‘AC Harrow Fair’ Peach

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‘AC Harrow Fair’ peach [*Prunus persica* (L.) Batsch] was released for the Ontario fresh market in 1996. ‘AC Harrow Fair’, a mid-season peach that ripens 6 days after ‘Redhaven’, is cold hardy and disease resistant, productive, bears attractively colored fruit of desirable size and quality, and is likely suitable for long-distance shipping. This cultivar was recommended for commercial introduction in Canada by members of the Western Ontario Fruit Testing Association (WOFTA) on the basis of generally favorable performance in regional trials in southern Ontario conducted by WOFTA. ‘AC Harrow Fair’ likely is adapted to northern regions where ‘Redhaven’ is grown successfully. An application for Plant Breeders Rights in Canada was submitted in 1995 (application no. 95–646). The agent in Canada for ‘AC Harrow Fair’ is Inter-Plant Patent Marketing, Niagara-on-the-Lake, Ontario.

Origin

‘AC Harrow Fair’, tested as HW259, resulted from a controlled cross between ‘Biscoe’ x V55061 (Fig. 1) made at the Harrow Research Centre in 1978. Selected as a hybrid seedling in 1982, ‘AC Harrow Fair’ was propagated by budding on peach seedling rootstocks and advanced testing began in 1984 at the Ridge Farm of the Harrow Research Centre. Propagation for regional trials in cooperation with WOFTA began in 1986, and test trees were planted in regional trials beginning in 1988 under the designation HW259. The name ‘AC Harrow Fair’ honors the Colchester South and Harrow Agricultural Society, the sponsors of an annual agricultural fair in Harrow, Ontario, since 1854. ‘AC Harrow Fair’ is genetically stable and uniform.

Description

Trees of ‘AC Harrow Fair’ are vigorous, semi-erect with medium to wide crotch angles. The bark is reddish-brown in summer, acquiring a silvery sheen in winter. Based on samples taken from the midpoint of 30 randomly col-

lected shoots, leaves, lanceolate in shape and medium to dark green, are ≈ 136 mm long (excluding the petiole) and ≈ 33 mm wide.

Leaves are upfolded rather than flat, recurved downward at the tips, and leaf margins are serrulate. Leaf petioles are of medium length, typically 9 mm, with two reniform-shaped petiolar glands near the leaf blade. Flowering shoots have medium anthocyanin coloration in midsummer and a high density of flower buds, usually two per node.

Flowers are nonshowy with small, elongated, dark pink petals without striping. Stamens are equal in length to petals, and the stigma is at the same level as the anthers. Anthers produce abundant pollen.

Fruit of ‘AC Harrow Fair’ mature in mid-season, 6 days after ‘Redhaven’ and 6 days

before ‘Harrow Beauty’. Because fruit ripen uniformly, the picking season of ‘AC Harrow Fair’ is short, two or at most three harvests during a 7-day period. Fruit are attractive in color and shape, medium to large, obovate, dimpled at the blossom end, and slightly asymmetric (Fig. 2). The suture is not prominent and the stem cavity is of medium depth and width. Average fruit size, based on a random sample of 30 firm-ripe fruit, was ≈ 68 mm long, ≈ 68 mm wide, and individual fruit weighed ≈ 177 g, while the stone weight was ≈ 4 g. Ground color of the skin when ripe is bright yellow. A uniform, bright red blush covers $\approx 80\%$ of the fruit surface. Pubescence on the skin is short and of low density. The skin adheres strongly to the flesh. The yellow, melting flesh is firm and very lightly streaked with anthocyanin pigments directly under the skin, in the flesh, and around the stone. Flesh texture is smooth and juicy, and there is a good flavor balance between sweetness and acidity. In our judgment, the overall fruit quality is rated good to very good for the season. The small to medium-sized stones are tan, elongated, deeply grooved and pitted, and do not adhere to the flesh. There is a very low incidence of split or shattered stones.

‘AC Harrow Fair’ can be distinguished from ‘Harson’, the cultivar it most closely resembles, by its smaller leaves, higher density of flower buds, later blooming habit, and longer bloom period. In addition, flowers are smaller and petals are darker pink than ‘Harson’. ‘AC Harrow Fair’ fruit ripen 11 days later than ‘Harson’, and fruit shape is obovate while ‘Harson’ is more rounded. Fruit shape along the suture is asymmetric for ‘AC Harrow Fair’ and symmetric for ‘Harson’. The stem cavity of the fruit is shallower and broader for ‘AC Harrow Fair’ than for ‘Harson’. There is more anthocyanin pigmentation on the skin of ‘AC Harrow Fair’ fruit than for ‘Harson’. Stones of ‘AC Harrow Fair’ are smaller than those of ‘Harson’ and there is a lower proportion of shattered stones.

Fig. 1. Pedigree of ‘AC Harrow Fair’ peach.

Fig. 2. Fruit of ‘AC Harrow Fair’ peach (scale in centimeters).

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Table 1. Mean 10-year performance of 'AC Harrow Fair' peach compared with 'Harson', 'Redhaven', and 'Harbrite' (1986-95).^z

Characters evaluated	Mean cultivar rating ^y			
	Harson	Redhaven	Harbrite	AC Harrow Fair
Tree vigor	7	7	7	7
Winter hardiness	8	8	8	8
Perennial canker	8	8	9	8
Bacterial leaf spot	9	8	9	9
Bacterial fruit spot	9	8	9	9
Productivity	5	6	6	5
Ripening uniformity	7	6	7	7
Fruit size	8	7	7	8
Attractiveness	7	7	7	7
Blush	7	7	7	7
Flesh firmness	7	7	7	7
Flesh adherence to pit	7	7	7	7
Red pigment in flesh	8	7	7	8
Flavor	7	7	6	7
Split pits	8	8	8	10
Total score	112	108	111	114
Mean ripe date (August)	9	13	15	19

^zRatings were subjective on a scale of 1 (least desirable) to 10 (most desirable). Ratings of 1 to 4 are considered unacceptable for a commercial cultivar, 5 and 6 are commercially acceptable, while ratings ≥ 7 indicate a desirable level of performance.

^yMeans of three replications. Cultivars were tested in a completely random design at the Ridge Farm of the Harrow Research Centre.

Performance

Performance of 'AC Harrow Fair' was compared with three other midseason cultivars: 'Harson', 'Redhaven', and 'Harbrite' (Table 1). On the basis of the 15 characters evaluated, 'AC Harrow Fair' performed best overall (score = 114), 'Redhaven' was lowest (score = 108), while 'Harson' and 'Harbrite' were intermediate, having total scores of 112 and 111, respectively. 'AC Harrow Fair' had ratings ≥ 7 for 14 of the 15 characters evaluated, indicating a desirable level of performance for these characters. 'Harson' had such ratings for 14 characters, while 'Harbrite' and 'Redhaven' each had such ratings for 13. The only rating that indicated an intermediate level of performance was productivity: 'AC Harrow Fair' and 'Harson' had the same intermediate rating (5), while 'Redhaven' and 'Harbrite' had a slightly higher rating. The productivity ratings were reduced because a winter minimum of -27.5°C that occurred 19 Jan. 1994 resulted in all four cultivars having

no crop at harvest (rating = 1). These four cultivars in most other years had productivity ratings of ≈ 7 . Fruit of 'AC Harrow Fair' was the last to ripen of the four cultivars being compared and ripened 6 days later than 'Redhaven'. The picking season of 'AC Harrow Fair' did not overlap that of 'Harson', which ripened 10 days earlier. However, in normal years it could overlap with the second pick of 'Harbrite' and the third and later pickings of 'Redhaven'. In summary, 'AC Harrow Fair' had no serious faults, but appeared to be sufficiently vigorous, cold hardy, disease resistant, and productive to be adapted to northern areas where 'Redhaven' is successfully grown. 'AC Harrow Fair' is a promising cultivar to follow 'Harbrite' in the peach maturity sequence and to precede 'Harrow Beauty' by 6 days.

Controlled freezing tests (data not shown) were conducted annually from 1990 to 1993 using a standard protocol (Layne, 1992). Flower buds of 'AC Harrow Fair' were as hardy as those of 'Redhaven', the average T_{50}

being -26.7°C . Shoot xylem of 'AC Harrow Fair' was also equally hardy as that of 'Redhaven', the average T_{50} being -29.8°C . 'AC Harrow Fair', therefore, likely is adapted to northern areas where 'Redhaven' is successfully grown. Flower buds of 'AC Harrow Fair' and 'Redhaven' were typically 3°C less hardy than corresponding shoot xylem (Layne, 1992).

In 1995, the pulp of 'AC Harrow Fair' had soluble solids concentration of 9.7%, pH = 3.57, and titratable acidity (% citric) = 0.81%. Polyphenol oxidase and nitroso tests (Kader and Chordas, 1984) were carried out to determine flesh browning potential. 'AC Harrow Fair' had moderate flesh browning potential, equal to 'Harson' and slightly higher than 'Redhaven' and 'Harbrite'. In 1990 processing tests, 'AC Harrow Fair' had good processing quality as canned halves in 35% sucrose syrup, and was ranked superior to 'Harbrite', 'Harson', and 'Redhaven', respectively. When preserved as frozen slices in 14% sugar syrup, 'AC Harrow Fair' also had good processing quality and was ranked higher than 'Harbrite', 'Harson', and 'Redhaven', respectively.

Availability

In specifically designated countries, including North America, Inter-Plant Patent Marketing is responsible for the registration, protection, and sublicensing of 'AC Harrow Fair'. In the European Union, responsibility for protection and sublicensing of 'AC Harrow Fair' rests with Star Fruits, 14 les Genêts d'Or, 84430 Mondragon, France. Virus-tested budwood of 'AC Harrow Fair' is maintained at the Harrow Research Centre and also at the AAFC Centre for Plant Health, 8801 East Saanich Rd., Sidney, B.C. V8L 1H3, Canada.

Literature Cited

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