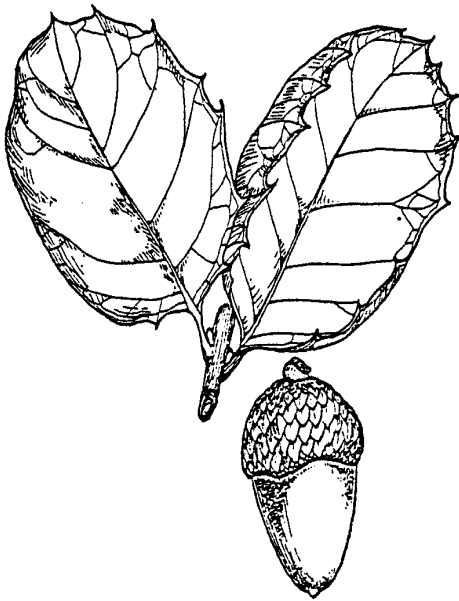




Live Oak in Texas



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.

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

Live oaks are known for their longevity and durability. Trees can live 200 years or more in undisturbed landscapes. Strong wood characteristics, the spreading, low branching habit and a deep root system combine to make this species highly resistant to storm damage.

Like most trees, live oak thrives on moist well-drained soils. However, this species tolerates urban conditions including compacted or severely disturbed soils. Live oak 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 plantings. Live oak is intolerant of excessive soil moisture due to poor drainage and excessive irrigation. Phytophthora root rot is prevalent in wet soils especially when live oak is growing in heavily irrigated lawns.

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 a shared, (interconnected) root system. Motts can be comprised of hundreds of trees spreading across many acres of land. Oaks throughout entire neighborhoods may have shared root systems when residential developments are built within these motts.

Oak Wilt is the dominant pest problem of live oak especially in the South Central portion of Texas. Caused by a fungus, *Ceratocystis fagacearum*, oak wilt causes a rapid wilting and death of the tree. The fungus is vectored long distance by oak bark beetles and sap beetles. Once a tree becomes infected, the pathogen spreads through root grafts. This allows the disease to spread rapidly through a stand (mott) of live oaks that sometimes can consist of an entire neighborhood.

Phytophthora root rot is prevalent on wet poorly drained soils. Root disease also occurs on old trees and those stressed by drought and root disturbances such as 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 that can plague live oak include twig blight, leaf spots and powdery mildew.

Insect pests that affect live oak include a “leaf curl” aphid that infests succulent new growth especially in the early spring flush. This insect will cause conspicuous curling and distortion of the leaves. Early spring defoliators including tent caterpillars and cankerworms occasionally reach levels that cause defoliation that can seriously weaken trees. Several species of scale insects commonly infest live oak. These insects often go unnoticed 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 stress, borers may infest branches and the trunk leading to dieback and decline



Monitoring and Treatment Considerations for Live Oak in Texas

Timing	Treatment
Winter	Prune the crown to remove dead, dying and conflicting limbs and other objectionable branches. If the crown is extremely dense, thin out live branches to improve light and air penetration. Where oak wilt is prevalent, painting pruning cuts is still a recommended practice although there is no research from Texas that supports this treatment. Excavate soil and mulch as needed to expose the root collar. Sample soil for nutrient and pH levels as needed.
Late Winter	Monitor for scale insects. Apply horticultural oil treatments if scales are present. Fertilize based on soil test results. Fertilization can be accomplished at other times of the year. In Texas, fall is another excellent time to fertilize
Early Spring	Monitor for spring defoliators and leaf curl aphids. Treat as needed. Apply first fungicide treatment to suppress twig blight if this disease has been damaging. If leaf curl aphids are severe, treat with Merit® in the fall to suppress damage in the subsequent year.
Mid Spring	Continue monitoring for defoliators and scale insects. Treat as needed. Apply second fungicide treatment as needed. If trees are being challenged by oak wilt, treat healthy oaks with Alamo® in advance of the oak wilt front. Remove diseased trees as soon as possible and consider installing trenches between disease and healthy trees to reduce the risk of root graft transmission of the oak wilt fungus.
Late Spring	Monitor for scale insect crawlers, aphids and spider mites. Treat as needed. Monitor soil moisture and recommend irrigation as needed. Ensure that irrigation is not directed at root collar. If canker lesions or decline are evident, sample and treat as needed with a soil applied systemic fungicide to suppress Phytophthora.
Summer	Monitor for scale and spider mites. Treat as needed. Monitor soil moisture. Increase or decrease irrigation as needed.
Fall	A soil applied insecticide treatment may be applied in fall to suppress scale, aphid, and gall wasp populations the next year. This is recommended where these pests have been exceptionally damaging. Fertilize as needed