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'Harvester' Peach

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Crop Production

The 'Harvester' Peach

The North Louisiana Agricultural Experiment Station (now known as the Calhoun Research Station) at Calhoun, LA was founded in 1888 and has been involved with cultivar testing and development of improved cultural practices for peaches since 1889. A breeding program to develop superior peach cultivars was initiated in 1951 as a cooperative effort between the Louisiana State University Department of Horticulture at Baton Rouge, LA and the Calhoun Research Station. The Calhoun Research Station would develop high chill requirement cultivars (700+ hr. below 7°C) and the Idlewild Station located at Clinton, LA was used as a site to test and develop medium chill requirement peach cultivars (400-700 hr. below 7°C).

The objective of the Louisiana breeding program has been to develop well adapted, disease-resistant cultivars that crop consistently. The program has concentrated on the fruit quality attributes of size, attractiveness, flavor, and shipping quality. The first controlled crosses in the breeding program were made in 1953. The first years of the program were plagued by poor weather, with partial or complete losses due to late spring freezes occurring in 1954-1956. Good weather returned and controlled crosses over the next five years led to the release of six peach cultivars including 'Harvester.'

The breeding program has succeeded in supplying the industry with many new cultivars that produce quality fruit in the Louisiana climate. Growers across the southern United States have also greatly benefited from this program. The most recent Louisiana peach tree survey listed over one hundred peach cultivars planted in the state (2). Eight of the ten most planted cultivars were developed by the Louisiana Agricultural Experiment Station breeding program. The peach breeding program has released twenty-one peach cultivars (Table 1). The first releases occurred in 1965 (LaPremiere and LaGem) and the most recent releases were in 1992 (Delta, GaLa, Glory, and Regal). Five breeders have been involved in the breeding program since its inception in 1951. These include P. L. Hawthorne (1951-1978), J. C. Taylor (1951-1980), J. E. Boudreaux (1981-1985), C. E. Johnson (1980-present), and C. J. Graham (1995-present).

'Harvester,' one of the most extensively planted freestone peach cultivars in the southern United States, is the most notable of many contributions to peach growing made by Professor J. C. Taylor and the late Professor P. L. Hawthorne. The release of 'Harvester' in 1973 (5) provided the peach industry with the earliest freestone cultivar that combined consistency of cropping, uniform size and shape, firmness for shipping, attractive color, and excellent flavor. 'Harvester' has also shown great adaptability and is routinely planted in areas receiving significantly more or less chilling than its 750 hour (below 7°C) requirement. Because of its major impact on commercial peach production in North America, 'Harvester' was awarded the Outstanding Fruit Cultivar Award in 1998 by the Fruit Breeding Working Group of the American Society for Horticultural Science. The medal is in-

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Table 1. Peach cultivars released by the Louisiana Agricultural Experiment Station.

Cultivar	Selection Number	Year Released	Chill Hours (hrs < 7°C)	Maturity (+/– Elberta)	Pedigree
LaPremiere	L9-5-92	1965	1050	–12	Redglobe X Prairie Rose
LaGem	L9-8-10	1965	850-900	–35	Redglobe X Redskin
LaGold	L3-16-16	1967	700-750	–25	Redhaven o.p.
LaRed	L1-2-39	1967	850-900	–12	Redskin X Southern Glow
Harvester	L61-2-42	1973	750	–23	Redskin X Southern Glow
Surecrop	L59-12-1	1973	1000	–45	Redglobe X Dixired
Bicentennial	L66-1-1	1977	750	–51	LaGold X Redglobe
Majestic	L63-4-5	1979	800-850	–16	Meadowlark o.p.
La Feliciana	L1-81-23	1980	550-600	–19	L5-20-18 o.p.[1]
Ouachita Gold	L65-10-63	1981	800-850	+11	LaGold X L61-2-26[2]
Ruston Red	L71-5-4	1982	800-900	– 5	LaPremiere X L63-3-29[3]
Idlewild	L71-A73-30	1983	500-600	–33	La Feliciana o.p.
La Festival	L71-A73-3	1984	400-500	–20	La Feliciana o.p.
La Pêcher	L71-A72-23	1984	400-500	–39	La Feliciana o.p.
La White	L71-A64-42	1984	600-700	–27	L69-66-50 o.p.[4]
La Jewel	L9-6-4	1987	850	+15	Redglobe X Prairie Rose
Hawthorne	L71-A10-l0	1988	650	–20	Ll-27-13 o.p.[5]
Regal	L77-2-79	1992	700	–54	Harvester X Surecrop
Delta	L9-A47-33	1992	550	–49	L65-7-49 o.p.[6]
GaLa	L72-3-8	1992	750	–33	Harvester o.p.
Glory	L73-1-32	1992	800	– 2	LaPremiere X L61-3-5[7]

[1]L5-20-18 = Dixigem o.p.; [2]L61-2-26 = Redskin X Southern Glow; [3]L63-3-29 = Prairie Rose X L60-4A-14 (=Redglobe o.p.); [4]L69-66-50 = Nectar o.p.; [5]L1-27-13 = L9-10-40 (=Southern Glow op.); [6]L65-7-49 = LaGold X L61-3-49 (=Redskin X Cardinal); [7]L61-3-5 Redglobe X Cardinal.

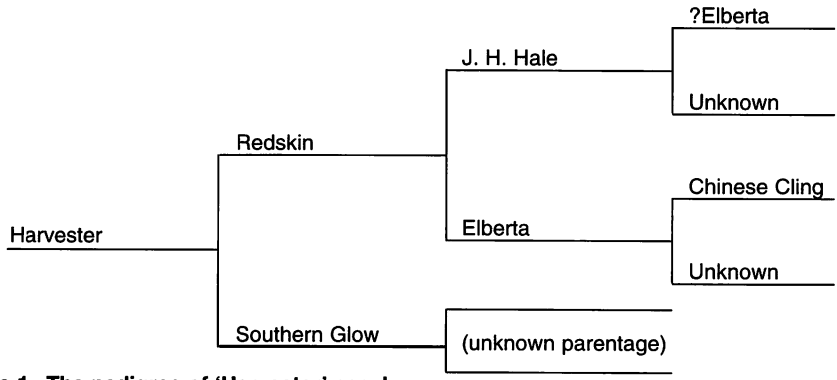

Figure 1. The pedigree of 'Harvester' peach.

scribed with the names of both J. C. Taylor and P. L. Hawthorne to commemorate their roles in developing the peach.

'Harvester' resulted from a 1960 controlled cross of 'Redskin' and 'Southern Glow' (Figure 1). Grandparents of 'Harvester' include 'Elberta' and 'J. H. Hale,' both of which had a significant influence on peach production and breeding in the past (3, 4). The original seedling tree of 'Harvester' was planted at the Calhoun Research Station at Calhoun, LA in 1961 and selected by J. C. Taylor when it first fruited in 1964. 'Harvester' ripens in mid- to late June at Calhoun, a few days after 'Redhaven' and 7-10 days before 'Redglobe.'

'Harvester' produces a heavy crop of medium-large, 6-7 cm (2.5-2.75 inch) in diameter, round, freestone fruit of good quality and texture. Fruit have a non-prominent suture and fine short pubescence. The fruit has a yellow ground color that is 50%-75% covered with a red blush. The fruit is uniformly firm, and the melting flesh is golden yellow with some red in the pit cavity. The fruit has moderate resistance to brown rot [*Monolinia fructicola* (G. Wint.) Honey]. The tree is large, upright, and vigorous and has good resistance to bacterial leaf spot [*Xanthomonas campestris* pv. *pruni* (Smith) Dye]. Leaves are medium to large with small to medium serrations and two to four globose glands. Blossoms are non-showy with rose colored petals and are self-fertile.

'Harvester' is not well adapted to northern climates because of its flower bud chill requirement of 750 hours (below 7°C). However, it has performed well in field tests in several northern states and is currently recommended for trial plantings as far north as Ontario, Canada (1).

Since its release in 1973, 'Harvester' has been used as a parent in several breeding programs and some of its progeny include 'GaLa' and 'Regal.' The list of descendants is currently brief, but it will grow with time.

A major concern involving 'Harvester' has been the evolution of several off-types sold as 'Harvester.' All of these genotypes differ from the true 'Harvester' by having reniform leaf glands, a slightly earlier bloom and fruit ripening time, and less resistance to bacterial spot.

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Apple Inflorescence Removal on Fruit Set

A positive correlation existed between the number of leaves and flowers of the inflorescence and fruit set and also the higher fruit set on 2-year wood compared to 1-year wood. On 1-year wood removal increased set of inflorescences with low numbers of leaves and flowers. Inflorescence removal had little effect on lateral shoot growth. Removal of 2/3 of inflorescences stimulated the development of fruitful inflorescence the following year. From Lauri and Terouanne. 1999. J. Hort. Sci. and Biotech 74(1):110-117.