

Flordaguard peach rootstock

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The 3 commonly used root-knot resistant peach rootstocks, Nemaguard, Nemared and Okinawa, are deficient in one or more desirable characters for areas with mild winters and sandy soils such as are found in Florida. These rootstocks are susceptible to *Meloidogyne incognita* (Kofoid and White) Chitwood race 3 root-knot nematode. Nemaguard and Nemared require more winter chill for proper fruiting than occurs in Florida. Okinawa has a low-chill requirement but the disadvantage of having a high percentage of double-seeded pits. Nemared has red leaves, an aid in debudding of green-leaved cultivars. Flordaguard has improved root-knot nematode resistance and single-seeded pits; and is low-chilling and red-leaved. It is released by the University of Florida Agricultural Experiment Station for grower trial, and is expected to become a standard peach rootstock where low-chill peach production occurs in root-knot nematode infested non-alkaline soils.



Description of tree and fruit

Flordaguard trees have a winter chilling requirement of about 300 chill units (cu) based on bloom time with standard cultivars and should be adapted for seed production in areas that can successfully produce Flordagold peach (325 cu) or Sunred nectarine (250 cu). Full bloom usually occurs February 10 to 15 at Gainesville. Flordaguard trees have fruited well where the coldest month averages 13° to 16° C (56° to 60° F) and in colder locations in the absence of spring frost. Trees produce many flower buds and have long, whippy growth that must be pruned to support the heavy crop load. Flordaguard has red leaves with reniform petiolar glands and transmits red leaf color to all seedlings. Flowers are deep pink and showy. Pollen is bright yellow and trees are self-fertile and precocious, fruiting the second year in the field. Fruit are yellow-fleshed and heavily pubescent with dull red over-color similar to that in the leaves. Fruit ripen in late June at Gainesville or about 130 days from bloom compared to 110 days for Okinawa; consequently seeds are better developed in Flordaguard. Pits are completely freestone and relatively small with a deep red surface.

Seed and rootstock characteristics

Seed of Flordaguard produce near 100 percent germination with uniformly vigorous seedlings. Pits are nearly 100 percent single-seeded, thus, do not have to be cracked for seed separation before planting. Seedlings have been uniformly resistant to *Meloidogyne javanica* (Treub) Chitwood and *M. incognita* (Kofoid and White) Chitwood, races 1 and 3 in test tanks and have exhibited resistance for 10 years under field conditions where race 3 vigorously attacks Nemaguard, Nemared, and Okinawa (Sharpe et al. 1969, Sherman et al. 1981, and Sherman and Lyrene 1983). Over 100 scion genotypes have been grafted on Flordaguard including low-chill cultivars and selections from the breeding

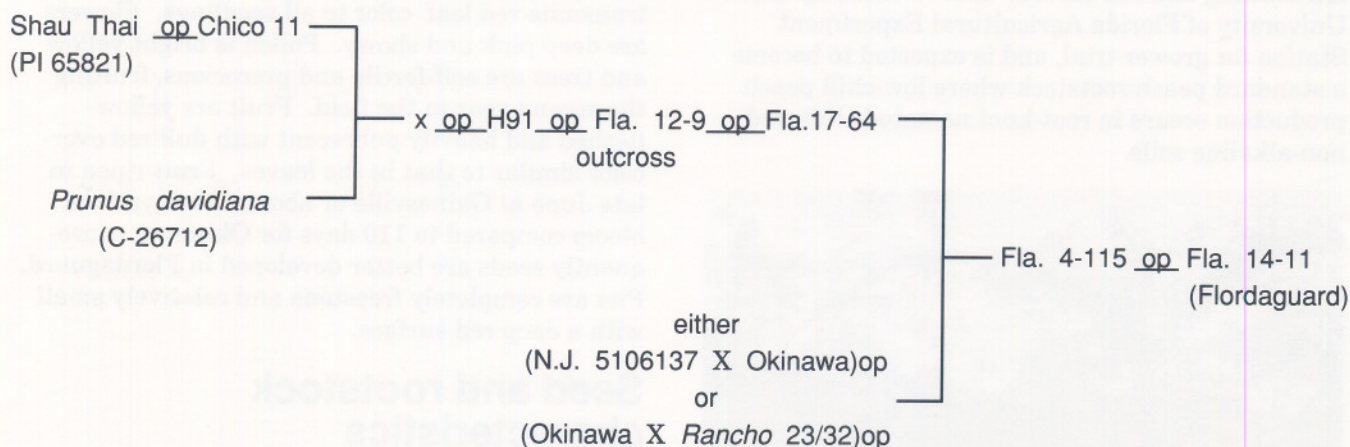
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program. These have been tested under field conditions for 3 to 7 years without showing signs of incompatibility at the graft union. Flordaguard shows susceptibility to Fe deficiency chlorosis under alkaline conditions (Egilla and Byrne 1989). Seed dried and stored at 7° C (45° F) for 2 1/2 years have shown no significant reduction in germination percentage. Dry stored seed that are imbibed with water and held in a moist medium at 7° to 10° C germinate in 4 to 5 weeks.

Origin

Flordaguard originated from six generations from Chico 11 X *P. davidiana* (Carr.) Franch, C-26712. Chico 11 was a seedling of Shau Thai, PI 65821 (Sharpe et al. 1969). H91 was homozygous recessive for double petals and red flowers, but its progeny, Fla. 12-9, was single-petaled and pink-flowered, and thus was an outcross rather than self. The red leaf gene was introduced in the fourth generation open-pollination. The red leaf pollen parent was from either (N.J. 5106137 X Okinawa) op or (Okinawa X Rancho 23/32) op (Fig. 1). Flordaguard was tested as Fla. 14-11.

Figure 1. Lineage of Flordaguard.



op = open pollination

x = unnumbered selection

N.J. 5106137 = Hale X (Elberta X Rutgers Redleaf)

Availability

Budwood for establishing seed trees and limited supplies of seed are available from the Fruit Crops Department, Fife Hall, University of Florida, Gainesville, FL 32611.

Literature cited

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