

Commercial Crop Production

Fruit and Nut Crops - Fig

Integrated Disease Management

Many homeowners in Louisiana, especially in the southern regions, where the threat of freeze damage is minimal, grow fig trees. Figs are well-adapted to the climate in Louisiana and produce an abundance of fruit. Several important diseases affect fig production in Louisiana. These diseases can only be managed using cultural practices and variety selection since no fungicides are currently labeled for use on figs in Louisiana. A list of varieties suitable for production in Louisiana is available in LSU AgCenter Publication 1529, "Figs for Commercial and Home Production in Louisiana."

DISEASE

Symptoms, source of inoculum and management of fig diseases.

Fig rust (*Cerotelium fici*)

Symptoms: Small, yellowish spots on the leaves that turn reddish-brown as the spots enlarge. Spots are relatively smooth on the upper surface of leaves while on the lower surface the spots appear as small blisters. Heavily infected leaves turn yellow or brown and drop prematurely. Fruit are not affected by fig rust.

Source of Inoculum: Fungal spores survive on fallen, infected and diseased leaves. Spores are dispersed by wind and splashing rain.

Management: Collect and destroy leaf debris. Do not compost diseased leaves. Selective pruning of the trees will increase airflow and decrease leaf moisture. **No fungicides are registered for fig rust management in Louisiana.**

Thread blight (*Pellicularia koleroga*, formerly *Corticium stevensii*)

Symptoms: Symptoms appear as semicircular brown spots at the base of the leaf. Most infected leaves shrivel and dry up but do not fall off the tree. Leaves may also be covered with irregular holes. Sometimes white threads or mycelia can be seen on the underside of the leaves. Dead leaves often hang on the tree by threadlike strands similar to spider webs. Figs turn hard and dry if the disease occurs before the fruit ripens.

Source of Inoculum: The pathogen survives as sclerotia (overwintering structures) on the plant, in plant debris or in the soil.

Management: Collect and destroy leaf debris. Selective pruning will increase airflow in the plant canopy. Pruning should be done in the dormant season to avoid freeze damage. Do not overhead irrigate as leaf wetness promotes infection. **No fungicides are registered for thread blight management in Louisiana.**

Leaf spot (*Cercospora fici*)

Symptoms: The disease starts as irregular reddish-brown angular spots on the leaves. As the spots enlarge, they develop a yellow halo. Severe infection leads to leaf drop. Symptoms also appear on the fruit. Spots on the fruit are brown, slightly sunken with a dark margin.

Source of Inoculum: The fungus survives on infested seed and crop debris. Spores are disseminated by wind and splashing rain and irrigation water.

Management: Collect and destroy leaf debris. Selective pruning of the trees will increase airflow in the plant canopy and around planting. **No fungicides are registered for leaf spot management in Louisiana.**

Web blight (*Rhizoctonia solani*)

Symptoms: Typical infection starts at the base of the leaves and spreads outward in a fanlike manner. Symptoms appear as yellowish, water-soaked lesions on the leaves that enlarge rapidly, and the upper leaf surface looks silvery in appearance. The white- to light-brown fungal mycelium is readily visible on the underside of the infected leaf, which may shrivel up and die. Some infected leaves shrivel, die and cling to the twig.

Source of Inoculum: The pathogen survives as sclerotia on the plant, in plant debris or in the soil.

Management: Collect and destroy leaf debris. Selective pruning of the trees will increase airflow in the plant canopy and around planting. Do not wet leaves during irrigation. **No fungicides are registered for web blight management in Louisiana.**

Root-knot nematodes (*Meloidogyne* spp.)

Symptoms: Damage from root-knot nematode is progressive and results in poor growth and low vigor of plants, yellowing of foliage, low yield and poor fruit quality. Infected roots are characterized by small galls or swellings on the roots.

Source of inoculum: Root-knot nematode survives from season to season as eggs in the soil. After the eggs hatch, the second-stage juveniles infest the roots.

Management: Nematodes are difficult to control but can be prevented. Choose a planting site where root knot susceptible plants such as tomatoes, okra or tobacco have not been recently grown. High organic matter in the soil can reduce root-knot

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nematodes. Plant only nematode and disease-free plants. Keep the plants in good health with regular fertilizer application and maintain adequate moisture around the plants.

Botrytis limb blight or Botrytis dieback (*Botrytis cinerea*)

Symptoms: The fungus enters the fruit after frost damage in the early winter and moves to the shoot causing cankers resulting in sudden wilting of new shoots in the spring. In late winter and early spring, buff-colored spores develop on infected shoots and fruits. Foliage on infected shoots wilts and turns light green or brown in color. Sclerotia form on heavily infected limbs.

Source of Inoculum: Heavy frosts initiate disease, and wet and cool springs favor disease development. Spores are wind-dispersed.

Management: Remove diseased shoots by pruning below the cankered area. Sanitize pruners with an EPA registered disinfectant between cuts.

Surface mold or Alternaria rot (*Alternaria alternata*, *Cladosporium herbarum*)

Symptoms: Occurs on both green and ripe fruit. Lesions first appear as small sunken specks on the fruit. Specks caused by *Cladosporium* are olive-green to yellow. Specks caused by *Alternaria* are light brown to black. Both pathogens can be present at the same time on the fruit although *Alternaria* is primarily observed on ripe fruit. Lesions are distributed over the entire surface of the fruit.

Source of Inoculum: The fungi overwinter on dead dried plant material or on the surface of the soil. Spores are dispersed by wind or on dust particles.

Management: Pick fruit before it is overripe. To limit disease spread, reduce dust in the orchard. To prevent disease development during storage, use clean picking boxes and storage containers. **No fungicides are registered for surface mold or Alternaria rot management in Louisiana.**

Aspergillus rot (*Aspergillus* spp.)

Symptoms: The internal tissues of figs turn bright yellow to olive depending upon the species. Decaying fruit produced masses of powdery spores. Although rare, figs infected by *A. flavus* or *A. parasiticus* are contaminated with aflatoxins and should not be consumed or used for animal feed.

Source of Inoculum: The fungus overwinters on plant debris and is dispersed by wind or on dust particles.

Management: Varieties with small ostioles (eye of the fig) are less susceptible to *Aspergillus* rot. Avoid water stressing the trees and reduce dust in the orchards to reduce spore dispersal.

Fig endosepsis (*Fusarium* spp.)

Symptoms: Initially, a part of the infected fruit shows pink or brown internal discoloration, as well as discolored flowers. As the disease progresses, the pulp becomes soft and purple-brown water-soaked areas appear on the skin.

Source of Inoculum: The fungus overwinters in the summer caprifig crop or as conidia on mummified fruit of the summer caprifig crop. Spores produced in the spring are carried from flower to flower by the wasp *Blastophaga psenes* during pollination.

Management: Sample fruits when wasps start emerging and discard fruits with any internal discoloration.

Fig mosaic (*Fig mosaic virus*)

Symptoms: Distinct yellow spots appear on foliage with diffuse margins. These spots blend gradually into the green healthy leaf. The mosaic spots are uniformly distributed across the leaf surface or as irregular patches on the leaf surface. Mature spots develop a rust-colored band along the margins. Mosaic spots on fruits are similar to those on leaves. Premature fruit drop may occur.

Source of Inoculum: The virus is vectored by fig mites (*Aceria ficis*) or can be transmitted by grafting.

Management: Choose disease-free trees for propagation material. Examine propagated plants before planting in the field. Controlling fig mites may help to reduce incidence of the disease.

Fig smut (*Aspergillus niger* and *Aspergillus* spp.)

Symptoms: Internal tissues of the fruit or the entire fruit discolor and turn into black powdery masses of spores.

Source of Inoculum: The fungus is present in the soil and decaying plant material. Nitidulid beetles, vinegar flies, predaceous mites and thrips disperse fungal spores. The fungus may directly attack fruit through wounds.

Management: Remove all old fruit and debris from the field.

Sour rot or Souring (various yeasts and bacteria)

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Symptoms: Symptoms can be observed when the fruit begin to open. The inner flesh of figs becomes pink and water soaked. A pink bubbly syrupy liquid exudes from the figs, which then give off a fermentation odor. As the disease progresses, the pulp disintegrates into a white, watery pulp. Figs eventually sag on the twig and dry up. Diseased fruit may remain on the tree or drop to the ground.

Source of Inoculum: Nitidulid beetles and vinegar flies feed on the exudates of rotting fruit and can disperse the yeast and bacteria from fruit to fruit or tree to tree.

Management: Controlling beetles and flies may to reduce disease incidence. Plants with closed “eyes” (Celeste, Alma and Texas Everbearing) are resistant to sour rot. Plants with open “eyes” are susceptible to souring.

Information in this section was last updated in September 2022 by R. Singh.