

Yield of Several Stone Fruit Cultivars in Live Oak, FL 2005-2007

Robert C. Hochmuth, Wanda L. Laughlin, Lei Lani L. Davis and April L. Warner¹

A one acre stone fruit orchard was established in 2001 at the University of Florida, North Florida Research and Educational Center- Suwannee Valley near Live Oak. The orchard includes peach, nectarine, and plum and was established to evaluate the performance of a few new medium chill cultivars developed by the University of Florida appropriate for North Florida (Table 1-3).

For sources of Florida varieties (on proper rootstocks) developed by the University of Florida, see http://www.hos.ufl.edu/jjfnweb/peach/florida_peaches_nurseries.htm. Young trees were transplanted to the field at Live Oak in February of 2001 on 20x20 ft spacing.

The orchard was maintained using the recommended practices as outlined in UF publications, Peaches and Nectarines for Florida (<http://edis.ifas.ufl.edu/MG244>), Peaches and Nectarines for Central and North Florida (<http://edis.ifas.ufl.edu/MG374>), and Growing Plums in Florida (<http://edis.ifas.ufl.edu/HS250>). Spray programs have mainly included a dormant oil spray and cover sprays of Captan and Imidan. Irrigation for the production season was delivered via a micro irrigation system with spray emitters under the tree canopy. Overhead sprinkler irrigation is brought into the orchard in the winter for freeze protection as needed. Freeze protection was implemented 2-3 times in 2005 and 2006; however, it was needed over 10 times in 2007 due to the unusually early bloom pattern in early February followed by cold in late February and March.

The site is used as a demonstration orchard for several Extension educational programs and tours throughout the year. Educational programs are provided to growers, prospective growers, Master Gardeners, consumers, school groups, and others.



The maintenance of the orchard is very labor intensive with large labor demands for pruning, thinning, pest management, freeze protection, weed control, and harvesting. To gain yield information on each cultivar, two representative trees for each cultivar (from a row of 10 trees) were selected and marked. All marketable fruit from those two marked trees were harvested at the proper maturity, counted, and weighed by

¹ Robert Hochmuth, Multi County Extension Agent; Wanda L. Laughlin, Sr. Agricultural Assistant; Lei Lani L. Davis, Farm Manager; and April L. Warner, Agricultural Assistant, North Florida Research and Education Center – Suwannee Valley, University of Florida/IFAS, Live Oak, FL 32060

harvest date beginning in 2005. The greatest challenge for the small labor force at this site is proper thinning. The two “data trees” were managed more thoroughly than other trees in the orchard. Tables 1-3 show the harvest dates, number and weight of fruit harvested, and average fruit weight for 2005-2007.

Selection of cultivars with the proper chilling requirement for North Florida is difficult, but important. Chilling in North Florida should be completed by February 10th to 15th. The ideal chilling requirements for Live Oak appears to be 400-500 hours; however, vary few cultivars have this requirement. If insufficient chilling occurs, yields will be reduced, more irregular fruit are found, and leafing may be late or inadequate. If cultivars are chosen with a chilling requirement lower than ideal for an area, the trees bloom too early making the fruit more susceptible to spring frosts. The data presented suggest in certain years the yield of some cultivars was compromised by unusual blooming patterns and likely frost damage. This reduced yield may be seen with Suncoast in 2005 and 2007, and UF Queen in 2006. Likewise, similar effects on plum be have been observed on Gulfbeauty and Gulfruby in 2005.

Table 1. Observational fruit yield, average fruit weight, and first harvest date for various cultivars of peach, nectarine, and plum grown in Live Oak, FL in the spring of 2005 season.

Variety	Rootstock	Fruit Type	Chilling Requirement ^z (hours)	Avg. No. Marketable Fruit Per Tree	Avg. Yield Per Tree (lbs)	Avg. Wt. Per Fruit (lbs)	First Harvest Date
Floridacrest	unknown	Peach	350	115	28.8	0.25	10 May
UF 2000	Flordaguard	Peach	300	69	22.9	0.33	31 May
Suncoast	unknown	Nectarine	375	y	y	y	y
UF Queen	Flordaguard	Nectarine	250	178	48.2	0.27	31 May
Gulfbeauty	Peach	Plum	225	6	0.5	0.10	3 June
Gulfruby	own	Plum	225	33	6.1	0.19	3 June
Gulfblaze	own	Plum	250	165	23.7	0.14	3 June
Gulfgold	own	Plum	250	99	15.6	0.16	7 June

^z Chilling requirement refers to the number of hours of exposure to temperatures below 45°F needed to break dormancy and initiate spring growth.

^y Suncoast fruit was not harvested in 2005 due to skin cracking on most fruit from freeze damage.

Table 2. Observational fruit yield, average fruit weight, and first harvest date for various cultivars of peach, nectarine, and plum grown in Live Oak, FL in the spring of 2006 season.

Variety	Rootstock	Fruit Type	Chilling Requirement ^z (hours)	Avg. No. Marketable Fruit Per Tree	Avg. Yield Per Tree (lbs)	Avg. Wt. Per Fruit (lbs)	First Harvest Date
Floridacrest	unknown	Peach	350	177	59.5	0.34	11 May
UF 2000	Flordaguard	Peach	300	432	105.0	0.24	19 May
Suncoast	unknown	Nectarine	375	202	44.5	0.22	11 May
UF Queen	Flordaguard	Nectarine	250	23	4.5	0.20	23 May
Gulfbeauty	Peach	Plum	225	104	14.5	0.14	17 May
Gulfruby	own	Plum	225	14	14.5	0.13	17 May
Gulfblaze	own	Plum	250	475	65.5	0.14	21 May
Gulfgold	own	Plum	250	176	26.5	0.15	14 June

^z Chilling requirement refers to the number of hours of exposure to temperatures below 45°F needed to break dormancy and initiate spring growth.

Table 3. Observational fruit yield, average fruit weight, and first harvest date for various cultivars of peach, nectarine, and plum grown in Live Oak, FL in the spring of 2007 season.

Variety	Rootstock	Fruit Type	Chilling Requirement ^z (hours)	Avg. No. Marketable Fruit Per Tree	Avg. Yield Per Tree (lbs)	Avg. Wt. Per Fruit (lbs)	First Harvest Date
Floridacrest	unknown	Peach	350	356	82.8	0.23	15 May
UF 2000	Flordaguard	Peach	300	1430	189.8	0.13 ^x	29 May
Suncoast	unknown	Nectarine	375	386	57.0	0.15	9 May
UF Queen	Flordaguard	Nectarine	250	323	67.2	0.21	29 May
Gulfbeauty	Peach	Plum	225	586	63.1	0.11	22 May
Gulfruby	own	Plum	225	415	45.3	0.11	22 May
Gulfblaze	own	Plum	250	334	36.3	0.11	29 May
Gulfgold ^y	own	Plum	250	20	5.1	0.26	6 June

^z Chilling requirement refers to the number of hours of exposure to temperatures below 45°F needed to break dormancy and initiate spring growth.

^y Most Gulfgold were culls due to soft fruit. Gulfgold is no longer recommended for commercial production.

^x UF 2000 produced an extremely high fruit load in 2007. Even though the crop was thinned, too many fruit were left resulting in small fruit size for this cultivar.