

PLANT HEALTH CARE REPORT



Live Oak in Texas

Live oak (*Quercus virginiana*) is perhaps the most highly prized landscape tree throughout Texas. Native to the coastal plain and South-Central Texas, live oak is widely planted in most areas of the state. A related species, commonly referred to as Plateau or Texas live oak (*Q. fusiformis*), is native to Central Texas through Oklahoma and mountainous areas of Mexico. That species is multi-stemmed and shorter than live oak.

Live oak is ideally suited for specimen plantings on residential properties, commercial sites, and parks where there is ample space to accommodate the massive crown. The crown has a dense, spreading habit that provides shade for most of the year. Leaves are retained throughout the winter, hence the name live oak.

Live oak is known for its longevity and durability. Trees can live 200 years or more in undisturbed landscapes. Strong wood characteristics, low branching habit, and dense root system combine to make this species highly resistant to storm damage.

Live oak thrives on moist, well-drained soils. It tolerates drought conditions and root problems that lead to moisture stress. It is also tolerant of salt spray, which makes it an exceptional species for coastal



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plantings. Live oak is intolerant of excessive soil moisture due to poor drainage and over-irrigation.

In Texas, live oaks have a unique trait of “sending-up” sprouts from their root system to form new trees. In natural areas, stands of trees commonly referred to as “motts” develop that have an interconnected root system. Motts can be comprised of hundreds of trees spreading across many acres of land. Live oaks that pre-date residential development may have shared root systems when neighborhoods are built within these motts.

Oak wilt is the most destructive problem of live oak in Texas. Caused by a fungus, *Bretziella fagacearum*, oak wilt causes a rapid wilting and death of the tree. The fungus spreads aboveground by sap beetles and presumably oak bark beetles. Once a tree becomes infected, the pathogen can spread locally through root grafts of neighboring trees. This allows the disease to spread rapidly through a stand (mott) of live oaks that can consist of an entire neighborhood.



Mott infected with oak wilt. The disease has spread in the neighborhood through root grafts.

Monitoring and Treatment Considerations for Live Oak in Texas

Mid-winter (before February)

Expose and inspect root collar for problems; add mulch as needed. *Remove dead, dying, diseased, and broken branches. *Reduce or remove branches to improve light and air penetration. Pruning cuts should be painted with a wound dressing where oak wilt is prevalent to reduce the risks of overland spread of the fungal pathogen by beetle vectors. Sample soil for nutrient and pH levels as needed.

Late winter

Monitor for scale insects; apply dormant treatment as needed. *Fertilize, adjust pH, and amend soil according to soil analysis.

Early spring

Apply first fungicide treatment to suppress twig blight if there is a history of this disease. Monitor for aphids and spring defoliators; treat as needed.

Mid-spring

Apply second fungicide treatment to suppress twig blight if there is a history of this disease. Apply preventive treatment for oak wilt if needed; remove diseased trees ASAP and install trenches between diseased and healthy trees if appropriate. Monitor for scales, spring defoliators, and termites; treat as needed.

Late spring

Monitor for scale crawlers, aphids, and spider mites; treat as needed. Monitor irrigation and recommend additional soil moisture (directed away from the root collar) as needed. If canker lesions or

Phytophthora root rot is prevalent in wet, poorly drained soils, especially when live oak is growing in heavily irrigated lawns. Root disease also infects old trees and those stressed by drought and root disturbances, often caused construction damage. Trees with fill soil or mulch against the root collar or where irrigation water is directed at the base of the tree are particularly prone to root and basal stem disease. Other diseases of live oak include twig blight, leaf spots, and powdery mildew.

Live oak is rarely affected by destructive insect pests. The major exception is the Formosan subterranean termite, which is expanding its range and is a serious problem in southeastern Texas. Minor insect pests that affect live oak include aphids, caterpillar defoliators (cankerworm and tent caterpillars), and scale insects. These minor insects often go unnoticed, and populations can build up after several years of infestations until a decline in plant health becomes evident. During hot, humid periods in summer, spider mites build to damaging levels.

On live oaks that are weakened by age, construction activities, or other stressors, borers may infest branches and stems leading to dieback and decline.

decline is evident, submit stem samples for Phytophthora root rot testing; treat if soil is saturated for extended periods of time due to spring rains.

Summer

Monitor for scales and spider mites; treat as needed. Monitor irrigation and increase or decrease as needed.

Fall

If scales, aphids, and gall wasps were problematic this past growing season, consider treating with an appropriately timed systemic product. *Fertilize, adjust pH, and amend soil according to soil analysis.

*Fertilization and pruning may be done during other seasons if necessary, but tree wounding (including pruning) should be avoided February through June in Texas.
