'SJM127' Apple Rootstock

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'SJM127' (St-Jean Morden 127) is a new rootstock resulting from a cross made in 1960 between *Malus baccata* 'Nertchinsk' and 'M.26' ('Malling 26' = M.16 × M.9). It is a new dwarfing apple rootstock developed at the Agriculture and Agri-Food Canada (AAFC) Research Station, St-Jean-sur-Richelieu, Quebec. It produces dwarf trees smaller than 'M.26' but larger than 'Malling 9' (M.9). It was released because of its superior hardiness and similar cropping efficiency compared with 'M.26' and less suckering compared with 'M.9'. 'McIntosh VC309' was budded on 'SJM127' in 1971 and planted in 1974 at Frelighsburg, Quebec, where it was evaluated until 1984 for hardiness, tree size, and efficiency (Granger et al., 1991) along with other SJP84 and SJM series rootstock selections (Khanizadeh et al., 2003, 2007). 'SJM127' was planted in 1997 in replicated trials in several plots at the Frelighsburg, Quebec, and L'Acadie, Quebec, substations and also at one grower site (Khanizadeh et al., 2000, 2005).

Description of Self-rooted Trees

Own-rooted trees are very prolific and began flowering in L'Acadie, Quebec, on 13 May compared with 'M.26', which began flowering on 23 May. The color of the buds in full balloon is medium pink (RHS 58A) (Royal Horticultural Society, 1995), pedicels are green, and flowers are single with an average of 4.2 cm diameter. Petals are overlapped, broad elliptic or ovate, and white with a slight blush of medium pink (RHS 58A).

The mature leaves are very large with a length between 8.5 and 10.5 cm, width between 4.9 and 6.2 cm, and a mean length to width ratio of 1:8. The leaves are dark green, dull on the upper side, and glabrous on the lower side with a downward orientation. Petioles are between 1.9 and 2.4 cm long and the shape of the apex is cuspidate with serrated margins.

The internode length of reddish brown dormant 1-year-old shoot is 16 mm thick at the middle third of the shoot with numerous large lenticels and weak flexibility.

Fruit are very small (11 g) with 2.5 to 3.2 cm diameter, flat to flat-globose, mainly symmetrical with medium ribbing (Fig. 1.). Fruit crowning is absent and the eye is medium size, half open and the calyx is persistent with large overlapped lobes at the base. The basin is very shallow and the stalk is thin (0.8 to 1.4 mm), very long (2.2 to 3.1 cm), and the cavity is shallow and narrow. The skin is smooth covered (40% to 60%) with a solid and faded pinkish red (RHS 53B) over a milky yellow and orange-yellow ground color (RHS 12B) with a very low to absent amount of russet around the stalk cavity. The lenticels are inconspicuous and small and the fruit flesh is yellowish.

Propagation (Stool Bed)

In the stool bed, 'SJM127' produces an average of four to five shoots per plant (Fig. 2) similar to M.26 and M.9. Average

Fig. 1. Fruit of 'SJM127' rootstocks.

Fig. 2. Stoolbed of 'SJM127' (in the foreground).

shoot diameter is 6 mm and length of shoots is on average 61 cm.

Diseases and Pests

'SJM27' is resistant to woolly apple aphid (*Erisoma lanigerum*) and has similar susceptibility to the two races of *Erwinia amylovora* and four races of *Phytophthora cactorum* (Leb. & Cohn) Schroet. compared with 'M.26' and 'O.3' rootstocks (Carisse and Khanizadeh, 2006).

Performance in the orchard. The performance of 'SJM127' using 'McIntosh Summerland' as a scion has been monitored since 1997 in a commercial orchard located in Mont-St-Grégoire, Quebec. 'SJM127' produced smaller trees compared with 'M.26' but larger than 'M.9', and the tree grafted on 'SJM127' had similar yield efficiency compared with 'M.26' and 'M.9' (Khanizadeh et al., 2005). 'SJM127' produces fewer suckers than 'M.9', but the differences were not significant.

Availability

A Canadian Plant Breeder's Right has been issued, and limited quantities of indexed bud wood are available for research purposes (universities and research stations) from the Canadian Food Inspection Agency, Shahrokh Khanizadeh (North America) or from Meiosis Inc. (Europe) by written request. Interested nurseries may inquire about "nonexclusive licenses" directly from AAFC or Meiosis Inc. (<http://www.meiosis.co.uk>).

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