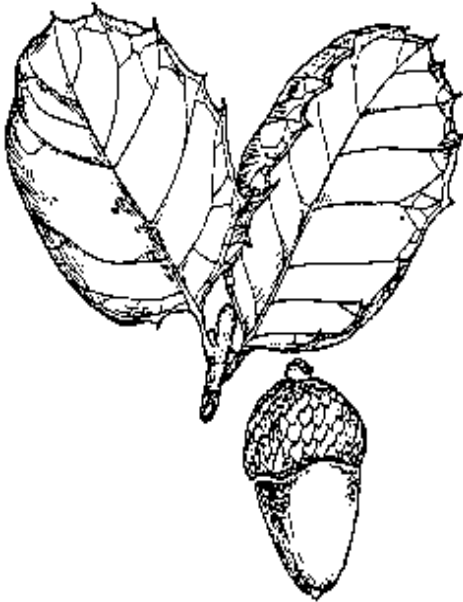


Plant Health Care Recommendations for Coast Live Oak



Coast live oak (*Quercus agrifolia*) is a highly prized landscape tree which is native to coastal areas of California. It is ideally suited for specimen planting on large residential properties, commercial sites and parks where there is ample space to accommodate the massive, spreading crown. Leaves remain evergreen throughout the winter, hence the name live oak. The crown tends to be dense and rounded providing shade for most of the year.

Coast live oak naturally grows on dry, upland slopes. Soils must be well drained in order to avoid root diseases. On fertile sites with ample soil moisture, growth of young trees can be moderate to fast. Trees are healthiest when growing in full sun.

Coast live oak is susceptible to several insect pests which periodically occur at damaging levels. Since 1998, thousands of oaks have died due to “sudden oak death”, a combination of bark beetles, ambrosia beetles, and a disease organism. Oak moth larvae feed in spring and periodically reach levels which can cause significant defoliation. Pit scale infests twigs and weakens plants by removing sap. A gall wasp which infests twigs occasionally reaches damaging levels in many California locales. Wasp larvae feed in developing twigs causing swellings (galls) and dieback. Wounds created by scale and gall wasps are prone to infection by fungi which cause branch disease (cankers) and dieback.

Root disease is prevalent 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 disease.

Twig blight diseases have become prevalent on live oak in recent years. Several fungi are capable of invading twigs through wounds causing dieback and decline. Trees stressed by drought, age and root disturbances and shading are particularly prone to twig blights.

Recommended Monitoring for Coast Live Oak

Timing	Treatment
Winter	Corrective prune crowns. Remove dead, dying, diseased, conflicting limbs. Thin crowns if extremely dense. Corrective pruning can be accomplished at other periods if desired. Inspect root collar. Excavate soil and mulch as needed. Sample soil for nutrient and pH levels as needed.
Late Winter	Apply first treatment to the trunks to prevent bark and ambrosia beetle attacks (this treatment is critical in areas with “sudden oak death”). Monitor for cankers (particularly reddish brown sap bleeding from the bark) and beetle attacks. Apply horticultural oil treatments if scales are present. Fertilize based on soil test results. Fertilization can be accomplished at other times of the year.
Early Spring	Monitor for cankers (particularly reddish brown sap bleeding from the bark) and beetle attack. Monitor for oak moth larvae, other spring defoliators and gall wasps. Treat as needed. Apply first fungicide treatment to suppress twig blight if this disease has been damaging.
Mid-Spring	Continue monitoring for cankers, beetles, oak moth larvae, and gall wasps. Treat as needed. Apply second fungicide treatment as needed.
Late Spring	Monitor for cankers (particularly reddish brown sap bleeding from the bark) and beetle attack. Monitor defoliators, scale insect crawlers and aphids. Treat as needed. Apply third fungicide treatment as needed. Monitor soil moisture and recommend irrigation as needed. Ensure that irrigation is not directed at root collar. Evaluate new growth for nutrient deficiency symptoms. Apply additional fertilizer treatments as necessary.
Summer	Apply second treatment to the trunks to prevent bark and ambrosia beetle attacks (this treatment is critical in areas with “sudden oak death”). Monitor for cankers (particularly reddish brown sap bleeding from the bark) and beetle attack. Monitor for scale and aphids. Treat as needed. Monitor soil moisture. Increase or decrease irrigation as needed.

Recommended Monitoring for Coast Live Oak

Timing

Treatment

Fall

Fourth fungicide treatment is recommended on oak which have been severely damaged by twig blight. 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. Monitor for cankers (particularly reddish brown sap bleeding from the bark) and beetle attack.

Sudden Oak Death Management*

The recommended approach to reducing the risk of sudden oak death is based on inspecting trees periodically for the early symptoms of decline. The other components of the program:

1. Sanitation – Rapid removal of dead oaks is a key to reducing future losses. Do not store infested wood on site.
2. Bark Beetle Preventative Treatments- Spray application to the lower 8-12 feet of the trunk on most trees (Lower 15-20 feet on high risk, stressed oaks).
 - a. First Application: February-April
 - b. Second Application: July-September
3. Maintain tree vigor
 - a. Apply fertilizer, based on soil analysis.
 - b. Apply mycorrhizae to the root system
 - c. Reduce moisture stress with mulch and proper irrigation techniques.
 - d. Prevent other pest problems, such as Phytophthora root rot, oakworm, scale, and gall insects.

* Based on the information available June, 2000.

