The use of trade names in this publication is solely for the purpose of providing specific information. It is not a guarantee or warranty of the products named, and does not signify that they are approved to the exclusion of others of suitable composition.
TREES should be spaced based on the expected size of the tree and life-span of the grove. A more densely planted grove may provide earlier economic returns despite an initially higher investment. US-897, C-22, and UFR-6 rootstocks produce relatively small size trees, which should be spaced at 6-8 feet within the row and 15 feet between rows. The only rootstock producing an even smaller tree size is Flying Dragon, allowing for an in-row spacing of only 5-7 feet as well as closer between-row spacing, if feasible. Quality of fruit on these small tree-size inducing rootstocks is usually high compared with some of the more vigorous rootstocks. Most of the other available rootstocks will induce trees of average size with a recommended spacing of 8-12 feet that produce fruit of intermediate to high quality. If the desired grove architecture is for a larger in-row spacing of trees (12-15 feet), rootstocks such as US-802, Volkamer lemon, and Cleopatra mandarin are an appropriate choice. The high vigor of these rootstocks may be advantageous in that they allow a tree to better cope with the damaging effects of HLB compared with less vigorous trees. Although yield will be high on these rootstocks, fruit quality will generally be lower, which may be disadvantageous when used in combination with some of the scion varieties that have poor quality juice.

ROOTSTOCK/SCION COMBINATION
Choice of rootstock will also depend on the scion variety selected for the new planting. An excellent example is sour orange which is susceptible to tristeza virus only when used in combination with sweet orange. Therefore, sour orange is now predominantly used for production of grapefruit and lemon cultivars. Most of the more recently released rootstocks have been evaluated in combination with only few selected scion varieties. Field trials involving different scion/rootstock combinations that include new releases are under evaluation and it is expected that new information on compatibility and other factors will be available in the near future.

One trend that is increasingly followed by the industry and researchers is to develop high quality sweet orange varieties that reach commercial maturity in early and mid-season with reduced production costs. Higher fruit quality and maturation standards achieved earlier would also reduce the need for juice blending with late varieties. Also, developing varieties with an early maturation window and improved internal fruit quality would allow replacement of Hamlin which is particularly sensitive to citrus canker. Interesting varieties have been developed through irradiation and other techniques at the University of Florida by the Citrus Cultivar Improvement Team. These are the early Valencia somaclone Valquarius SF14W-62, which reaches commercial maturity about 2 months earlier than standard Valencia selections, and B9-65, which has superior quality in terms of pound solids and fruit size. Yield, juice quality, and maturity dates (February/March) for Vernia, a mid-season sweet orange somaclone, are also quite desirable when compared with standard Valencia. An interesting feature is that Vernia has the highest color score of any orange at time of harvest. Other Valencia somaclones like N7-3 and T2-21 mature in the same time window or a little later than standard Valencia selections, but have superior fruit quality and may also be considered for the fresh market. Other interesting varieties are the OLL series which are also early varieties with high pound solids and yields. An interesting variety obtained by irradiation and released by USDA is ‘US Early Pride’, a very low seeded mutant of Fallglo mandarin hybrid that matures early (early October) in the season.

In general, to hit the juice market earlier, there is a need for advancing the harvesting window for Valencia selections. Although not new, there are interesting choices such as the introduced ‘Midnight’ and ‘Delta’. These are South African selections that reach commercial maturity several weeks before traditional Valencia oranges grown in Florida. Midnight trees are less vigorous than other Valencia selections and grow well on Carrizo and Swingle rootstocks. Delta trees are more vigorous, and since fruit has lower Brix than other Valencia selections, rootstocks recommended for this scion are Swingle and Carrizo. So far, there is no information available about the performance of these two varieties on newly released rootstocks from UF or USDA.

New scion releases with potential for the fresh fruit industry include SugarBelle’s ‘LB8-9’ as the most promising variety. These trees are vigorous and relatively tolerant to HLB and Alternaria. Mature trees can reach 20 feet in height depending on the rootstock. This makes regular pruning, hedging, and topping imperative to maximize light exposure and achieve good yield. Fruit matures from late November to early January and may be seedy depending on crosspollination incidence. Fruit is easy peeling and retention is good and well past normal market maturity. In general, Sugar Belle performs well on any common rootstock, although interaction with Cleopatra may result in high acidity of fruit.