

STONE FRUIT

INTRODUCTION

Stone fruit is a term used to describe fruit that feature a layer of fleshy, edible pulp surrounding a relatively large, hard pit (the “stone”) that protects a seed, such as peaches, nectarines, plums, and cherries.

Many stone fruit varieties will not flower and produce fruit until the trees are exposed to temperatures lower than 45 degrees Fahrenheit for a minimum number of hours. This phenomenon, called a "chill requirement," poses production challenges for stone fruit in areas like Florida with mild winters. Only in the past 60 years have breeders developed commercially viable, stone-fruit varieties in Florida.

FROM THE BEGINNING

In 1952, Ralph Sharpe initiated the UF/IFAS stone-fruit breeding program with the objective of developing peach and nectarine cultivars that had modest chilling requirements and ripened early, traits that could bring higher prices for growers and minimize post-harvest problems.

One of the program’s first successes was ‘Flordaprince’, a peach released by Wayne Sherman in 1981 that required about 150 chill hours. Sherman also released another 46 peach and nectarine scion cultivars and one peach rootstock cultivar in the years that followed.

Florida’s peach industry benefitted from this activity but suffered setbacks in the late 1980s from freezes and competition from California. Consequently, stone-fruit acreage in Florida fell from about 4,250 acres in 1978 to 1,140 acres in 1992. In 2004, UF/IFAS commissioned an economic analysis of the commercial potential for peach production in Florida with results suggesting that South Florida could produce 10,000 acres of peaches harvested between March and May. The breeding program redirected its focus, and the results have been promising as South Florida peach production has increased from about 25 acres in 2007 to approximately 2,000 acres today.

TODAY AND TOMORROW

To better support development of Florida’s stone-fruit industry, UF/IFAS established a satellite site for germplasm selection and evaluation at the Indian River Research and Education Center in Fort Pierce. This location typically gets about 75 chill hours per year, allowing for efficient selection of peaches suitable for South Florida production. The program also supports North Florida growers with research programs in Gainesville, Fla. and Attapulgus, Ga. Work at the Attapulgus site is a cooperative effort between UF/IFAS, the University of Georgia, and the USDA-ARS.

Since 2004, nine peach cultivars have been released, one nectarine cultivar, and two rootstocks. ‘UFBest’, a yellow-fleshed peach with a chilling requirement below 150 hours, is an example of the program’s success. It has good flavor, excellent fruit shape and size, a high-percent blush, and excellent tree structure.

The UF/IFAS stone fruit breeding program is currently focused on developing peaches with non-melting flesh for the fresh-fruit market.

In the future, the program will expand its work on white-fleshed peaches, which have received little attention compared with yellow-fleshed varieties. Several white-fleshed selections are currently being evaluated.



STONE FRUIT VARIETIES RELEASED SINCE 2006

Release Date	Cultivars
Peach	
07/20/06	'FlordaBest' (USPP20,294), 'Gulfcrimson' (USPP20,174)
07/29/08	'UFOne' (USPP21,607)
07/08/09	'UFGlo' (USPP21,837)
02/09/12	'UFBest' (USPP25,129)
11/08/12	'GulfAtlas' (USPP27,128), 'Gulfsnow' (USPP25,299)
07/31/13	'UFGem' (USPP26,057)
Peach Rootstock	
05/24/07	'Sharpe'
11/08/16	'MP-29' (USPP23,583)
Nectarine	
07/20/06	'UFRoyal' (USPP20,314)
02/09/12	'Flordarose', 'Southern Rose'

HIGH IMPACT RELEASES

'Okinawa' (1957): This low-chill peach rootstock has been a very important subtropical rootstock in Florida and Australia. It is resistant to root knot nematodes (*M. incognita* and *M. javanica*) but is susceptible to *M. floridensis*.

'Flordaprince' (1982): This melting-flesh variety is the most widely planted low-chill peach in the world. It is well known for its low-chilling requirement and good fruit size.

'Tropicbeauty' (1988): This melting-flesh variety is another very low-chill type with an estimated chilling requirement of 150 hours. It is approximately seven to 10 days later in ripening than 'Flordaprince' in Gainesville, Fla.

'Flordaguard' (1990): This low-chill peach rootstock is the foundational rootstock of the Florida stone-fruit industry today due to its resistance to root-knot nematodes (*M. incognita*, *M. javanica*, and *M. floridensis*).

'UFBeauty', USPP14,784 (2002): This low-chill, non-melting-flesh variety has an estimated chilling requirement of 200 hours. Its fruit are yellow, very firm, and it has a very symmetrical fruit shape.

'UFSun', USPP14,764 (2003): This low-chill, non-melting-flesh variety has an estimated chilling requirement of 100 hours. It has been popular due to its high yield of early-season, medium-sized fruit of excellent quality.

'UFBest' (2012): This low-chill, non-melting-flesh variety has an estimated chilling requirement of 100 hours. Its fruit are very large, and it has produced consistently high yields. It is approximately seven days earlier in ripening than 'UFSun' in Gainesville, Fla.

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