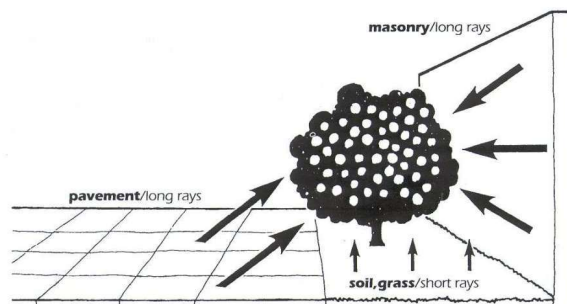


## Your Florida Dooryard Citrus Guide - Site Selection<sup>1</sup>

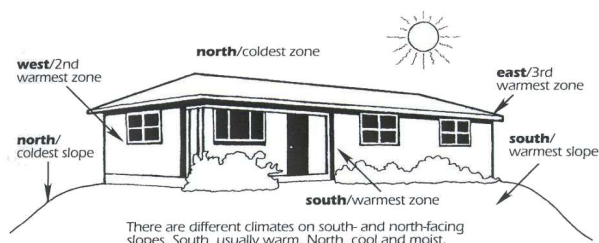
James J. Ferguson<sup>2</sup>

### Spacing

General considerations for planting sites for dooryard trees include adequate space for growth, maximum exposure to sunlight, good air circulation, plus adequate irrigation and drainage (Figure 1 and Figure 2).



**Figure 2.** Range for frost-tender citrus can be extended by planting them against a surface that absorbs daytime heat and releases it slowly at night. Different surfaces vary as to heat and light reflected, absorbed or stored, with masonry and pavement reflecting more heat than soil.



**Figure 1.** A south-facing house with typical microclimate that can change with the season and angle of the sun. A walk around your house at various times of the day indicate the best sites for growing citrus.

### Microclimates

You can have some influence over the hardiness of your young citrus tree(s) by paying attention to the climate around your home. First, make a location

sketch of your home, noting the south and west sides. The reason for this is that south is the warmest zone and west the second warmest zone (Figure 1). If you live in the parts of Florida subject to frosts or occasional freezes, you should locate your tree in the south or west zone to give young citrus a good start. (If drought, not cold, is your major climatic influence, note that the north zone is usually the coldest, most moist zone.)

Different surfaces vary in the amount of heat reflected, absorbed, and stored, with light colored surfaces reflecting more heat than dark colored

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ones. Different types of stone, masonry or concrete absorb approximately 50% of available heat, depending on their color and density. Soil absorbs about 20 to 30%, with bare soil absorbing more heat than a grass or sod cover or leafy mulch. *Hint: keep the soil around your citrus tree bare during the winter months to take advantage of the heat storing capacity of the soil.*

If you have features such as mature trees, walls or fences, pencil them in. They can provide additional shelter and should be taken into consideration. You can often intensify sheltering effects for your citrus by utilizing the south slope of a rise - the warmer slope - and planting your citrus according to the different rates that different surfaces store and radiate sunlight back (Figure 2).

Finally, walk your landscape with your house and zone map and note spots where it seems warmer or colder than the median temperature you've noticed for the property. The warmer micro-zones are potential citrus sites.

If you're planting several trees, put them in a row, oriented on a north-axis to allow better sun exposure. In commercial groves, orange trees are generally planted with 10 to 15 feet between trees within the row, and with rows planted about 20 to 25 feet apart. If you're planting grapefruit, plant them with rows about 5 feet further apart (25 to 30 feet) because grapefruit trees grow larger than orange trees.

Other planting variations: Tahiti limes are commonly planted 22 to 25 feet between rows and 18 to 20 feet apart as single trees. Smaller trees like satsuma mandarins on trifoliate orange and kumquats can be planted closer to (15 feet in all directions). Use these commercial spacing guides to plant your dooryard tree for optimum sun exposure and to avoid crowding out other plants. In your decision-making consider both tree vigor and growth habits since some rootstock/scion combinations are more vigorous than others. Some, like mandarins, have an upright growth pattern whereas lemons have a more spreading growth pattern.

## Planting Time

Citrus trees can be planted any time of the year in Florida, although most commercial growers plant in either the fall or spring. Trees planted in the fall have time to establish a root system before the spring growth flush, but they also face the prospect of winter freezes. Trees planted in the spring (after the threat of cold weather has passed) have nine to ten months to grow and harden off before the next winter. But these trees require additional attention during dry spring and hot summer months.

## Site Preparation, Plant Preparation and Planting

Prepare the site well before planting and you will eliminate headaches later on. Remove weeds; rake the area. If you're planting a tree where another tree has been recently removed, you may have problems with fungal diseases spread from the old, decaying roots to the newly planted tree; termites may move from old wood to destroy the roots of the newly planted tree. Minimize these risks by removing the remaining old roots and debris.

Inspect your citrus for evidence of pot binding, a mass of roots growing in a spiral around the root ball, or J-rooting, horizontal growth of the main roots. Either pot binding or J-rooting may restrict root growth after planting. If roots are pot bound, make several vertical slashes through the root ball, or carefully remove obviously crowded roots to allow the potting soil and roots to interact with the soil of your planting site. It may be easier to cut some of the roots with pruning shears and to pull them until they protrude from the ball.

If roots are not pot bound, don't cut them. Roots should be moist before planting, so soak them in a bucket of water while you prepare the planting site.

## Digging the Hole

Dig the planting hole wide and deep enough to accommodate the root system, especially if your tree wasn't grown in a pot (Figure 3). In either case, spread the roots out in the hole and set the plant higher than it grew in the field nursery or container (Figure 4).

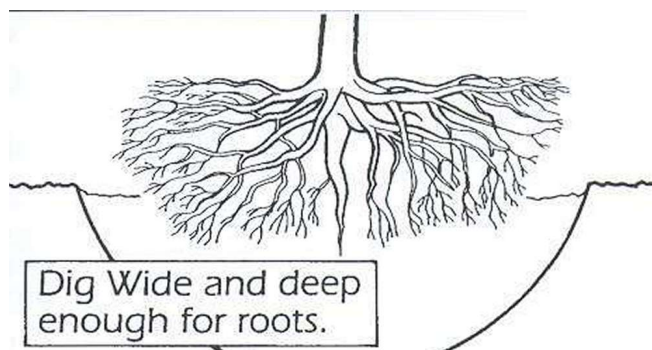


Figure 3.

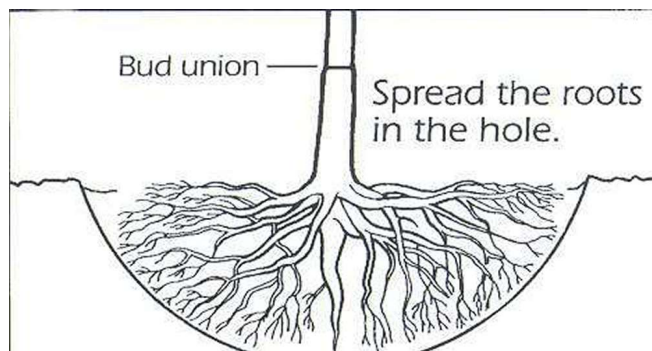


Figure 4.

Keep the bud union above soil level to avoid infection with a widely spread, soil-borne fungus that causes foot rot at the base or foot of the tree. Place a long board, rake or hoe over the center of the hole with each end extending over undisturbed soil. This helps determine proper planting depth by showing exactly where the soil line should be. Since the soil and tree are likely to settle, set the soil line of the young tree several inches higher than the bottom of the board or hoe handle (Figure 5).

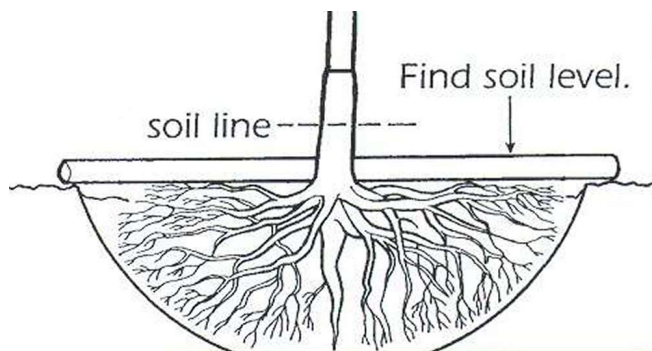


Figure 5.

Next, backfill around the plant to half-fill the hole and press the soil down to remove air pockets (Figure 6). Water the hole thoroughly (Figure 7) and allow the soil to settle. Backfill, again, to near the top of the hole, firm the soil around the tree (Figure 8) and form a water basin that will hold 7 to 10

gallons of water (Figure 9). Slowly add more water and take a break. You've done a good job!

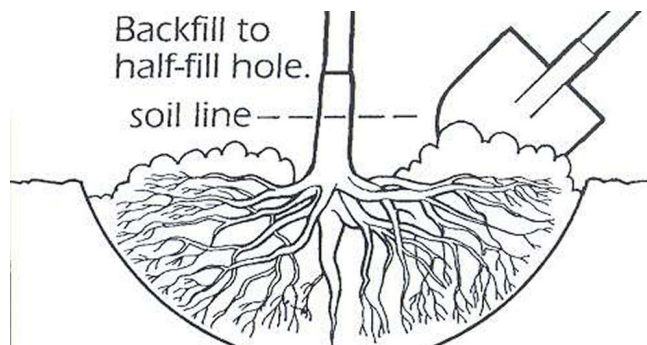


Figure 6.

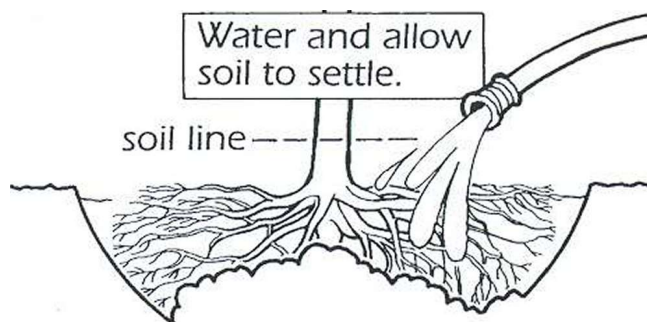


Figure 7.

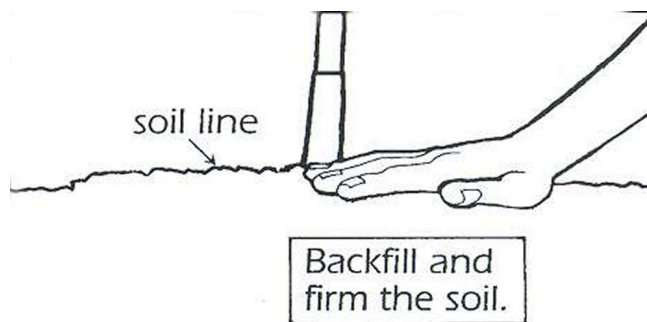


Figure 8.

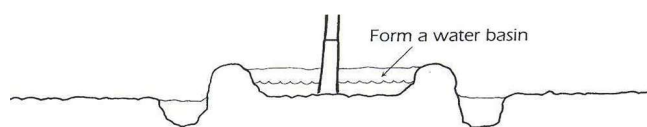


Figure 9.

### First Fertilization

Fertilize lightly about 2-3 weeks after planting but be careful to avoid burning the roots of the young tree with fertilizer or herbicides. See the fertilizer section for more detailed information on this topic.

## Planting in Containers

You can also grow citrus trees in containers if planting space or environmental conditions are limiting. Don't expect as big a tree as one grown in the landscape. Citrus trees that grow and fruit well as containerized trees include calamondin, Key lime, kumquat, limequat and Tahiti lime. If you want only one containerized tree, avoid cultivars like Orlando, Minneola, and Nova tangelos, and Robinson, and Sunburst tangerines that require a different pollenizer cultivar.

The biggest advantage of containerized trees is that they can be protected during freezing temperatures by temporarily storing them in an enclosed area. You can plant your trees in a variety of containers: plastic, metal, clay, ceramic, wood or any others available at nurseries and garden supply stores. Recycled whiskey barrels cut in half are excellent or you may want to build a treated wooden box. Weight and durability are factors to consider.

All citrus containers should be big enough to allow for root growth over time and have adequate drainage holes. To insure good drainage, place about 2 inches of gravel in the bottom of the container. Be aware that soil in plastic, metal, and ceramic containers retains moisture longer than soil in wood or clay containers. These last two allow water to evaporate through the sides. Cool weather generally reduces citrus water use, so water accordingly. As with most plants, allow the upper surface of the soil to become dry to the touch, then water thoroughly by slowly filling the container.

## Nutrition

Good nutrition is essential but over-fertilization can result in excessive vegetative or leafy growth, poor fruiting, and possible dieback due to fertilizer salt accumulation. Salt accumulation is a common problem, often indicated by a white crust on the soil surface. It may be due to excess fertilization and/or water containing soluble salts. Should this occur, thoroughly leach the soil by slowly running water through the container for about 30 minutes. This flow should carry excess salts through the soil and out the drainage holes.

Problems associated with over-fertilization can be avoided by applying controlled-release fertilizers, commonly used for potted citrus and other woody ornamental plants, and need be applied only once or twice a year.

## Pruning or Cutting Back

With few exceptions citrus trees will develop and maintain their natural shape with little or no training or pruning. They occasionally become "leggy" when grown indoors or in poor light for too long. Cut leggy branches back partially to force branching and bushiness.

Frequently, the trees branches and leaves will grow rather large and begin to exceed the capability of the root system. Consequently, some leaf drop and twig dieback will often occur. When this occurs, prune the tree heavily to rejuvenate and shape it as well. Reduce fertilizer and water rates according to the reduction in canopy size.

Citrus grows best in full sunlight. However, avoid rapid changes in light exposure. Acclimatize your tree gradually to increased sunlight.