

## **A Comparison Of The New "Sequoia" Fig Cultivar (UC Selection 24-50E) With Recent Release "Sierra" and the Standard Fig Cultivars Used In The California Fig Industry.**

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The California fig industry is currently producing on about 16,000 acres. A "2002 Statistical Review" published by the California Fig Advisory Board and California Fig Institute at Fresno lists seven cultivars used primarily (although in some cases not exclusively) for dried whole figs and fig paste. These seven cultivars are Calimyrna (6,559 acres), a four cultivar grouping identified as "Adriatics" but including Conadria, Adriatic, Di Redo and Tena (3,364 acres in combination), Kadota (1105 acres) and Mission (3702 acres). Two additional cultivars are used in California primarily for the fresh market. These are the California Brown Turkey (about 2000 acres) and a new 2005 UC release, the Sierra fig (about 200 acres). The above nine cultivars differ substantially from one another in aspects of usage, horticultural type and fruit characteristics. The Sequoia fig is being released for use in the fresh market. Although of good quality when dried, it develops both a dark skin and a dark pulp color that limits its acceptability as a dried product. Of the above nine cultivars, only five are sold fresh. These are the CA Brown Turkey, Sierra, Calimyrna, Mission and Kadota. Only these five will be compared, as follows, to the Sequoia. The four "Adriatic" class figs are used only as whole dried figs or fig paste. All are of too small a size for the fresh market.

### **Horticultural Types**

Two horticultural types of figs are found in the California industry. The first of these, the "Smyrna" type fig, needs to be pollinated (caprifigged) in order to set fruit that will persist on the tree until maturity. The Calimyrna is the only cultivar of this type grown commercially for fresh consumption in California. All of the other four fresh market figs listed above, as well as the Sequoia, are of the "common" type. These common types do not need to be pollinated in order to set and mature fruit. The advantages of the common type figs over the Smyrna type are substantial. A common type fig grower does not need to maintain caprifig trees or to buy caprifigs from other growers, does not need to treat the caprifigs to disinfect the wasps (the pollen vectors) living in the caprifigs, does not need to distribute the caprifigs throughout the Calimyrna orchard and does not have to deal with the variables or the costs of the caprification process. Climatic factors such as heat, cold, rain, wind and disease can have a substantial impact on the success of the insect vector of the pollen and the eventual level of productivity of the Calimyrna crop. A good Calimyrna orchard often produces only in the 0.5 to 1.0 ton of dried fruit range in comparison to at least twice (sometimes three times) that tonnage from common types. Were it not for the excellent quality of the Calimyrna product, when well grown, it would probably not be planted in California at all.

### **Usage**

The CA Brown Turkey is grown almost exclusively for the fresh market. It does not dry well. The Calimyrna, Mission and Sierra are dual-purpose figs, all three dry well, with some growers often directing part of the crop to the fresh market. The Kadota is a multiple use cultivar that can be dried, canned and picked for the fresh market successfully.

### **Fruit Characteristics of the Five Fresh Market Figs Grown in California**

The Calimyrna fig is a green-yellow to yellow skinned fig with amber pulp. As noted above, the cultivar requires caprification to set a crop. The first (Breba) crop drops without coming to maturity because caprifigs containing pollen and the vector wasp are not available at the time the Calimyrna Brebas require pollination. The second crop is abundant but of limited duration (from late August to late September in Fresno County). Fruit set coincides with the mid-summer (or profichi) flight of the fig wasp. When the flight is complete, no more fruit is set for that season. Early in maturity of the second crop, fruit size is large, although size can drop off in late September. The size of the Calimyrna fruit eye (or ostiole) is the largest of all the commercial cultivars and can range from 2.2 to 3.5 mm, allowing substantial amounts of internal insect infestation and spoilage. The cultivar is also prone to large numbers of eye splits during periods of high humidity, cool weather or rain. Fruit quality, when the fruit is grown well, sets the standard for excellence.

The California Brown Turkey is a purple-violet colored fruit with areas of yellow to yellow-green visible, especially over the fruit neck and near the fruit stem. Pulp color is a strawberry red. This cultivar is of the common type, not needing caprification. The CA Brown Turkey can set a small crop of large sized first crop (Breba ) fruit. As grown in California, however, the tree is severely pruned in the winter to keep it short in height and to facilitate hand harvesting of the large second crop from the ground. This pruning essentially eliminates the first crop. The second crop is abundant and the fruit is large and retains its large size well into the harvest season. Since the CA Brown Turkey is a common type fig, once fruit production begins in late August, fruit will continue to develop and mature until fall. Production ceases only when the orchard dries out and the tree stops producing extension growth, or when a weather event (rain, frost, etc...) damages the fruit or sends the tree into dormancy. The fruit ostiole is relatively large and in some locations the fruit can be subject to insect infestation and souring. Fruit quality is good when harvested with sufficient maturity.

The Mission fig is a violet-black colored fig with the coloration usually covering the entire fruit surface. Pulp color is a strawberry red. This cultivar is a common type fig not needing caprification. The cultivar usually sets a good crop of Breba fruit that are large in size and of very good quality. These Mission Brebas are often harvested from orchards that have been established to produce fruit for drying. Such trees are often very large and picking can be difficult and expensive. The Mission second crop is abundant and also of very good quality. Fruit size of the second crop is large enough to pack fresh for a week or two, but then size diminishes rapidly, eliminating its use for the fresh market. The fruit

ostiole of both the Breba and second crop is quite small and fruit spoilage is usually not a problem. Fruit quality of both crops is very good.

The Kadota fig is a medium sized greenish-yellow skinned fruit that is grown only in limited quantity for the California fresh market. Pulp color is amber. The Kadota is a common type fig. Production of a Breba crop can be variable, from light to good in volume. The second crop is abundant but most fruit is too small to be valuable for picking fresh. Towards the end of the season many small, dry, commercially worthless fruit, known as "puffballs", can be present. The fruit ostiole is medium in size, partially restricting insect access. Fruit quality of the Brebas and second crop is sweet and good.

The Sierra fig is a new cultivar, released for planting to California growers by UC in 2005. Although developed as a high quality fig for drying, initial plantings are being made for the fresh market so that the new cultivar appears to be suitable for both purposes. Skin color of the Sierra is a yellow-green and pulp color is amber. The Sierra is a common type fig. The Breba crop of Sierra to date does not appear to have commercial value. The Breba crop has been light and the figs produced have not been particularly large or highly flavored. The second crop, however, is abundant. The fruit is medium to large in size and holds fruit size well into the fall. The fruit ostiole is very tight, effectively restricting insect access to the fruit interior. Fruit flavor is very good.

### **Sequoia Comparisons**

The new Sequoia cultivar that is proposed for plant protection and release to the California fig industry has been developed for the fresh market. The fruit is yellow-green in skin color with reddish-amber pulp. This skin color is competitive with the yellow-green Calimyrna, Kadota and Sierra but complimentary to the violet-black colored CA Brown Turkey and Mission. The Sequoia is a common type fig. This gives it an advantage over the Smyrna type Calimyrna in productivity and production efficiency. The Breba crop of Sequoia ranges from light to medium in volume. The Brebas are large in size with very good quality. The production of saleable Brebas gives the Sequoia an advantage over the Calimyrna, CA Brown Turkey and Sierra cultivars that either develop very few or no Brebas at all. The second crop of Sequoia is abundant with large to medium size. The Sequoia appears to maintain fruit size well into the fall in contrast to the small late-season fruit size of the Mission and Kadota and the absence of fruit on the Calimyrna. The ostiole or eye of the Sequoia is very tight, similar to the Sierra and Mission but substantially tighter than the Calimyrna, CA Brown Turkey and Kadota. The fruit flavor and quality of the Sequoia is as good as or better than all of the five established cultivars listed here with the exception of the Calimyrna. The Sequoia, which has Calimyrna in its pedigree, approaches the flavor of Calimyrna, but the Calimyrna, with all of its many production problems, still retains its position as the premier quality fig.