

Evaluation of Peach and Nectarine Cultivars for Massachusetts Orchards

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As Massachusetts apple growers face increasing competition from producers worldwide, they are turning to retail sales to maintain or enhance their economic viability. Additionally, the popularity of new apple cultivars has contributed to the decline in market share for McIntosh, the major variety.

As an alternative to apples, Western Massachusetts growers have been especially successful with peaches. They rarely lose a crop to cold or frost injury, and have a clientele base that is looking for local, tree-ripened fruit. Central and Eastern Massachusetts retail growers also grow peaches, but these areas have been more likely to experience partial or full crop losses due to spring frosts. These growers, then, are constantly searching for hardier cultivars.

For most retail growers, the decision to grow or add additional peaches is an easy one. Choosing cultivars is more difficult. In an effort to assist Massachusetts growers with cultivar choices, a cultivar trial was established at the University of Massachusetts Horticultural Research Center (HRC), included Flower bud hardiness, fruit size, harvest season, and fruit quality have been evaluated.

The first trees in the cultivar evaluation trial were planted in 1990, and cultivars were added in 1998, 1994, and 1996. Trees were purchased from commercial nurseries and planted in a 10' x 20' spacing. Four-tree plots of each cultivar were used. Trees were managed as in commercial plantings.

Results

Cultivars included in the trial are listed in Table 1 was evaluated following a test winter of 1993-4 during which a low of -15EF was recorded at Quabbin Reservoir (approx. 1.5 miles

north of the HRC). On 4 May 1994, I evaluated bloom visually on all trees that were planted in 1990. I estimated bud survival on the top and bottom (below 4 feet) half of each tree. Table 2 lists cultivars that averaged more than 30% bud survival. From these results it appears that Madison has relatively hardy flower buds. Although most of the trees in the 1990 planting began fruiting in 1991 or 1992, data recorded from 1991-96 is incomplete. Fruit quality was evaluated yearly, and yield data is available for several cultivars during this time, however.

In 1997, at least one 10-fruit sample per cultivar (except the 1996 planting) was weighed, measured, and judged for quality. Table 3 lists the most promising cultivars based on size, as well as average weight, average size, and harvest date.

Recommendations

Of the yellow-fleshed cultivars that met the three-inch size criterion determined by growers, eight also met the criteria for quality: Bounty, Encore, Fayette, Flavorcrest, JimDandee, Madison, Salem, and Sentry. Although the size and quality assessments of both Fayette and Encore were very favorable, the harvest timings of both cultivars very likely are too late for the majority of growers whose main crop is apples. Summer Pearl was the only white-fleshed peach that met size and quality criteria. It is 75% + red to dark red; firm, juicy, with sweet, melting flesh. Of the nectarines evaluated, Earlisscarlet and Fantasia have both consistently maintained heavy yields, good size, excellent color and exceptional fruit quality.

Of the cultivars that met the size criterion, but did not meet quality standards in 1997, several have shown promise in other years:

Table 1. List of cultivars by years planted in the Massachusetts Peach Cultivar Evaluation Trial.

Cultivar	Year planted	Ripening date relative to Redhaven	Type*
Jerseydawn	1990	-5	Y
Redhaven		0	Y
Salem		+6	Y
Summer Pearl		+20 ⁺	W
Flavorcrest		+20	Y
Newhaven		+2	Y
Madison		+24	Y
Earliscarlet		-10	N
Fantasia		+31	N
Redgold		+29	N
Summer Beaut		+4	N
Bounty			
Encore		+36	Y
Fayette		+30 ⁺	Y
Harcrest		+26 ⁺	Y
NJ 275 (Ernie's Choice)		+9 ⁺	Y
Harrow Beauty		+21 ⁺	Y
Jim Dandee		+8 ⁺	Y
Earlired	1993	-19	Y
Beekman		+20	Y
JohnBoy		+4	Y
Sentry		-12	Y
Mt. Rose		+15 ⁺	W
Lady Nancy		+31 ⁺	W
Red Rose		+15 ⁺	W
Sugar Lady	1994	+11	W
White Lady		+15	W
Easternglo		-10	N
Sunglo		+12	N
PF-1 (Flaming Fury Series)	1996	-20	Y
PF-15A		+13	Y
PF-17A		+17	Y
Raritan Rose		+4	W
Arctic Glo		-10	WN
Arctic Rose		+7	WN
Arctic Queen		+28	WN

*N = yellow-fleshed nectarine; Y = yellow-fleshed peach; W = white-fleshed peach; WN = white-fleshed nectarine.

Table 2. Percentage bud survival, averaged over four trees per cultivar.

Cultivar	Lower	Upper
Flavorcrest	25%	75%
Newhaven	10%	75%
Earliscarlet	10%	50%
Fantasia	10%	60%
Redgold	40%	60%
Summer Beaut	10%	60%
Madison	75%	90%
Harcrest	10%	60%

Table 3. Average size, size range, average weight, percentage of split pits, and harvest dates for more promising cultivars.

Cultivar	Diameter (in.)	Fruit weight (g)	Splits (%)	Harvest date
Jerseydawn	2.9	195	40	14 Aug.
Sentry	3.1	278	50	4 Aug.
Earliscarlet	2.9	202	22	15 Aug.
Newhaven	2.9	205	0	19 Aug.
Flavorcrest	3.0	209	20	19 Aug.
Bounty	3.1	278	10	27 Aug.
Salem	3.1	255	20	26 Aug.
Jim Dandee	3.2	261	20	26 Aug.
Sugar Lady	3.0	231	0	26 Aug.
Mt. Rose	3.0	217	0	26 Aug.
White Lady	3.0	227	10	27 Aug.
Red Rose	3.0	235	0	4 Sept.
Beekman	2.9	234	0	4 Sept.
Lady Nancy	3.1	232	0	10 Sept.
Madison	3.2	259	20	15 Sept.
Fantasia	3.0	273	10	15 Sept.
Sum. Pearl	2.9	224	0	15 Sept.
Harcrest	2.9	207	10	15 Sept.
Redgold	3.0	267	22	15 Sept.
Encore	3.1	256	0	1 Oct.
Fayette	3.1	252	0	25 Sept.

Newhaven, Sugar Lady, White Lady, Mt. Rose, Harcrest, Redgold, and Summer Beaut.

Trees in the 1993 planting did not do well. They were planted late, and suffered from a dry, hot summer. Trees of four of the cultivars in this planting were replanted in 1996, and should bear enough fruit for evaluation in 1998. JohnBoy is one cultivar that should perform well.

Data from the 1990 planting will be collected for at least one more year. Because the demand for peaches and nectarines has been high at the Horticultural Research Center farmstand, these trees will most likely remain

until other, commercial, plantings come into production. Cultivars from all plantings should bear fruit in 1998, and data will be collected for at least two more seasons from the 1993, 1994, and 1996 plantings.

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