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Fig Collector's Viewpoint

Figs in Coastal Southern California

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Most people think they know all about figs: They are very ancient, easy to grow, propagate and fruit, and subject to few pests and diseases. The only real problems are birds, gophers and nematodes. That is what I used to think until

I started to really study figs. The edible fig is not a fruit botanically, but a compound flower with juicy parts. The actual "fruits" of the fig are inside the flower. Each seed is surrounded by juicy pulp which are drupelets. But for practical purposes we can call a fig a "fruit."

On the bottom of the "fruit" (syconium) is an eye (ostiole) that serves a very important function: It affords an entrance for pollinating insects. A *small eye* has the advantage of being able to exclude insects (in figs that don't require pollination) as well as being much less prone to splitting when ripe. Some figs do not require pollination to ripen fruits. Pollination is necessary, however, if the figs are going to produce viable seed.

Edible figs have four categories of varieties, of which one, the Caprifig, has two sub-categories. All edible figs have predominant female, male, or neutral flowers. They can have one, two, or three crops a year. The first crop is called the "breba" crop, the others simply the second and third crop. In some areas, the three crops seem to be continuous. In other places, there may be a short cessation of activity or leaf fall before each crop.

Four Categories of Edible Figs

Smyrna Types: This fig group is the one most grown for dried figs in Turkey and in California. (Calimyrna is the most popular variety.) These figs set virtually no breba crop and the second crop needs to be pollinated (caprified) by the fig wasp to set the crop. When the fig wasp pollinates a fig, the process is called caprification. Present breeding

efforts are directed toward attaining the flavor and quality of this type of fig in a common fig.

Caprifigs: Some of these figs are the home for the fig wasp that is used to caprify the Smyrna figs. These figs have three crops a year and their ripening must be timed to the ripening of the Smyrna figs. They must be grown in isolated locations so they will not pollinate other figs. Over-pollination will cause splitting of Smyrna and any other type of edible fig. Diseases including endosepsis can be transmitted by the fig wasp to other figs causing them to decay.

One type of Caprifig bears dry fruit that is full of pollen; it is where the fig wasp lives. The tree can be used as an ornamental as the fruit dries up and drops with nothing for the ants and birds. The other type of Caprifig is juicy and edible although it has male flowers. The fig wasp cannot live in it. This type of fig has been used in breeding work. One of the best edible Caprifigs is the Croisic. This variety has borne good crops around the San Francisco Bay area.

San Pedro Types: Figs in this group set a good breba crop without pollination (parthenocarpy). The second crop usually falls, or if it matures, is of very poor quality. The most popular member of this group is King. Soon after these figs ripen, the branches should be cut back so the next crop can form. Brebas only form on last year's wood, so cutting the branches in July gives the tree time to grow new branches and not grow too tall.

Common Types: Some figs in this group set no first crop, some set a moderate crop and some set a good crop. Both

the breba crop and the second and third crops will ripen to maturity without pollination. Nearly all the figs in the nursery trade and commercial groves are this type.

Fig Nomenclature Is Very Mixed

Because figs are of very ancient origin, they have had centuries for the names to become confused. In addition to the many countries they are grown in, the inevitable hybridization and breeding efforts of the last century have thoroughly mixed the names. Another factor, more prevalent in fig varieties than in most other crops, compounds the confusion, i.e., climate sensitivity. Fig trees of the same variety may exhibit extreme variability in shape, size, color of skin, color of pulp, and various other characteristics when grown just a few miles apart, not to mention when grown in different countries. The fig variety White Adriatic, when grown at Riverside, Calif., has a light yellow skin and light pink pulp. When grown near the southern California coast, the skin is grass green and the pulp blood red.

When figs have two or three crops, each crop may differ in size and quality; some of this variation may be due to weather at the time of ripening, but mostly is due to inherent variability in the crops.

But whatever the reason, some writers in the literature in describing figs did not always differentiate between these crops. In some countries they probably only were able to ripen either the first or second crop because of their short season. In southern California, we can get the maximum crops the tree will permit or until cold weather causes cessation of growth.

Even the people who maintained scientific fig collections in the early part of this century had the names mixed up. A famous fig collection in England called the Chiswick Collection was imported to the United States in 1894 and was eventually transferred to the Riverside California Experiment Station in 1928. Many fig varieties in the collection were found to be duplicates of each other or new names for varieties already at Riverside.

When reading descriptions of figs in the literature, it is very difficult to identify any variety when there is so much variability. Even figs grown in my backyard will show differences when grown in containers over those grown in the ground. Each year will be different. The same fig will some years be early ripening and the next year it will be late. Figs must be grown side by side to determine if they are the same fig.

The Variety Collection

Once I thought that one fig was all I needed. In Buena Park, Calif., where I used to live, my single tree, a White Genoa, did fairly well in most years, and I was more concerned with growing other types of trees. However, when I moved to Camarillo, Calif. in 1972, the climate was different. The same fig that I had in Buena Park did not ripen as well or get as sweet. So in 1983, I began to try other fig varieties that I found through other rare fruit growers and fig specialists. (Camarillo has a very cool summer climate with many cloudy days. Most figs ripen too slowly and don't develop much sweetness and flavor.) After a few years, I had collected over 100 varieties from all parts of the world.

The last five years have been spent sorting out the names and evaluating which figs are best adapted to the coastal area of Southern California. Coastal areas mean those plains facing the ocean to about 10 to 20 miles inland. Such areas would include the Los Angeles Basin and other near-sea-level sites.

It seems that each year can have different effects on each fig. If the weather stays warm during the ripening phase of each fig they will be satisfactory. But if the figs ripen during a cool phase, they will ripen incompletely and spoil. Sometimes the birds will eat them when only half ripe. During this experimental period, many varieties have been discovered that are better producers with better quality than my original White Genoa.

To determine which varieties I had, I had to obtain and read some of the fig literature. Most is quite old and many of the varieties detailed are no longer in existence or are under another name. The best references are by Dr. Condit (1955) and a more recent book by Dr. Storey (1977). I find it quite impossible to positively identify many of the varieties, because of individual variation in the fruits. Many of the descriptions are of figs grown in the warmer areas of California.

Most of the experiment stations are located at inland, warm areas because that is where the commercial fig industry is. However, many individual growers are all over the state, including cool

regions where some figs are well adapted, but worthless to a commercial fig grower. That is one of my goals: to find those varieties that may be valuable to the coastal growers.

During the 1960s and the 1970s the largest university fig collections in southern California were removed from UCLA and UC Riverside. Now most of the university collections are in Fresno and Davis, Calif. A few private collectors now have most of the rare figs in southern California.

Commercial Varieties

California Brown Turkey. Very large, dark purple skin, reddish pulp, used as fresh fruit. Poor at coast, ripens slowly, low sugar, bland flavor usually rots before it ripens. Has large eye, tends to split.

Kadota. Medium, yellow-green skin, amber pulp. Used as canned fig. Poor at coast. Skin gets tough with brown spots. If weather is hot it is an excellent, very sweet fig. Syrup exudes from eye when ripe.

Mission. Medium, black skin, reddish pulp. Used fresh and dried. Has strong fig flavor. Good at coast. Has both a breba and a second crop. Oldest California fig, originally from Spain.

Calimyrna. Large, yellow skin, yellow pulp, flattened. Used dried. Not grown in southern California as it requires the fig wasp for caprification. Figs drop if not pollinated.

Nursery Varieties

Blackjack. Large, dark purple skin, reddish pulp. Sold as a dwarf-tree form of **California Brown Turkey**. Poor on coast.

Osborn Prolific. Medium, purplish skin, amber pulp. Poor on coast. Ripens too slowly, lacks flavor and sweetness.

Conadria. Large, green-yellow skin, reddish pulp. Hybrid of White Adriatic

and succulent Caprifiig. Released in 1956. Produces excellent figs on coast. Most prolific every year. Skin cracks all over but does not split. Good either fresh or dried.

Jelly (Mary Lane Seedless). Large, yellow-green skin, yellow pulp, tiny seeds. Good on coast.

White Genoa. Large, green-yellow skin, reddish pulp. Good most years on coast. Used fresh or dried.

White Adriatic. Medium, yellow-green skin, reddish pulp. Good on coast.

Varieties Grown in Eastern U.S.

Eastern Brown Turkey. Medium, dark purple skin, reddish pulp. Good on coast.

Celeste (Sugar fig). Small, bluish purple, reddish pulp. Drops when ripe. Most are canned in S. United States. Good on coast.

Blanche (White Marseilles). Large, yellow skin, yellow pulp, flattened. Rip-ens too slowly. Low sugar content. Poor on coast.

Green Ischia (Verte). Medium, green skin, red pulp. Tough skin. Birds avoid it. Does not crack, shrivels when ripe. Good on coast.

Black Tschia (Black Provence). Medium, black skin, reddish pulp. very prolific, has red buds. Good on coast.

Brunswick (Magnolia). Large, brownish skin, reddish pulp. Coarse skin. Used mostly for preserves without the skin in Texas. Ripens too slowly on coast. Bland tasting. Poor on coast.

Dr. Condit's Varieties

All of the following varieties came out of the breeding program at Riverside, Calif. and were selected on the basis of being crack- and split-resistant; most have a small eye. All have very high sugar content and are very resistant to decay. In addition to the varieties listed, there are several others that I have not included as they are still being evaluated.

Conadria. The first variety released. See under Nursery Varieties.

Excel. Medium, yellow skin, yellow pulp.

Tena. Medium, yellow skin, pinkish pulp, roundish form.

Gulbun. Large, yellow skin, yellow pulp.

Deanna. Large, yellow skin, yellow pulp, splits but doesn't decay.

Flanders. Large, long purplish skin, pink pulp. Very firm when ripe.

Di Redo. Large, yellow-green skin, amber pulp.

Odd Varieties

Panache (Tiger fig). Medium, yellow-green striped skin, red pulp. Very ornamental. Sweet and tasty. Good on coast.

King. A San Pedro type. Brebas only in June-July. Large, pale-green skin, red pulp. Excellent on coast if warm at ripening time.

Vernino (Pasquals). Small-medium, black skin, reddish pulp. Last to ripen. Will ripen after leaf fall.

Beall. Large, red-brown skin, white to amber pulp. Seedling found in 1922. Has good breba and second crops. Good on coast and inland.

Some Cultural Suggestions for Figs

Irrigation. When figs are nearly ripe, the last irrigation should be completed. No water should be applied during the ripening period unless the trees are very dry. Excess water during the ripening period can cause splitting of figs, loss of flavor, sweetness, and consequent decay. This only applies to fig trees planted in the ground.

To hasten ripeness in cool weather.

The use of large plastic bags over the near-ripe figs has proved to be a good way to increase heat and thus ripen figs more rapidly. The bottom end is kept open to allow moisture to escape. In warmer areas, papers covers may be better used if the figs get too hot and cook. It also effectively keeps birds out.

Ways to **tell ripeness.** The best way is to feel them. If ripe they should be soft. Each variety is different. Some will crack in various patterns, some will exude a drop of syrup from the eye, some will just turn darker and shrivel, some will droop or drop to the ground. Green varieties usually develop brown spots on the skin.

If a fig is picked and milky sap exudes from the break, the fig is not ripe and will not improve later. The fig should be left until the abscission layer forms between the stem and the branch. Some figs adhere fast to the branch and must be cut off to avoid damage to the fig.

Fig Nutrition

Figs are very nutritious. Two ounces of dried figs supply 200 calories in addition to protein, calcium, phosphorus, iron, fiber, vitamins A, B and riboflavin. Over 50% of dried figs is natural fruit sugar. Figs are very digestible and promote regular elimination.

Recent Crops

Looking back at recent fig production, I found the most prolific and reliable variety this year and last year to be the Conadria, followed by the Flanders. All of the rest of the varieties had very small crops or none at all which I blame on the prolonged drought and the extremely cool summer. The drought has caused a buildup of deleterious salts that stunt growth and limit fruit production. In spite of these

retarding factors, many of the figs still managed to produce a few good-quality figs. Most of the figs did not begin to ripen until September 1st. The Jelly fig did not start to ripen until September 27th with many more coming on the tree. Since September 1st, the sun has been out every day and the figs that are left to ripen (very few) are very sweet and delicious. In a normal year the first figs ripen during July (with the exception of any brebas that ripen in June-July). This year with the very cool June-July there was virtually no breba crop and those that did ripen were bland and tasteless.

Everyone should grow at least one fig tree. After all, most figs cannot be found in grocery stores. Even though the fig is a common fruit, many good varieties are very rare and can be enjoyed by all.

Dick Watts, who retired as an agricultural biologist with the County of Ventura, grows most of his 100-plus varieties of figs in containers.

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