

## Grafting

On average, it takes an avocado plant produced from a seed, eight to 20 years to produce avocados. For that reason, commercial avocado varieties (scion varieties) are grafted onto rootstocks (rootstock varieties). The combination will then bear fruit much sooner, often within two years after orchard planting. Grafting also combines the best characteristics of the scion and rootstock varieties. The right combination can improve the tree's resistance/tolerance to diseases and pests and result in early precocious fruiting.

## Pollination

Avocado productivity is influenced by many factors. Perhaps the critical first step is the process of pollination that leads to fertilization and fruit set. Pollination occurs when pollen is deposited on a receptive stigma.

The avocado's flowering behavior is unusual in many ways. The mature tree can produce in excess of a million flowers during the flowering period (which yield 100-300 avocados, meaning only one flower in 10,000 becomes an avocado). The flowers occur in panicles of several dozen to hundreds of flowers. There are two different types of avocado flower heads: determinate and indeterminate. In a determinate flower head, the tip of the shoot that bears the flowers will end in a flower. Indeterminate flower heads terminate with a vegetative bud.

The avocado flower has both functional male and female organs. The male floral organ, which produces pollen, is comprised of the anthers and stamens. The female floral organ is comprised of the stigma (which receives the pollen), style and the ovary.

The avocado exhibits a type of flowering behavior known as "synchronous dichogamy." An individual flower will be open for 2 days; however, the timing of the male and female phases is distinct. When the flower first opens it is in the female phase and the stigma is receptive to pollen. At the end of the female phase, which lasts 2 to 4 hours, the flower closes. On the second day the same flower re-opens in the male phase and sheds its pollen.

The avocado is also unusual in that the timing of the male and female phases differs among varieties. There are two flowering types, referred to as "A" and "B" flower types. "A" varieties open as female on the morning of the first day. The flower closes in late morning or early afternoon. The flower will remain closed until the afternoon of the second day when it opens as male. "B" varieties open as female on the afternoon of the first day, close in late afternoon and re-open in the male phase the following morning.

Since there are hundreds of flowers on an avocado tree at any one time the actual situation in the field encourages movement of pollen between the complementary flower types. The avocado's flowering behavior is believed to promote cross-pollination since the male and female phases of an individual flower occur at different times. It is believed that the inter-planting of complementary flower types can boost fruit set and therefore yield by making pollen available.

## Other Interesting Facts

- Avocado orchards help renew our air supply and keep it fresh by absorbing carbon dioxide and producing oxygen
- Two mature avocado trees can provide enough oxygen for a family of four
- Orchard trees lower air temperature by evaporating water in their leaves
- Avocado tree roots stabilize the soil and prevent erosion
- Avocado orchards can reduce storm run-off and the possibility of flooding. By slowing run-off and filtering rainwater, orchards can improve water quality

## Harvesting the Fruit

Unlike most fruits, the avocado is one of the very few that does not ripen on the tree. Growers can “store” their mature fruit on the tree for several months, allowing for greater control of the harvest volume. Growers determine harvest-ready fruit by measuring the dry matter of the flesh (remarkably, the sugar level in avocados decreases as they mature). In order to ripen properly off the tree, Fresh California Avocados need to reach the minimum oil content for the proper balance in flavor and consistency.

Avocados are harvested by hand with the help of special shears, sometimes using ladders or mechanical platforms, and picking poles to reach the fruit in tall trees. Pickers place the harvested fruit in large nylon bags which may hold from 30 to 50 pounds of fruit.

The harvested avocados are carefully placed in large picking bins that hold 300 - 900 pounds of fruit each. The fruit is transferred by forklift, tractor or trailer from the grove to a loading area and then hauled to the packing facility. Here the avocados are immediately cooled to remove field heat and preserve quality. The pre-cooled fruit are then ready for packing.

Each bin of avocados is carefully placed on a conveyor belt, which gently tips over the bin, allowing the fruit to roll onto a grading belt, where graders hand check and machines sort the avocados by size. Once sorted, the avocados are brushed and washed as they roll into packing tables where they are gently placed into single layer, double layer or loose-fill cartons. The cartons are sealed, organized by size and stacked onto pallets.

## California Avocado Varieties

### Fresh California Avocados

What makes Fresh California Avocados so creamy and delicious? Ideal growing conditions. Southern California Avocado groves are blessed with good soil, proper drainage, abundant sunshine and cool ocean breezes - everything an avocado needs to grow up creamy rich and velvety.

### Fresh California Avocados let you know when they're ripe

The great thing about a Fresh California Avocado is that its pebbly skin darkens as it ripens and will begin to yield to gentle pressure. Look for fruit that is average to large, oval-shaped and heavy. Then slice into one of nature's perfect foods and enjoy the silky-smooth texture and rich nutty flavor in all your favorite recipes.

### Fresh California Avocado Varieties

Although there are close to 500 varieties of avocados, eight varieties are grown commercially in California, and the Hass variety accounts for approximately 95 percent of the total crop.

### Organic California Avocados

Many of the varieties listed below are available as certified organic fruit.

#### **BACON**

- A mid-winter green variety
- A green-skinned variety of good quality, the Bacon is a medium-sized fruit available late-fall into spring

#### **Description:**

- Oval-shaped fruit
- Medium to large seed
- Easy peeling
- Light taste

#### **Size:**

- Medium, ranging from 6 to 12 ounces

#### **Appearance:**

- Smooth thin green skin
- Yellow-green flesh

#### **Ripe Characteristics:**

- Skin remains green, darkens slightly
- Fruit yields to gentle pressure when ripe



## **FUERTE**

- An established favorite
- Harvested late fall through spring, the Fuerte is the original high-quality California Avocado

### **Description:**

- Pear-shaped
- Medium seed
- Peels easily
- Great taste

### **Size:**

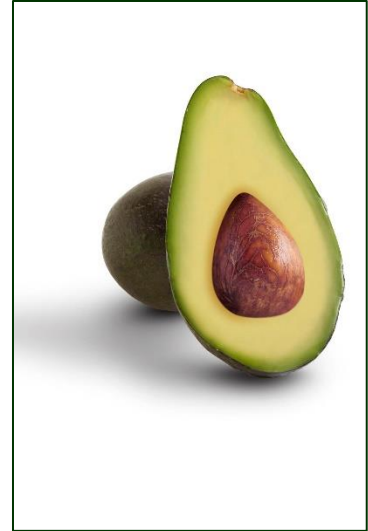
- Medium to large fruit, ranging from 5 to 14 ounces

### **Appearance:**

- Smooth thin green skin
- Creamy, pale green flesh

### **Ripe Characteristics:**

- Skin remains green
- Fruit yields to gentle pressure when ripe



## **GWEN**

- The Hass-like green variety
- Gwen is similar in appearance, taste and texture to Hass, but slightly larger

### **Description:**

- Plump oval fruit
- Small to medium seed
- Easy peeling
- Great taste

### **Size:**

- Medium to large, ranging from 6 to 15 ounces

### **Appearance:**

- Pebbly, thick but pliable green skin
- Creamy, gold-green flesh

### **Ripe Characteristics:**

- Green skin turns dull
- Fruit yields to gentle pressure when ripe



## **HASS**

- The year-round avocado
- Distinctive for its skin that turns from green to purplish-black when ripe. The Hass is the leading variety of California Avocado and has an excellent shelf life

### **Description:**

- Oval-shaped fruit
- Small to medium seed
- Easy peeling
- Great taste

### **Size:**

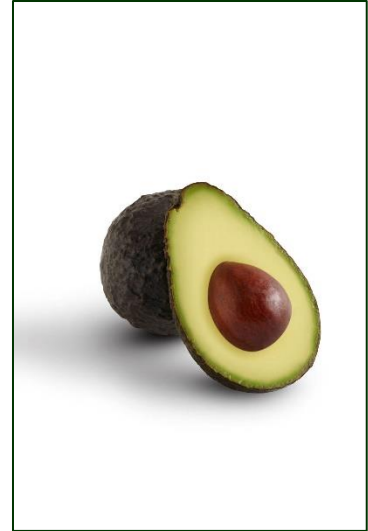
- Full range from average to large, 5 to 12 ounces

### **Appearance:**

- Pebbly, thick but pliable skin
- Pale green flesh with creamy texture

### **Ripe Characteristics:**

- Skin darkens as it ripens
- Fruit yields to gentle pressure when ripe



## **LAMB HASS**

- The California summer sun variety
- Exceptional flavor and a large robust size are the hallmark of this new avocado variety

### **Description:**

- Pebbly skin with pale green flesh
- Smooth, creamy, nutty taste
- Large in size
- Symmetrical in shape; displays exceptionally well

### **Size:**

- Ranges in size from 11.75 oz. to 18.75 oz.
- 32 = 11.75 oz. to 14.00 oz.
- 28 = 13.75 oz. to 15.75 oz.
- 24 = 15.75 oz. to 18.75 oz.



**Appearance:**

- Looks and ripens like a Hass avocado
- Oval shape
- Medium-size seed

**Ripe Characteristics:**

- Skin darkens as it ripens
- Yields to gentle pressure when ripe

**PINKERTON**

- A premium winter variety
- Pinkerton avocados have small seeds, yield more fruit per tree and are available in a full range of sizes early winter through spring

**Description:**

- Long, pear-shaped fruit
- Small seed
- Excellent peeling characteristics
- Great taste

**Size:**

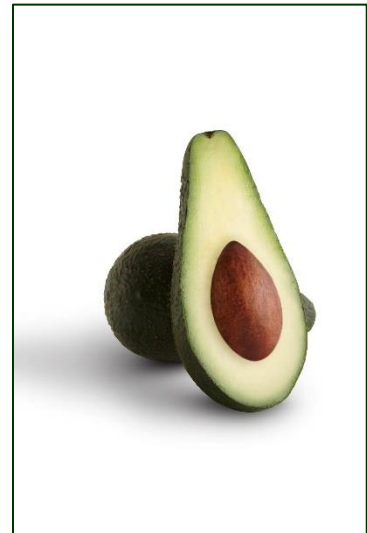
- Large fruit, ranging from 8 to 18 ounces

**Appearance:**

- Medium thick green skin with slight pebbling
- Creamy, pale green flesh

**Ripe Characteristics:**

- Green skin deepens in color as it ripens
- Fruit yields to gentle pressure when ripe



## **REED**

- The summertime variety
- A large, round fruit available in the summer months and early fall

### **Description:**

- Round fruit
- Medium seed
- Easy peeling
- Good taste

### **Size:**

- Medium to large, ranging from 8 to 18 ounces

### **Appearance:**

- Thick green skin with slight pebbling
- Creamy flesh

### **Ripe Characteristics:**

- Skin remains green
- Fruit yields to gentle pressure when ripe



## **ZUTANO**

- A season opener
- Easily recognized by its shiny, yellow-green skin, the Zutano is one of the first varieties harvested when the season begins in September and is available through early winter

### **Description:**

- Pear-shaped fruit
- Moderately easy to peel
- Light taste

### **Size:**

- Average to large fruit, ranging from 6 to 14 ounces

### **Appearance:**

- Shiny, thin yellow-green skin
- Pale green flesh with light texture

### **Ripe Characteristics:**

- Skin retains color when ripe
- Fruit yields to gentle pressure when ripe

