'Saint-Pierre' Strawberry

Shahrokh Khanizadeh¹, Johanne Cousineau, Martine Deschênes, Audrey Levasseur, and Odile Carisse

Agriculture and Agri-Food Canada, Horticultural Research and Development Centre, 430 Gouin Boulevard, St-Jean-sur-Richelieu, QC, Canada, J3B 3E6

Jennifer DeEll

Ontario Ministry of Agriculture, and Food, 4890 Victoria Avenue N, Box 8000, Vineland Station, ON, Canada, L0R 2E0

Louis Gauthier

Les Fraises de l' Île d'Orléans Inc., St-Laurent, Île d'Orléans, QC, Canada, G0A 3Z0

J. Alan Sullivan

University of Guelph, Department of Plant Agriculture, Edmund C. Bovey Building, Guelph, ON, Canada, N1G 2W1

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'Saint-Pierre' is a new June bearing strawberry cultivar (*Fragaria xananassa* Duch.) bred for Eastern Central Canada and climates similar to Quebec conditions. 'Saint-Pierre' was released because of its very large, firm light red colored fruit (Fig. 1) that last several days after maturing (Khanizadeh, 1994). The fruit do not darken during storage and have a similar level of antioxidants (Gallic Acid, Protocatechuic A., Catechin, P-hydroxybenzoic A., Epicatechin, and Ellagic Acid) as other cultivars with good shelf life (Hébert et al., 2002). 'Saint-Pierre' is useful for growers who need to store fruit for several days before marketing.

This new cultivar was named for Saint-Pierre village located in Ile d'Orléans, Quebec. The area is well known for its production of horticultural crops, including strawberries. 'Saint-Pierre' was first licensed to Les Fraises de l'Ile d'Orléans, located in Saint-Pierre.

Origin

'Saint-Pierre', tested as SJ89264-6, is a progeny resulting from a cross between 'Chandler' and 'Jewel' made in 1989 by S. Khanizadeh (Fig. 2). 'Saint-Pierre' has been tested at the Agriculture and Agri-Food Canada substation in L'Acadie, Quebec since 1990, and at the Macdonald Campus of McGill Univ. in Ste-Anne-de-Bellevue during 1992–94. It was also evaluated from 1996–98 in controlled semi-commercial sites by our private partners Lareault, Les Fraises de l'Ile d'Orléans, Réseau d'Essais de Petits Fruits—CPVQ (Quebec Regional small fruit trials, Conseil des productions végétales du Québec) in Quebec and also in Europe by Meiosis

inflorescences per crown. They can tolerate winter temperatures below –30 °C (with 10 cm straw mulch cover). Petioles are 10–15 cm long with three large, light green, slightly cupped, shiny, and obtuse leaflets, each with 24–30 serrations. The terminal leaflets have a 1 length : 1 width ratio and the flowers are perfect.

'Saint-Pierre' produces attractive and very large, light red, shiny fruit (Tables 1 and 2). The fruit color tends to be yellowish red when the plants are grown in light soils. The fruit shape is globose to conic. The flesh is orange-red throughout and firm to very firm. Fresh fruit store well for up to 5 d at room temperature. European annual cultivar testing in Belgium reported similar observations on fruit color, shelf life, and firmness (Meiosis Annual Report, Kent, U.K.).

'Saint-Pierre' produced significantly lower yields than 'Kent' and 'Chambly' but was similar to the other cultivars tested. 'Saint-Pierre' is a late cultivar. The fruit started ripening 1–2 d before 'Bounty' at our substation in L'Acadie and the production peak was reached faster than that of 'Bounty' (Table 1).

Some symptoms of powdery mildew were noted on 'Saint-Pierre' plants especially during prolonged high humidity. However, plants appeared less susceptible to mildew than 'Bounty' and 'Kent'. 'Saint-Pierre' plants were as susceptible as

(Bradbourne House, Stable Block, East Malling, Kent, ME19 6DZ, U.K.) and Haberli AG nursery.

Description and performance

Plants of 'Saint-Pierre' are vigorous, have an upright growing habit, and produce 2–5

Fig. 1. Fruit, leaf, and flower of 'Saint-Pierre' strawberry.

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¹To whom reprint requests should be addressed. E-mail address: khanizadehs@em.agr.ca

Table 1. Yield distribution (g·m⁻¹ of row), total yield, fruit weight, ripening season, index of crop concentration, and earliness of 'Saint-Pierre' and comparison cultivars at the L'Acadie site.

Cultivar	Harvest ^z							Total yield (g·m ⁻¹) ^y	Wt/fruit (g) ^y	Ripening season ^x	Index of crop concn ^w	Index of earliness ^w
	1 (1)	2 (6)	3 (9)	4 (13)	5 (16)	6 (22)	7 (28)					
Kent	817	885	885	769	510	526	307	3901	9.6	M	0.6	2.5
Chambly	1182	931	972	650	524	313	---	3987	9.4	EM	1.2	2.9
Bounty	60	323	26	974	973	944	636	3266	9.7	L	1.0	1.6
Honeoye	1389	687	593	435	591	312	444	3340	8.0	EM	1.1	3.0
Saint-Pierre	86	194	1087	1587	588	468	---	3450	14.1	L	1.9	1.6
LSD _{0.05}								421	1.5		0.6	1.1

^zAverage of the number of times fruit were harvested during the season; the number in brackets is the average cumulative day after the first harvest from second year plantings in 1995–98.

^yAveraged over 4 years from second year plantings (1995–98), minimum of four replications per year, data taken from a 1-m long representative portion of a 2-m matted row (width = 50 cm).

^xL = late, LM = late-midseason, M = midseason, EM = early-midseason.

^wCalculated as described previously (Galletta et al., 1996; Khanizadeh and Fanous, 1992) using the Pedigree software (Khanizadeh and Prasher, 1997). A larger index indicates very concentrated ripening and early ripening for the index of crop concentration and index of earliness, respectively.

Fig. 2. Pedigree of 'Saint-Pierre' strawberry.

Table 2. Firmness, flavor, skin color, leaf disease susceptibility and shelf life of 'Saint-Pierre' and comparison cultivars at L'Acadie.^z

Cultivar	Firmness ^y	Flavor ^y	Skin color ^y	Leaf disease susceptibility ^y	Shelf life ^x
Kent	3.2	3.0	2.8	1.3	2.0
Chambly	3.6	3.3	3.8	3.9	3.0
Bounty	2.0	3.0	3.0	3.0	1.0
Honeoye	3.0	3.0	3.0	2.0	1.0
Saint-Pierre	4.0	4.0	2.0	1.9	5.0
LSD _{0.05}	0.4	0.7	0.3	0.7	3.0

^zAveraged over 5 years from second year plantings (1995–99), minimum of four replications per year, data taken from a 1-m long representative portion of a 2-m matted row (width 50 cm).

^yData were transformed to arcsin prior to analysis of variance (SAS Inst., 1988). Firmness: 1 = very soft, 5 = very firm; flavor: 1 = poor, 5 = excellent; skin color: 1 = very pale, 5 = dark red; leaf disease susceptibility: 1 = very susceptible, 5 = resistant. See Khanizadeh et al. (1994) for details on score evaluations.

^xNumber of days at room temperature for which the fruit were more than 95% marketable.

'Honeoye' to the six North American Eastern (NAE) races of *Phytophthora fragariae* (A1 to A6) based on the presence of red-stele and oospores in the root segments (Khanizadeh et al., 1997). 'Saint-Pierre' and 'Honeoye', at our substation in L'Acadie, had the same level of tolerance to *Diplocarpon earlina* Ell. & Ev., *Dendrophoma obscurans* Ell. & Ev. and *Mycosphaerella fragariae* (Tul.) Lindau, causal agents of leaf scorch, leaf blight, and leaf spot, respectively.

Area of adaptation and uses

'Saint-Pierre' is recommended for Eastern Central Canada, especially in areas where the climate is similar to that in the strawberry production areas of Quebec. Typically, strawberry production in Quebec occurs in areas with winter temperatures down to -30 °C and warm and humid summers with an unpredictable mixture of sun and rain (drought some seasons, constant rain other seasons). 'Saint-Pierre' plants perform very well in a matted

row system in sandy soils and are also adapted to growing in compact or heavy soils. The fruit is ideal for shipping because of its long shelf life.

Availability

A patent is pending for 'Saint-Pierre' and plants are presently available from licensed nurseries in Quebec. Nonexclusive multiplication licences can be obtained from Agriculture and Agri-Food Canada. European nurseries can obtain a multiplication licence from Meiosis (Bradbourne House, Stable Block, East Mallong, Kent ME19 6DZ). A limited number of plants are available for research purposes from the author (S.K.).

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