

Avocado Planting and Care Guide

This document is based on the University of Florida Circular 1034, CIR1034, and my own experience growing avocados in Northern Florida. Every avocado grower should read CIR1034 and the other UF avocado documents.

There are a few common problems encountered growing avocados in North Florida and the Deep South in general. The first thing to consider is selecting the right variety for your area and preferences. Your first choice should be a Mexican race avocado because of that type's cold tolerance. Some Mexican avocados are frost tolerant to 15 degrees Fahrenheit when mature. Mexicola, Gainesville, and several others fall in this category. The second thing to consider is soil and soil drainage. The usual problem in the area is planting in clay soil, thereby creating a stagnant basin that rots the roots before they can get established in the native soil. The solution is planting in a basin on a mound of well drained soil or raised bed. The other common problem comes from planting seedlings. This is a fine way to discover new varieties, but the juvenile period of seedlings is from eight to thirty years. A researcher in the tropics can easily wait the eight to ten years for a seedling to come into production, but a homeowner in the deep south may wait thirty or more years for the first fruit. Seedling trees are often not productive. The solution is to plant a grafted tree of known productivity which will bear fruit in two or three years.

The Cold Hardy Avocados

Mexicola- A small black thin skinned fruit with exceptional cold tolerance. The fruit is small but very tasty.

Gainesville- This one is also extremely cold tolerant and has tasty fruit when well cared for. The fruit is larger than Mexicola.

The original seedling tree on the UF campus is gone but it lives on as grafted trees and several seedling selections.

311/Mexicola Grande- There are several Mexicola Grande floating around out west. This one is like a larger version of Mexicola, but is a little more tender.

Chattahoochee Mexican-This tree is a seedling that has survived extremely cold weather with very little frost damage. It has not fruited, so the other characteristics are unknown. It looks like a Brogdon seedling, but who knows?

Tallahassee Mexican-This seedling has never had any frost damage in Tallahassee due to the protection afforded it by the urban heat island. It seems to be a Mexicola seedling, but who knows? It has not fruited yet and like Chattahoochee came from a tree, "Down South".

Ft. Ogden- This tree is massive. It withstood 18 degrees with little damage in the 80's. It has not had any frost damage during the recent cold years. It was damaged by the hurricanes though. I was told it is a Brogdon and knew it as such since childhood. I learned that although the fruit type and season is the same as Brogdon, the cold tolerance of this tree exceeds Brogdon. This tree also has anise scented leaves, and Brogdon does not. I suspect it too is a Brogdon seedling.

Winter Mexican-This one is from Southwest Florida and has lower fruit quality than those previously mentioned. But, it is the most cold tolerant variety to ripen so late in the year, til first hard freeze in North Florida.

Brogdon- Brogdon is the most cold hardy type with commercial potential, but it is too tender for all but the warmest spots. It does well in the urban heat Island of Tallahassee though.

Bacon- This is the hardiest Type B pollenizer for those worried about such things, but there is no need to worry. The Mexican types don't have such problems in Florida.

Duke- Duke is known for root rot tolerance and fine flavor, but is not as hardy as the first few.

Day- This is the hardiest big green Florida type, but is suited only to the warmest spots.

Texas-There are several varieties from Texas that claim superior fruit quality and cold tolerance. I do not yet know their adaptability in our area, but they come highly recommended. I am unsure how to name them as there are unresolved legal issues surrounding their trademarks. One nursery in South Florida propagates them under assumed names to avoid the legal issues. They are not patented since they were discovered not created. Two for sure were undamaged in Gainesville at 14 degrees and nearby Mexicola was defoliated. They are potentially the best for our area so far.

The following are good varieties but not really hardy in North Florida and will need frost protection.

Choquette- Very large and tasty green fruit hardy to about 25 degrees when mature, ripens during winter.

Fuerte- Like a big green Hass and ripens late, but also very tender.

Russel- No real cold tolerance, but known for vigor and gourd shaped fruit.

Lula- Hardy for a West Indian avocado, but not my favorite.

Monroe- A large fruited commercial big green Florida variety, one of the hardiest of the type.

Mound Planting

Bedding or Mounding is a common practice in high water table areas. A high water table is found in North Florida, but what is most common is a perched water table created by digging a hole in clay soil and planting the tree in that hole. This is fine until the rainy season when the hole becomes a waterlogged basin which soon rots the roots. The situation is made worse when so called "good soil", compost, peat, rotted manure, compost, etc... is added to the hole. These amendments make it worse by creating a stagnant sour root rotting pool during most of the year. Your

avocado tree will die outright or be so weakened that it dies at the first frost. The weather is blamed but the real culprit is the poorly drained planting. I killed a bunch of trees this way due to inexperience with clay soil. The well drained sand over limestone found by the coast will never have this problem and may in fact benefit from soil amendments, especially if you plant a species sensitive to nematodes. The planting technique is specific to water table and soil drainage. It is best to add compost and mulch as a top dressing around the tree but not near the trunk or in the root zone. I found that the only way is to plant the avocado on a mound of sand and not to disturb the clay. The roots will find what they need. Plant the tree in a basin on the mound. Mulch the slopes but keep it away from the trunk. Once the tree has been in the ground for a few years and has reached a mature fruit bearing height of six to eight feet tall and at least as wide, then it is time to bury the graft union at least six inches. If you do this at planting you will smother the roots and kill the tree. By waiting you allow the roots to get established in the mound and they won't be smothered by filling the basin. If you have extremely well drained soil, then just plant the graft union below grade. Always keep the roots well drained and moist.

Grafted Trees

There are several reasons to choose a grafted tree. A cutting from a mature tree is spliced into a seedling, the rootstock. The seedling serves as the root system for the cutting. This way you can propagate a known variety. The newly grafted tree behaves as a mature tree well past the unproductive juvenile phase. Grafts two inches high try to fruit because they don't know any better. It is best to remove all flowers and fruit before the tree reaches six to eight feet high and wide. The graft union is the point where the rootstock and scion, the tree you aim to propagate, are joined. The rootstock is less cold tolerant than the scion and should always be protected from freezes. The rootstock is chosen for

vigor, disease resistance, salt tolerance, etc... If these issues are a concern, for example coastal areas or infected fields, then the rootstock should be conserved and protected from frost. The rootstock and graft union are usually buried and the scion allowed to root for itself. This is done because, in the case of severe freezes, the scion can sprout a new trunk from the underground portions of the base of the trunk. Such sprouts are from the desired cold tolerant variety with good fruit, not the rootstock. This is easy to confirm with the anise scented varieties.

Frost Protection

My garden at the farm always needs frost protection for young trees. My garden in Tallahassee is in a warm spot and rarely freezes. The immediate coast and barrier islands are also semitropical and rarely need frost protection. It depends on the needs of the individual tree. It is best to plant early so the tree can root in and get established before the winter. It is best to protect young trees from freezes below 25 degrees for the first few years, Once they are established and the graft buried, then they will reach full frost tolerance. A tomato cage and an old blanket should suffice the first season. If you are in a zone that averages below 15 each year, then you should construct a permanent frame to support a cover and prune the tree back after harvest to control size. I like pvc and frost cloth or greenhouse plastic. A misting/ sprinkling system can also protect the trees but must be applied correctly or it will cause more damage. I prefer to cover avocado trees due to the sensitivity of the roots to rot which is encouraged by the irrigation.

Fertilizer

Mature trees seldom need any, but young trees need some early in the season. Withhold fertilizer late in the year to discourage tender late season growth. I like slow release or organic fertilizer.

Charcoal made from partially combusted wood is a great soil amendment and the only one I recommend.