‘AC Haroblush’ Apricot

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‘AC Haroblush’ apricot (Prunus armeniaca L.), is a mid-season fresh market apricot released in 2000. This flavorful, attractive, medium-size apricot is productive, cold hardy, disease resistant, and suitable for the Ontario fresh market and commercial shipping. ‘AC Haroblush’ was tested as HW441 by members of the former Western Ontario Fruit Testing Association (WOFTA) and by members of the former New York State Fruit Testing Cooperative Association (NYSFTCA), and it appears to be adapted to regions where ‘Goldcot’ and ‘Veeicot’ are successfully grown. This new cultivar, developed by Agriculture and Agri-Food Canada at Harrow, Ontario, Canada (AAFC–Harrow), is recommended by the Ontario Tender Fruit Producers’ Marketing Board (OTFPMB) for trial planting in Ontario. ‘AC Haroblush’ has also been tested in the Rhône Valley, France, by Star Fruits. ‘AC Haroblush’, together with ‘AC Harojoy’ (Layne and Hunter, 2003a) and ‘AC Harostar’ (Layne and Hunter, 2003b), are the latest introductions from the AAFC apricot breeding program formerly located at Harrow.

Description

Trees of ‘AC Haroblush’ are vigorous and semi-erect. Young shoots have strong anthocyanin coloration on the tips. One-year-old shoots are of medium vigor with very few laterals, and a medium number of conspicuous lenticels. Leaves are large and medium green on the upper surface. The shape of the leaf base is truncate, the leaf tip is acuminate, and the angle of the tip is broadly acute. The leaf margin is biserrate and undulation of the margin is slight. In a sample of 30 leaves taken from the mid-point of 30 randomly selected shoots in mid-summer of 1995, leaf blades were 83.4 ± 8.2 mm long and 71.7 ± 7.1 mm wide, and leaf petioles were 33.5 ± 4.5 mm long and 1.7 ± 0.2 mm thick. There is strong anthocyanin coloration of the upper surface of the petiole, weak anthocyanin coloration of the lower surface, and typically two to three medium-sized, globose, petiolar glands.

Flower buds are borne predominantly on short spurs. Flower bud density is high. Flowers are small, with pink circular petals on short spurs. Flower bud density is high. Flowers are small, with pink circular petals on short spurs. Flower bud density is high. Flowers are small, with pink circular petals on short spurs. Flower bud density is high.

Performance

In a replicated orchard planted at AAFC–Harrow, ‘AC Haroblush’ was compared from 1988 to 1995 with ‘Veeicot’, ‘AC Harostar’, and ‘Harogem’, all of which ripen within a few days of each other (Table 1). ‘AC Haroblush’ with ‘Veeicot’ and ‘Harogem’ ranked first for tree vigor. ‘AC Haroblush’ ranked first for winter hardiness. ‘AC Haroblush’ was more resistant to perennial canker (Leucostoma sp.) and bacterial fruit spot [caused by Xanthomonas campestris pv. pruni (Smith) Dye], and was equally as resistant as the other three cultivars to bacterial leaf spot (also caused by X. campestris pv. pruni). Productivity was equal to ‘Harogem’ and superior to ‘Veeicot’ and ‘AC Harostar’. Ripening uniformity was equal to ‘AC Harostar’ and superior to ‘Veeicot’ and ‘Harogem’. Fruit size was equal to ‘AC Harostar’ and ‘Harogem’ and greater than ‘Veeicot’. Fruits of ‘AC Haroblush’, ‘Veeicot’, and ‘AC Harostar’ were equally attractive but less attractive than ‘Harogem’. Fruit blush was equal to ‘Harogem’ and greater than ‘Veeicot’ and ‘AC Harostar’. Flesh of ‘AC Haroblush’ was softer than the other three cultivars. For all four cultivars, fruit flesh did not adhere to the pit. Flavor of ‘AC Haroblush’ was rated superior to ‘Veeicot’ and equal to ‘AC Harostar’ and ‘Harogem’. Overall performance for the 13 rated characteristics resulted in ‘AC Haroblush’ having the highest score followed, in descending order, by ‘Harglow’, ‘AC Harostar’, and ‘Veeicot’. The picking dates of these four cultivars will overlap to some extent, ‘Veeicot’ being the first to ripen, followed by ‘AC Haroblush’, ‘AC Harostar’, and ‘Harogem’. ‘AC Haroblush’ did not fruit set.
not exhibit any serious faults that would hamper its commercial acceptance in Ontario. Skin cracking and brown rot [Monilinia fructicola (Wint. Honey)] were observed only in 1992, an unusually wet growing season, and even then, the incidence level was low. Preharvest drop was not a problem in any of the 8 years of testing.

Raw product tests carried out in 1995 with pulp of ‘AC Haroblush’ showed that soluble solids content was 12.6 °Brix, pH was 3.59, and titratable acidity (% citric) was 1.19; corresponding values for ‘Veecot’, the laboratory standard, were 11.7 °Brix, pH 3.53, and titratable acidity 1.32.

In 1990, ripened fruits of 10 cultivars and advanced test selections (including ‘AC Haroblush’) were processed as canned halves in 40% (w/v) syrup and as puree with 20% (w/w) granulated sugar. In masked identity taste panels, four trained panellists ranked for both ‘Veecot’ and ‘Goldcot’, which were used as reference standards. Thus, ‘AC Haroblush’ is not considered suitable for home processing.

Controlled freezing tests carried out on dormant, fully acclimated shoots of ‘AC Haroblush’ using a standard protocol (Layne and Gadsby, 1995) showed that in 4 of the 6 years, ‘AC Haroblush’ was as bud hardy as ‘Goldcot’. The 6-year (1989–94) average T50 for flower buds of ‘AC Haroblush’ was –27.7 °C, while the average for ‘Goldcot’ was –29.4 °C. Wood hardiness of ‘AC Haroblush’ was equal to ‘Goldcot’ in 5 of the 6 years and was less hardy than ‘Goldcot’ in only 1 year. The 6-year average T50 for shoot xylem was –34.6 °C for ‘AC Haroblush’, and –35.3 °C for ‘Goldcot’. Layne and Gadsby (1995) reported that ‘AC Haroblush’ was in the same hardiness class as ‘Goldcot’ for both flower buds (T50 ≥ –27.8 °C) and shoot xylem (T50 ≥ –35.0 °C).

Thus, ‘AC Haroblush’ should be adapted to the cooler areas in southern Ontario, Canada, and the neighboring U.S. states near the Great Lakes basin where ‘Goldcot’ is successfully grown.

Based on tree performance, fruit quality, and winterhardiness evaluations, ‘AC Haroblush’, together with ‘AC Harojoy’ and ‘AC Harostar’, which are being introduced at the same time (Layne and Hunter, 2003a; 2003b), will provide growers with additional opportunities for supplying the mid-season apricot market.

Availability

In testing carried out at the Canadian Food Inspection Agency’s Centre for Plant Health, Sidney, B.C. (CPH–Sidney), ‘AC Haroblush’ was found to be free of all known viruses, virus-like agents, viroids, and phytoplasmas using an internationally approved range of woody and herbaceous host biological indicators, and by serological and molecular methods (D. Thompson, personal communication). Trees propagated from virus-free budwood have been planted in the Canadian Clonal Gene Bank at AAFC-Harrow. In annual monitoring at AAFC-Harrow, these budwood trees have been tested free of prunus necrotic ringspot virus, prune dwarf virus, and tomato ringspot virus using herbaceous (cucumber) and woody (‘Shirofugen’ cherry) indicators. Limited quantities of virus-tested budwood are available from AAFC-Harrow and CPH–Sidney.

Testing of ‘AC Haroblush’ is subject to signing a non-propagation testing agreement with AAFC–Harro. Information on commercialization licenses in Canada and the United States can be obtained by contacting the Director, Agriculture and Agri-Food Canada, Greenhouse and Processing Crops Research Centre, Harrow, Ontario N0R 1G0, Canada. ‘AC Haroblush’ has been protected in the European Union on behalf of Agriculture and Agri-Food Canada by Star Fruits, Route d’Orange, 84860 Caderousse, France, to whom inquiries for commercial propagation of ‘AC Haroblush’ in the European Union should be directed.

Literature Cited

Layne, R.E.C. 1978. ‘Harocot’ apricot. HortScience 13:64–65.
Layne, R.E.C. 1984. ‘Harglow’ apricot. HortScience 19:136–137.
Layne, R.E.C. and M.F. Gadsby. 1995. Determination of cold hardiness and estimation of potential breeding value of apricot germplasm. Fruit Var. J. 49:242–248.
Layne, R.E.C. and T.B. Harrison. 1975. ‘Haggith’ apricot. Rootstock seed source. HortScience 10:428.
Layne, R.E.C. and D.M. Hunter. 2003a. ‘AC Harojoy’ apricot. HortScience 38:138–139.
Layne, R.E.C. and D.M. Hunter. 2003b. ‘AC Harostar’ apricot. HortScience 38:140–141.

Table 1. Long-term performance of ‘AC Haroblush’ at Harrow, Ontario, Canada, compared with Veecot, AC Harostar, and Harogem (1988–95).*

| Characteristics evaluated | Veecot | AC Haroblush | AC Harostar | Harogem |
|---------------------------|--------|--------------|-------------|---------|
| Mean cultivar rating*     |        |              |             |         |
| Tree vigor                | 7      | 10           | 7           | 8       |
| Winter hardiness          | 7      | 10           | 7           | 8       |
| Perennial canker          | 8      | 10           | 7           | 8       |
| Bacterial leaf spot       | 9      | 9            | 9           | 9       |
| Bacterial fruit spot      | 8      | 9            | 7           | 7       |
| Productivity              | 5      | 6            | 5           | 6       |
| Ripening uniformity       | 6      | 7            | 7           | 6       |
| Fruit size                | 6      | 7            | 7           | 7       |
| Attractiveness            | 7      | 7            | 7           | 8       |
| Blush                     | 1      | 5            | 4           | 5       |
| Flesh firmness            | 8      | 7            | 8           | 8       |
| Flesh adherence to pit    | 10     | 10           | 8           | 9       |
| Flavor                    | 6      | 7            | 7           | 7       |
| Total score               | 89     | 102          | 94          | 96      |
| Mean ripe date            | 21 July| 22 July      | 23 July     | 25 July |

*Ratings were subjective on a scale of 1 (least desirable) to 10 (most desirable). Ratings of 1 to 4 except for blush are considered unacceptable for a commercial cultivar; ratings of 5 and 6 are commercially acceptable; while ratings ≥7 indicate a good to excellent level of performance.

Means for three single-tree replicates planted in a completely random design.