

Figs

*Jim Kamas, Monte Nesbitt & Larry Stein
Extension Fruit Specialists, Texas AgriLife Extension*

Introduction

Throughout history, figs have been grown and prized as one of the classical fruits sought out by ancient civilizations. It is believed that figs are native to western Asia and were spread throughout the Mediterranean by man. Figs were brought to California from Spain in the mid eighteenth century and they were then spread to warmer growing regions east of the Rocky Mountains. They are generally limited in cultivation to areas where winter minimum temperatures do not go below 5° F, although stem tissue can be injured at temperatures well above that. In winters with sustained cold, mature trees can survive temperatures in the low teens but trees can sustain severe damage during dry winters or if plants are not properly acclimated.

Figs should be planted in well drained soils and can grow well in either coarse sandy soils to relatively heavy clay soils. Figs are one of the most problem-free fruits that can be grown in mild winter areas. In sandy soils however, fig trees can suffer extensive damage from root knot nematodes

There are four distinct horticultural types of figs, but climatic factors preclude the cultivation of all but the common fig in Texas and other states along the Gulf coast. "Fruit" of common figs are parthenocarpic (formed without fertilization) and are actually fleshy stem tissue with no seeds. The structure is known as a synconium and the resinous interior contents are actually unfertilized flower structures. Commercial fig cultivation in

Texas has been largely unsuccessful, but small dooryard plantings can certainly meet all of a family's needs and provide some limited income from local sales. Figs must be ripened on the tree, are quite perishable and well planned marketing will be needed if even modest commercial ventures are pursued.

Common figs are generally grown as spreading, multi-trunked trees that can grow to twenty feet in height. They have fibrous, shallow root systems and are relatively sensitive to drought stress. Because of the wide swings in winter temperatures, figs commonly suffer mild to severe winter injury in all but the warmest parts of the state. In severely cold winters or more northern growing locations



when fig trees are frozen to the ground, some varieties produce a crop on the new current season's growth, while others will wait to come back into production the following year.

Standard Varieties

There are several standard fig varieties that have been grown throughout the south, and remain reliable choices for home or limited commercial production. The characteristics of the fruit "eye" is a major consideration in adaptation. Varieties with an open eye may be susceptible to dried fruit beetle feeding or souring when rain enters the interior of the fruit.



Fig Eye Characteristics
Left, open eye. Right, closed eye

'Alma' is a common fig variety released by the Texas Agricultural Experiment Station in 1974. It is a late season variety with very high fruit quality. The fruit skin is rather unattractive, however the flesh has an excellent rich, sweet flavor. The tree is moderately vigorous, very productive and comes into production at an early age. The eye of 'Alma' fruit is sealed with a drop of a honey-like resin that inhibits the entry of the dried fruit beetle and reducing on-the-tree fruit souring. 'Alma' is very frost sensitive, especially as a young plant and is most adapted when grown no more than 200 miles from the Gulf of Mexico. 'Alma' typically produces little or no fruit in years following severe freeze injury.



'Celeste' (aka 'Celestial') is a small, brown to purple fig that is adapted to the most diverse portions of Texas. 'Celeste' appears to be the most cold hardy of all fig varieties that have been evaluated in Texas. The tree is large, vigorous and very productive. 'Celeste' usually ripens in mid to late June, well before most other fig varieties in Texas. 'Celeste' fruit has a tightly closed eye which inhibits the entry of the dried fruit beetle and rain that may cause fruit souring. 'Celeste' has excellent fresh dessert quality with a rich sweet flavor. It is an excellent processing fig, either frozen or processed as fig preserves. Do not prune mature Celeste trees heavily because this can reduce the crop. Although relatively cold hardy, 'Celeste' usually does not produce abundant fruit in years where winter injury is sustained.



'Texas Everbearing' (aka 'Brown Turkey', 'Ramsey', 'Everbearing'), while not quite as cold hardy as 'Celeste', will produce a fair to good crop on new growth following severe freeze injury.



In addition, 'Texas Everbearing' ripens fruit over an extended period of the summer from June through August, making it prized as a reliable producer almost every year. The fruit is medium to large, with a reddish-brown skin and a reddish-pink pulp. The fruit has a mild sweet flavor. The fruit is plump with a short stem and moderately closed eye which reduces fruit souring on the tree. In very wet years, however the fruit can sour or crack.

Varieties for Trial Planting

More recently, variety trials have identified additional promising varieties that are suggested for trial plantings.

'**Lemon**' is a fig variety that was found growing on the banks of a levee near Del Rio, Texas. It has an attractive yellow skin with a creamy, smooth flesh and a closed eye. 'Lemon' has a unique flavor with mild citrus notes. It has produced well in Fredericksburg and San Antonio and is suggested for trial plantings on the southern half of the state.



'Lemon' is somewhat cold tender, but produces moderate crops on new growth in years winter freezes kill it to the ground.

'**Bournabat**' is a fig variety that is believed to have originated in the town of Bournabat, on the Turkish Aegean coast, northeast of the town of Smyrna. It was introduced into the United States through France. It bears a large fruit with a pinkish skin and a juicy, sweet luscious flesh with a unique flavor and texture.



'**Blue Giant**' was introduced by Fanick's Nursery in San Antonio. It is a large fig with a purple skin and a pinkish flesh and a closed eye. It is less cold hardy than 'Celeste', but is quite productive in south and coastal parts of the

state. It has a mild flavor and is quite sweet when fully ripened on the tree.



'**LSU Purple**' was released in 1991 by LSU and is quickly becoming a standard in many fig growers' fields. Medium to dark purple skin with a strawberry colored flesh, this fig has a



mild, sweet flavor that many find most appealing. The fruit has a closed eye which deters insect and fungal problems near harvest. LSU Purple is relatively cold hardy and widely adapted across the Gulf Coast.

Planting & Care

Fig trees are traditionally planted as dormant rooted cuttings in late winter or early spring and perform well if planted two to three inches deeper than grown in the nursery. Because trees can reach heights of 20 feet, trees should be planted no closer than 16' apart.

Dig a hole deeper and wider than necessary for the root system. Place the tree upright at the proper depth. Crumble the soil around the roots, and pack it down several times during the filling operation to bring all roots into contact with moist soil. After planting, water the tree to settle the soil firmly around the roots.

Do not fertilize at the time of planting. The initial growth of the young fig tree will come from stored carbohydrate reserves in the young trunk and roots. The dormant trunk should be cut back by approximately one third at planting to help compensate for root loss

when it was dug in the nursery. Because dormant pruning is an invigorating action, we suggest that even dormant potted plants be cut back to encourage vigorous growth the first season.

Figs perform best when planted in locations that receive full sun exposure. It is common to see figs planted on the south or east side of a home or barn to help protect from cold winter temperatures and to make sure morning sun help dries fruit and foliage quickly after an evening rain.

In sub-tropical locations, figs can be grown as single-trunked trees, but are commonly grown as multi-trunked plants in more temperate parts of Texas. In years when figs are frozen to the ground, they typically respond by sending



Young, multi-trunk fig trees

up a multitude of new shoots. Once shoots are approximately two feet high, it is best to go and select five or six strong shoots to be kept as new trunks. Remember, summer pruning is a dwarfing action, so consider reducing the number of new shoots over a two to three week period to lessen the shock of leaf area loss. In a single growing season, the fig tree that was frozen to the ground can rebound, perhaps bear fruit late that summer and be positioned to be in full production the following year.

Because they are shallow rooted, figs will benefit from organic mulch through conserved soil moisture and improved soil structure. Small, frequent amounts of nitrogen will benefit both

young and mature fig trees.

Insects & Diseases- Fig rust (*Cerotelium fici*) is the greatest disease threat to fig production in Texas and disease severity is worse in areas or seasons with high rainfall. Infected leaves exhibit browning on the leaf surface with orange fruiting structures on the lower part of the leaf. Severely affected leaves fall prematurely leaving the tree weakened and unable to adequately ripen the crop.

Sanitation, raking and destroying infected leaves is an important part of disease control.

There are currently no conventional fungicides labeled for the control



Fig rust on foliage

of fig rust. Organic materials containing copper are generally effective at controlling fig rust if applied at the first onset of the disease. Dried fruit beetle is typically the only insect pest that impacts the quality of ripening figs. Choosing varieties with closed eyes is the best method for limiting injury. No conventional insecticides are currently labeled for control, but elemental sulfur can deter dried fruit beetle from colonizing fig trees with ripening fruit. Registration of organic materials change frequently, so refer to the National Organic Program or Organic Materials Review Institute for up-to-date registration information.

Root-knot nematodes, *Meloidogyne sp.*, are microscopic, soil inhabiting worms which attack the plant's root system. They attack and feed on roots, causing them to swell or gall; thus, interfering with normal uptake of water and nutrients. These galls are easily seen if root samples are observed. Nematode problems may go unnoticed for several years. As a

heavy population builds up, the tree loses vigor and declines gradually. Nematodes contribute to premature fruit drop. To prevent root-knot nematodes in figs, obtain nematode-free plants and plant in nematode-free soil.

Fig mosaic virus is thought to be a disease caused by a complex of viruses that invade fig trees. The disease first appeared in California but has now spread to most areas in the United States where figs are grown. Leaves on infected fig trees exhibit a mottled appearance that typically appears with the heat of mid-summer. On infected trees, fruit quantity is reduced and fruit are smaller and misshapen. There is no control for fig mosaic virus other than to carefully inspect nursery material prior to purchase.

Propagation

Figs are one of the easiest fruit crops to propagate. Hardwood cuttings taken when the plants are fully dormant readily root and are most commonly used for propagation of figs. Cuttings should be six to ten inches in length and approximately one-half to one inch in diameter. Place the cuttings in a warm, humid environment such as wrapping them in a moist paper towel and placed in a polyethylene bag for 10-14 days to encourage callus formation. Cuttings can then be planted in pots in a commercial potting media to encourage rooting and shoot formation. Softwood cuttings can also be used for propagation, but a mist system is usually needed for successful plant production.

Freeze Protection

Figs are in fact a sub-tropical crop, but can withstand varying degrees of sub-freezing temperatures. The degree to which they can avoid cold injury is dependent on variety, soil moisture status, and climatic pre-conditioning. During dry falls and winters, thoroughly watering fig trees a few days before a hard freeze can help minimize freeze injury. Typically with sustained cold, figs can tolerate 17° F, but young plants or young, tender trunks are more susceptible than older, mature trunks. Some growers choose to mound older trees with spoiled hay two to three feet above the ground

line for insulation. Young plants can similarly have wire cages placed over them at the onset of winter. These cages can be stuffed with hay, lawn clippings or leaves for protection. Cages should be removed after the risk of spring frost has passed and on both old and new plants, organic matter can be pulled back from the trunk and be used as organic mulch for weed control.



Young fig plants fitted with wire cages to facilitate packing for freeze protection.

For More Information

<http://aggie-horticulture.tamu.edu/fruit-nut>