

# Stress & Pest Impacts On *Oxydendrum arboreum* / Sourwood

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Sourwood (*Oxydendrum arboreum*) is a native tree in forest areas of the Eastern United States. It can be found in other locations as landscape specimens in gardens and arboretums. The native range of sourwood is given in Figure A. Northern Illinois, Long Island New York, and Texas have populations of sourwood identified outside the accepted native range. As sourwood is found farther from the center of its native range, its stature decreases and its environmental stress components increase. Light, heat, water, and soil oxygen are the key stressors. This publication lists some of the specific problems associated with sourwood.

## Site Concerns

Sourwood is intolerant (i.e. does not do well) of heavy shade, high soil salt contents, high soil pH, lime derived soils, soil compaction, flooding, poor drainage, anaerobic rooting conditions, construction damage, air pollution, and turf competition. It can handle moderate droughts for short periods but tends to quickly abscise leaves both during drought periods and after rehydration. Sourwood is moderately resistant to storm damage but is usually sheltered by other trees. It self-prunes moderately well but will keep lower branches if they are in adequate sunlight. The tree as a specimen will require strong branch training early to reach and maintain proper form.

## Pest Concerns

Sourwood has many minor pests which are seldom effective in accessing and seriously damaging living tissue. By far the worst problems for sourwood are abiotic issues of soil oxygen and drainage, and soil water availability. Some authors cite sourwood as being nearly pest free. This notion is incorrect. Careful examination shows a number of nuisance, and some more serious, pests which can be locally damaging, especially if the tree is already having abiotic stress problems.

The major pests of sourwood include twig borers, cankers, caterpillars, and leaf spots, and are listed below:

The worst pest of sourwood is considered to be twig and stem borers. These borers can damage sourwood as larvae and adults. The most commonly seen borer on sourwood is the dogwood twig borer (*Oberea tripunctata*). This borer attacks many different species of trees. They make unique chewed girdling lines on twigs and then lay eggs between the girdles in lenticel areas in or near the phloem tissue. The newly hatched larvae bore to the pith at the center of the twig and feed on the living tissues of the last few growth increments. The larvae occasionally cut off dead twig segments as they eat their way downward. The larvae overwinter in the twigs and the adults emerge in Spring. Adults feed on the mid-veins of the leaves, causing the leaves to curl downward. Borers

may continue to attack the same tree, girdling tissue and killing the stems and new sprouts to the ground. The rhododendron or azalea stem borer (*Oberea myops*) is similar in its damage and life cycle within sourwood trees to the dogwood twig borer described above. Both these stem borers present similar forms of damage, except the rhododendron / azalea borer will feed into the roots.

Sourwood is host (along with other trees) to a twig girdler (*Oncideres cingulata*). Adults feed on new bark and woody tissue in late summer and girdle twig tips. The dead twigs hang onto the tree, or fall from the tree, providing food for the larvae.

Young buds, shoots, and leaf petioles of sourwood are damaged by *Conotrachelus anaglypticus*, a type of cambium weevil.

Nectria canker (*Neonectria galligena*) is a slow growing fungi which generates a small dark target-shaped, perennial lesion on stems and branches, and which can girdle twigs.

Sourwood is afflicted with three bark resident, irregular canker causing fungi. *Botryosphaeria obtusa*, *Botryosphaeria dothidea*, and *Botryosphaeria ribis* are generically called ibot cankers. Bot cankers live on the bark of trees and are opportunists when injuries occur to the tree exposing internal tissues. The bot canker fungi kill tree tissues and lead to twig and branch injury and death.

Sourwood leaves are one of many hosts which several caterpillar-like larvae consume and damage. The fall webworm (*Hyphantria cunea*) is a summer web nest builder and defoliator. The hickory horned devil, larvae of the regal moth (*Citheronia regalis*), can be found on many species of trees including sourwood across its native range. Sphinx moth larvae can be found on sourwood, consuming foliage in late spring.

Sourwood leaves are attacked and injured by a series of leaf spot fungi. *Cristulaiella depraedens* (*Grovesinia*), *Cristulaiella moricola*, and *Cristulaiella pyramidalis* initiate discolored leaf patches, blotches and lesions. As these leaf spot diseases occupy more leaf area, the tree begins a quickened senescence process and the damaged leaves abscise early. These sourwood leaf spots diseases tend to occur in cool, wet weather and on undertstory trees. *Tubakia dryina* is another leaf spot found on sourwood leaves.



#### FURTHER INFORMATION:

Field identification of sourwood *Oxydendrum arboreum*. University of Georgia Warnell School of Forestry and Natural Resources outreach publication SFNR06-12. Pp.4.

Native tree range in Georgia: *Oxydendrum arboreum* - sourwood. University of Georgia Warnell School of Forestry and Natural Resources outreach publication SFNR06-10. Pp.1.

Selected references for *Oxydendrum arboreum* / sourwood. University of Georgia Warnell School of Forestry and Natural Resources outreach publication SFNR06-14. Pp.2.

Sourwood *Oxydendrum arboreum*: The bitter & sweet tree. University of Georgia Warnell School of Forestry and Natural Resources outreach publication SFNR06-11. Pp.5.

Figure A: General range map for *Oxydendrum arboreum* - sourwood. Native range found within the dark lines shown. Small pockets of outlying and naturalized populations are possible and do exist away from this native range. Range is based upon herbarium specimens, federal map sources, and personal observations.

