severely infected with botrytis fruit rot. Rain had fallen on July 11, 12, 13 and 14 and picking was delayed to July 15. The July 15 pick was large, but much of the Senga Sengana fruit was infected with botrytis fruit rot. Other cultivars harvested on the same date were not as badly infected.

Season and Fruit Size

The data on the per cent of the crop picked per week showed Acadia and Redcoat as early maturing; Midway and Gorella mid-season; Sparkle and Senga Sengana midseason to late and K60-98 and Vesper late season (Table 2).

The average berry size for all picks was recorded at Kentville in 1969 and 1970 and at Charlottetown in 1968, 1969 and 1970. Berry size was larger at Kentville with the exception of K60-98 and Vesper (Table 3).

Table 2. Per cent of total crop picked per week (average of 1969 and 1970 for Charlottetown, Fredericton and Kentville).

Cultivar	1st week	2nd week	3rd week	4th week
Acadia	31.9	48.1	18.1	1.9
Redcoat	30.2	47.7	18.0	4.1
Midway	18.9	45.6	27.3	8.2
Gorella	18.3	53.2	24.1	4.4
Sparkle	15.3	46.6	30.4	7.7
Senga-Sengana	7.8	43.2	40.7	8.3
K60-98	6.6	26.6	41.2	25.6
Vesper	2.0	25.3	44.5	28.2

Table 3. Strawberry fruit size.

Cultivar	Kentville, N.S. Avg. weight 1969, 1970 grams per berry	Charlottetown, P.E.I. Avg. weight 1968, 1969, 1970 grams per berry
K60-98	9.16	11.46
Vesper	8.96	9.87
Gorella	7.80	7.54
Redcoat	7.22	7.13
Midway	7.31	6.29
Senga Sengana	6.95	6.19
Sparkle	6.49	5.23
Acadia	5.87	5.46

Plant growth in the Charlottetown test plots was more vigorous than at Kentville. There were more plants per sq. ft. of soil. The competition for moisture and nutrients could account for the reduction of fruit size at Charlottetown.

Vesper and K60-98 are generally poor plant producers and seldom suffer from plant competition. In view of the yield data (Table 1) and the fruit size (Table 3), it appears that there was an ideal plant stand of Vesper and K60-98 at Charlottetown for maximum yield and fruit size expression.

Descriptions of Cultivars Listed in Order of Fruit Maturity

Acadia—Introduced by the Kentville Research Station in 1965. Very vigorous, productive, susceptible to foliar diseases. Berries medium to small, attractive; flesh medium firm, medium red, excellent quality.

Redcoat—Introduced by the Ottawa Research Station in 1957. Most important cultivar in Eastern Canada. Vigorous, productive, resistant to foliar diseases. Berries medium size, bright red; flesh medium firm, light red, fair quality.

Midway—Introduced by the U.S.-D.A. at the Maryland Agricultural Experiment Station in 1960. Only moderately vigorous in the regional trials; plants rather winter tender. Berries medium size, medium red, hull easily; flesh firm, light red, good quality.

Gorella—Introduced in Holland in 1960. Vigorous, very productive, susceptible to mildew. King berries very large; and rough, secondary berries; and others more uniform, bright red; flesh medium red, medium firm, good quality.

Sparkle—Introduced by the Experiment Station, New Brunswick, New Jersey in 1942. A cultivar that has been very popular in Eastern Canada, but now losing favor because of small berry size. Berries attractive, medium red, glossy; flesh light red, medium firm, good quality.

Senga Sengana—Introduced in Germany in 1954. Vigorous, very productive, resistant to foliar diseases. Berries susceptible to botrytis fruit rot, medium size, medium to dark red; flesh medium red, medium firm, fair quality.

K60-98—A Kentville seedling from the cross, Louise x Merrimack, selected in 1960. Vigorous but poor runner producers, resistant to foliar diseases. Berries large to very large, light to medium red, glossy, tender skin; flesh light red, medium firm, good quality.

Vesper—Introduced by the Experiment Station, New Brunswick, New Jersey in 1962. Moderately vigorous, very productive, susceptible to mildew and rather winter tender. Berries very large, medium glossy red; flesh light red, firm, fair quality.

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