



Growing Avocados in the San Joaquin Valley

by Sheri Leimbach, UC Master Gardener

Avocados are native to semi-subtropical high elevation rainforests in Mexico and Central America. A delicious and highly nutritious fruit, the cultivation of avocado has spread around the world. California produces more than 90% of all avocados grown in the US, with southern California (particularly San Diego and Ventura counties) being the cradle of production because of its mild climate.

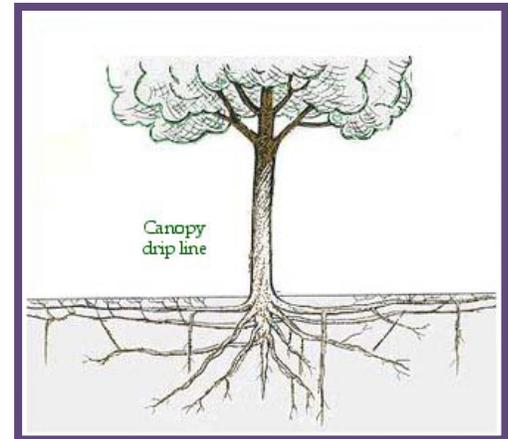
A single avocado tree produces hundreds of fruit per year. The avocado is neither sweet nor acidic and has a mild nutty flavor. It has significant nutritional benefits compared to other fruits because of its mineral, vitamin and protein content. It is high in monounsaturated fat which helps to lower "bad cholesterol" and it has high fiber content. There is twice the potassium in an avocado than in a banana and it's a good source of vitamins B, E, K and folic acid. But don't start dreaming of homegrown guacamole just yet.

Growing avocado trees in the San Joaquin Valley backyard is not easy and quite risky.

According to Mary Lu Arpaia, an avocado specialist with the University of California: "Although avocados are frost-sensitive, it is not the cold winter climate that is the greatest challenge to avocado production in the state's inland valleys. It's the heat. Plant leaves have stomata, small openings that allow water vapor to move out of the plant to cool the leaf surface. (It works something like perspiration on people. Moisture exits the pores and cools the skin.) The stomata on the leaves of Hass avocados – the variety most favored by California consumers – close when the temperature rises above 90 degrees. No moisture is released from the closed stomata and the plant overheats, causing fruit drop. To grow avocados in the valley, we need to have a variety that can tolerate heat better than Hass."

A good backyard tree for the valley would be varieties like 'Gwen' and 'Lamb Hass', which are both related to Hass. Other very good tasting fruit are 'Pinkerton' and 'Reed.' But you can't just plant one tree. If you want to have fruit you need a pollinizer tree, such as 'Bacon' or 'Zutano.'

Each variety of avocado is classified as Type A or Type B, which describes its flowering type and sequence of timing for pollination. When growing avocados, it is beneficial to have trees from both Types A and B to increase successful pollination for both trees, plus the two trees need to flower in the same time period. Good fruit set occurs when temperatures are about 70 degrees day and night. When temperatures are below 60 degrees, fruit set is poor. Another reason why fruit set may be poor, even under ideal temperatures, is the need for honeybees to transfer pollen from the male to the female flowers, when they are both open. High heat and water stress during flowering, (usually April-June), will decrease fruit set and can be as serious as frost damage. Increased watering during flowering and fruit set will help to retain fruit.



Avocado water

Spring is the most favorable planting time of the year. Choose a southwest location because of the heat and light exposure and the warmth of the soil, but be aware of this additional challenge. The avocado is the most salt-sensitive crop in the world! In the valley, we have plenty of alkaline soils with high salts, especially when rainfall is limited or non-existent as in drought years.

When planting avocado trees, be aware that the roots are very fragile and care must be taken not to damage the root ball. They are naturally shallow-rooted with the majority of the roots in the top 6 inches of the soil and the roots extending far from the trunk. They require good drainage and will benefit from a thick layer of mulch to protect the roots and improve aeration.

At planting, a small tree will require about 2 to 5 gallons (or 2 to 5 inches) per week. In order to keep the root ball of the tree from drying out, the newly planted tree will need to be watered 2 or 3 times a week. As the tree grows and the roots grow out from the trunk, you will want to irrigate every 7 to 10 days during the middle of summer. But check the soil with your finger before watering to determine whether there is adequate moisture before you water again. Mature trees need about 20 gallons of water per day in the spring and summer.

Unlike most fruits, avocados are not edible when they are first picked from the tree. Maturity is not synonymous with ripeness. To determine whether the fruit is mature and ready for harvest, bring in one avocado and place it on the kitchen counter. If it softens without shriveling, it is ready to be picked. Another test is to cut a fruit open. If the husk covering the pit inside the fruit is brown and papery, the fruit is ready to harvest. Only after a stem is severed will fruit begin ripening. The fruit not ripening on the tree provides an advantage for the home gardener because the mature fruit can be stored on the tree for a few months. You can pick a few avocados at a time. Let them ripen and enjoy their flavor over an extended period.

For additional information on care, planting, varieties, pest and disease control the following websites are valuable resources:

www.ucavo.ucr.edu

<http://www.ipm.ucdavis.edu/PMG/GARDEN/FRUIT/avocados.html>

<http://www.ipm.ucdavis.edu/PMG/C008/m008yi01.html#BLOOM>

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Male and female avocado flowers