

The avocado (*Persea americana*) has a long and interesting history. Avocado is derived from the Aztec word “ahuacatl” which translates to a certain anatomical feature. I’ll leave you to research the meaning but the fruit was considered an aphrodisiac (that’s a clue). In Mexico it is called “aguacate” and the word “guacamole” is derived from the word “ahuacamolli”, which is ahuaca “avocado” and molli “sauce.” The story is that an early English description of “avocado” called it the “avogado pear,” which was misunderstood to be “alligator pear”. And probably the bumpy skin of the fruit helped the term to persist.

According to Medical News Today, avocados contain a lot of fiber, and very little sugar. Avocados are rich in monounsaturated fatty acids, mainly oleic acid. Avocados are rich in many vitamins and minerals, such as B-vitamins, vitamin K, vitamin E, vitamin C, potassium and copper. Avocados are rich in plant compounds, such as carotenoids, antioxidants and a sugar called D-Mannoheptulose. The carotenoids are well absorbed because of the high fat content of avocados. Avocados are very filling, incredibly nutritious and taste really good. They are a good source of several vitamins, minerals and plant compounds, and may have benefits for heart health and arthritis. All things considered, avocados are an excellent addition to a healthy diet.

With all that going for it, why aren’t avocados growing alongside our citrus trees in every backyard of southern Louisiana? Well, following this past winter’s freeze, one could drive around and see that avocado is truly a tropical fruit. The most commonly available types of avocados that we regularly consume are very sensitive to temperatures below 30°. On top of that, ever since the 70’s people have been saving the pit from their avocados and growing their own little avocado tree. Of course, that little tree is still cold sensitive and a tree grown from seed will take up to 10-15 years before it starts to produce flowers and fruit. Like most fruit and nut trees, commercially produced avocado trees are grafted and will begin flowering and fruiting in as little as 2 years. What’s the difference? Most avocado is bud-grafted onto young (ca. one year old) avocado seedlings. The buds are taken from mature fruiting mother trees. Therefore, the bud is genetically and physiologically as old as the tree it came from and will begin to grow and flower just like a branch on the mother plant. Buying commercially produced fruit and nut trees is always a great time-saver as well as surety that the tree will be what you expect.

Most avocado trees are also large trees. Hass (the most common supermarket avocado) trees grow to be 30-40 ft. trees. Fuerte (another common variety) grows to over 40 ft. They really do need a lot of space. It's hard for most of us to justify giving that much precious space of our landscape to an avocado tree. And now the real kicker, to get the best fruit production you need two avocado trees – a type A flowering tree and a type B flowering tree. What is type A and B flowering? Avocados have a very unique flowering quirk that helps to ensure genetic diversity. Avocado flowers are perfect (have both male and female structures); however, maturation is out of synch. Type A plants produce flowers with mature female structures in the morning and mature male structures in the evening. Type B plants produce flowers with mature male structures in the morning and mature female structures in the evening. Self-pollination is therefore difficult. In the morning, mature pollen from a type B plant is flying around looking for a mature female structure to land on. Only type A plants have mature female structures in the morning. Then in the evening, mature pollen from type A plants is flying around looking for mature female structures to land on. Only type B plants have mature female structures in the evening.

Avocados are bee pollinated. If there are type A and B trees near each other (neighbors) then there should be fairly good cross-pollination. However, if you are going to grow only one type, you should check around the neighborhood to see if there are any other avocado trees being grown and what type they are. Without both flowering types available, pollination and fruit set will be minimal.

Now, just to add a wrinkle to the story. The two flowering types behave with clock-like exactness only when the average temperature (night minimum and day maximum) is above 70oF. As temperatures fall, the daily openings become delayed and become irregular, so that a single tree may have flowers in both female and male stages at the same time. This helps to explain how blocks of just one variety sometimes set heavy crops. It is also why many varieties are described as self-fertile when grown in certain regions. But, as the average temperature falls below about 70oF, the flower parts function less well. Below about 60oF, there may be zero set. Isn't nature fun!

If you are interested in growing your own avocados, a quick primer on varieties will help you make a more informed decision. West Indian type avocados produce smooth round, glossy green fruits that are low in oil and weigh up to 2 pounds, but are not cold hardy. Guatemalan types produce medium ovoid or pear-shaped, pebbled green fruits that turn blackish-green when ripe, but are not cold

hardy. The fruit of Mexican varieties are smaller (8 - 12 ounces) with paper-thin skins that turn glossy green or black when ripe and are moderately cold hardy once established. The flesh of avocados is deep green near the skin, becoming yellowish nearer the single large, inedible ovoid seed. The flesh is hard when harvested but softens to a buttery texture. One of the large nurseries in our area currently produces four varieties of avocado for sale in Louisiana and Texas. Let's look at those first.

Hass – A Mexican variety that is the most popular avocado variety in the world. Hass has a type A flower, makes a 30-40 ft. tree, and has a pebbly dark skin when ripe. It is one of the best tasting varieties making 8-12 oz. fruit. However, Hass is tender to temperatures below 30oF.

Fantastic – Mexican variety with green paper-thin skin. The fruit has a creamy texture with great flavor. Very cold hardy variety, supposedly the most cold hardy of all avocados. Can take temperatures down to 15oF for a short period of time without significant damage. Type B flower. Mature trees may be over 30 ft. tall.

Joey – Mexican variety that produces medium size, egg shaped purple-black fruit. A heavy bearer with excellent flavor. Can take temperatures down to 15oF for short a period of time without significant damage. Type B flower. Mature trees may be over 25 ft. tall, usually 10-15 feet.

Lila – Mexican variety that produces medium size, green fruit. Can take temperatures down to 15-20oF for short period of time without significant damage. Mature trees may be over 25 ft. tall, usually 10-15 feet. Type A flower.

A cursory search for avocado varieties will reveal just how popular avocados are. There are over 100 listed avocado varieties. Many are available to order but remember to always get a cold hardy variety for our region. Some other cold hardy varieties include:

Bacon – Type B flower. Cold hardy to 24oF. Good tasting.

Jim Bacon – Type B flower. Cold hardy to 22oF. Good tasting and heavy fruit set.

Mexicola – Type A flower. Cold hardy to 18oF. Small tree with shiny black fruit and rich nutty flavor. Large seeded.

Mexicola Grande – Type A flower. Cold hardy to 18oF. Slightly larger tree and fruit than Mexicola but with same rich nutty flavor.

Stuart – Type A flower. Cold hardy to 18oF. Compact tree with small good tasting fruit.

Brazos Belle – Type B flower. Cold hardy to 15oF. Mexican variety with purple-black fruit with a rich nutty flavor. Tree is medium-sized.

Poncho – Type B flower. Produces a smooth-skinned light green medium fruit. Cold hardy to 18oF.

When growing avocados, site selection is very important. Choose a south to southeast exposure to protect from winter blasts. Cold hardiness is in reference to a mature tree (6 years old or older). Younger trees will always need protection if the temperature is going to drop below 30oF. They absolutely must have well-drained soil, and NO seasonal wetness! Improve the soil with a good compost. Fertilize the first two years with a 6-2-4 or similar fertilizer at least 4 times a year and as often as once a month beginning after fruit has set. Avocado trees that have been fertilized regularly are more able to deal with cold temperatures in the winter. Avocados prefer infrequent deep watering, once established. DO NOT OVERWATER! It is a good idea to apply a 3” layer of mulch to avocado trees each year to conserve moisture and improve soil quality.

Avocados can also be grown as container trees. With a large container (25 gal. or more), you can grow an avocado and maintain smaller size easier. It can also be moved inside if a severe freeze threatens. Remember, plants in containers are more susceptible to cold than those in the ground. Avocado bark is green and may be susceptible to sunburn when young.

Pruning an avocado is done primarily to control the shape and size and to remove any dead or damaged limbs. You can lightly prune an avocado almost any time but heavy pruning should be done during the late winter to early spring after danger of frost. Flowers are produced on new growth.

Avocados do not ripen on the tree, nor do they fall to the ground when ripe. Avocado maturity can be determined in the early fall by picking a couple of fruit and setting them on the kitchen counter. A mature fruit will soften in three days to two weeks. If the fruits don't soften, try again every week or

two until they soften and achieve good taste. Pick the fully grown fruit first and allow the smaller fruit to grow larger before picking.

So maybe growing avocados isn't such a bad idea after all. With the multiple varieties to choose from, finding one that fits your space and hardiness level should be possible and most years there should be good fruit set. What could be better than making guacamole from homegrown avocados!~Dr. Joe Willis - April 2018 GNO Gardening Newsletter

<https://www.lsuagcenter.com/profiles/cdunaway/articles/page1529338129218>



Hass avocado flower during the functional female stage, the first opening stage. Left: Hass avocado flower during functional male stage, after dehiscence, the second opening stage. Photos by Department of Agriculture and Food, Government of Western Australia