

## Texas Fruit and Nut Production

# Figs

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**F**igs are one of the most problem-free fruits that can be grown in areas with mild winters. Prized since ancient times, figs are believed to be native to western Asia. They were brought to California from Spain in the mid 1700s and then spread to the warmer growing regions east of the Rocky Mountains.

Common figs are generally grown as spreading, multi-trunked trees that can grow to 20 feet tall (Fig. 1). They have shallow, fibrous root systems and are relatively sensitive to drought stress.

The “fruit” of common figs are formed without fertilization (parthenocarpic) and are actually fleshy stem tissue with no seeds. The gelatin-like interior is actually unfertilized flower structures.

Although commercial fig cultivation in Texas has been largely unsuccessful, small dooryard plantings can meet a family’s needs and provide some limited income from local sales. Because figs must be ripened on the tree and are quite perishable, even modest commercial ventures must have well-planned marketing strategies



Figure 1. Multi-trunked fig tree

## Climate

Figs are generally limited to areas where temperatures do not drop below 5°F, although the stem tissues can be injured at much higher temperatures. In winters with sustained cold, mature



Figure 2. 'Alma'



Figure 3. 'Celeste'



Figure 4. 'Texas Everbearing'

Table 1. Standard fig varieties used for home or limited commercial production in Texas

Variety	Climate	Fruit	Harvest	Notes
'Alma'	Very frost sensitive, especially when young;	Very high quality, excellent, rich, sweet flavor; skin is unattractive	Very productive; produces at an early age; late season; produces little or no fruit in years after severe freeze injury	Moderately vigorous tree; eye is closed; best grown no more than 200 miles from the Gulf of Mexico
'Celeste' ('Celestial')	Appears to be the most cold hardy of all fig varieties that have been evaluated in Texas	Small, brown to purple; excellent fresh dessert quality with a rich sweet flavor; an excellent processing fig, either frozen or processed as fig preserves	Very productive; harvest is often in mid to late June, well before most other fig varieties in Texas; usually produces fewer fruit in years after winter injury; heavy pruning of mature trees reduces the crop	Large, vigorous tree; tightly closed eye; adapted to the most diverse portions of Texas
'Texas Everbearing' ('Brown Turkey', 'Ramsey', 'Everbearing')	Less cold hardy than 'Celeste'	Medium to large; plump with a short stem; reddish-brown skin; reddish-pink pulp; mild, sweet flavor	Reliable producer almost every year; fruit ripens over an extended period from June through August; produces a fair to good crop on new growth after severe freeze injury	Moderately closed eye; the fruit can sour or crack in very wet years

trees can survive temperatures in the low teens. However, trees can sustain severe damage during dry winters or if they are not properly acclimated.

Because of the wide swings in winter temperatures, figs commonly suffer mild to severe winter injury in all but the warmest parts of Texas. When fig trees are frozen to the ground in severely cold winters or more northern areas, some varieties produce a crop on the current season's growth; others return to production the next year.

## Soil

Plant figs in well-drained soil. Although they will grow in soils ranging from coarse sands to relatively heavy clay, they can suffer extensive damage from root knot nematodes in sandy soils.

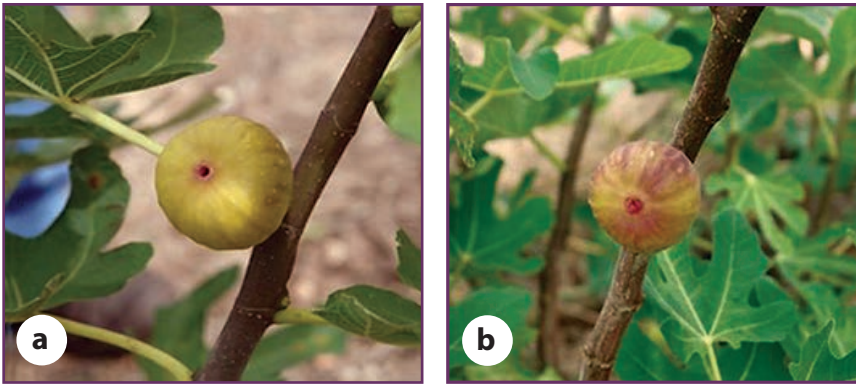


Figure 5. Fig eye characteristics: a) open eye, and b) closed eye

## Varieties

Of the four distinct horticultural types of figs, only the common fig is produced in Texas and other Gulf Coast states. Three standard fig varieties have been grown throughout the South and are reliable choices for home or limited commercial production: ‘Alma,’ ‘Celeste,’ and ‘Texas Everbearing’ (Table 1, Figs. 2 through 4).

A major consideration in variety choice is the characteristics of the fruit “eye.” Varieties with an open eye may be susceptible to feeding by the dried fruit beetle or souring when rain enters the interior of the fruit (Fig. 5).

Research has identified additional promising varieties that are suggested for trial plantings. They are ‘Blue Giant,’ ‘Bournabat,’ ‘Lemon,’ and ‘LSU Purple’ (Table 2, Figs. 6 through 9).

## Propagation

Figs are one of the easiest fruit crops to propagate. Hardwood cuttings that are taken when the plants are fully dormant will readily root and are most commonly used to propagate figs.

The cuttings should be 6 to 10 inches long and about ½ to 1 inch in diameter. To encourage callus formation, place the cuttings in a warm, humid environment such as in a moist paper towel placed in a plastic bag for 10 to 14 days.

Plant the cuttings in pots in commercial potting media to encourage root and shoot formation. Although softwood cuttings can also be used for propagation, they usually need a mist system for successful plant production.

## Site selection

Figs perform best when planted in locations that receive full sun exposure. It is common to see figs planted on the south or



Figure 6. 'Blue Giant'



Figure 7. 'Bournabat'



Figure 8. 'Lemon'



Figure 9. 'LSU Purple'

Table 2. Fig varieties suggested for trial plantings in Texas

Variety	Climate	Fruit	Harvest	Notes
'Blue Giant'	Less cold hardy than 'Celeste'	Large; purple skin and a pinkish flesh	Quite productive in south and coastal parts of the state; mild flavor and is quite sweet when fully ripened on the tree	Introduced by Fanick's Nursery in San Antonio; closed eye
'Bournabat'	Rather cold tender in the Hill Country, but should perform well in coastal areas	Large; pinkish skin; juicy, sweet luscious flesh; unique flavor and texture	Modest production after hard freeze in late summer through fall	Believed to have originated in the town of Bournabat, on the Turkish Aegean coast; closed eye
'Lemon'	Somewhat cold tender; suggested for trial plantings on the southern half of Texas	Attractive yellow skin; creamy, smooth flesh; unique flavor with mild citrus notes	Produces moderate crops on new growth in years that winter freezes kill it to the ground; has produced well in Fredericksburg and San Antonio	Found growing on the banks of a levee near Del Rio, Texas; closed eye
'LSU Purple'	Relatively cold hardy; widely adapted across the Gulf Coast	Medium to dark purple skin; strawberry-colored flesh; mild, sweet flavor	Good productivity in most years	Released in 1991 by Louisiana State University; quickly becoming a standard in many fig growers' fields; closed eye

east side of a home or barn to help protect from cold winter weather and to make sure that morning sun helps the fruit and foliage dry quickly after an evening rain.

## Planting and care

Fig trees are traditionally planted in late winter or early spring as dormant rooted cuttings. Plant them 2 to 3 inches deeper than they were grown in the nursery. Because the trees can reach 20 feet tall, plant them no closer than 16 feet 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 planting. The initial growth of the young fig tree will come from stored carbohydrate reserves in the young trunk and roots. Cut back the dormant trunk by about a third at planting to help compensate for root loss when the tree was dug up in the nursery. Even dormant potted plants should be cut back to encourage vigorous growth the first season.

## Mulching

Because their roots are shallow, figs will benefit from organic mulch. The mulch will conserve soil moisture and improve the soil structure.

## Fertilization

Small, frequent applications of nitrogen will benefit both young and mature fig trees.

## Pruning and training

In subtropical locations, figs can be grown as single-trunked trees. But they are commonly grown as multi-trunked plants in more temperate parts of Texas (Fig. 10).

In years when figs are frozen to the ground, they typically respond by sending up a multitude of new shoots. Once shoots are about 2 feet high, select five or six strong shoots to be kept as new trunks.

To lessen the shock of leaf area loss, consider reducing the number of new shoots over a 2- to 3-week period. In a single growing season, a 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.

## Freeze protection

Figs can withstand varying degrees of subfreezing temperatures. The degree to which they can avoid cold injury depends on the variety, the amount of moisture in the soil moisture, and the trees' level of conditioning for the cold.

To minimize freeze injury during dry falls and winters, thoroughly water the fig trees a few days before a hard freeze. Figs can usually tolerate sus-



Figure 10. Young, multi-trunk fig trees



Figure 11. Young fig plants fitted with wire cages to be packed for freeze protection

tained temperatures to 17°F, but young plants and young, tender trunks are more susceptible than are older, mature trunks.

Some growers mound spoiled hay 2 to 3 feet above the ground line of mature trees for insulation. Young plants can similarly have wire cages placed over them at the onset of winter (Fig. 11). These cages can be stuffed with organic matter such as hay, lawn clippings, or leaves for protection.

After the risk of spring frost has passed, remove the cages from both old and new plants. The organic matter can be pulled back from the trunk and be used as organic mulch for weed control.

## Diseases

The greatest disease threat to fig production in Texas is fig rust (*Cerotelium fici*). Fig rust is more severe in rainy areas and seasons.

Infected leaves turn brown and develop orange fruiting structures on the lower part of the leaf (Fig. 12). Severely affected leaves fall prematurely, leaving the tree weakened and unable to adequately ripen the crop.

To control the disease, rake and destroy the infected leaves. No conventional fungicides are approved to control fig rust. Organic materials containing copper are generally effective at controlling fig rust if applied at the onset of the disease.

Another disease is fig mosaic virus, which is thought to be 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.

The leaves on infected fig trees become mottled, usually in the heat of midsummer. The trees bear fewer, smaller, misshapen fruit.

There is no control for fig mosaic virus other than to carefully inspect nursery material before purchase

## Insects and other pests

The only insect pest that typically affects the quality of ripening figs is the dried fruit beetle. To limit injury, plant varieties with closed eyes.

Although no conventional insecticides are approved to control this beetle, elemental sulfur can deter it from colonizing fig trees with ripening fruit. Because the registration of organic materials

changes often, refer to the National Organic Program or Organic Materials Review Institute for current registration information.

Root-knot nematodes, *Meloidogyne* sp., are microscopic worms that attack and feed on roots, causing them to swell or gall. They disrupt the roots' ability to take up water and nutrients. These galls are easily seen on root samples.

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 them in nematode-free soil.

## Harvest

Figs bear their first crop in late spring, but many varieties produce a larger crop in late summer through fall. When frozen to the ground, the fall crop may be smaller, delayed, or in some varieties, absent.



Figure 12. Fig rust on foliage

## For more information

Fruit and Nut Resources, Aggie Horticulture®:  
<http://aggie-horticulture.tamu.edu/fruit-nut>

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