

# Lichens on Woody Trees and Shrubs

► Lichens are often blamed for the decline and death of shrubs and trees in Alabama landscapes. Learn about their life history, damage, and control.

Lichens being blamed for the decline and death of shrubs and trees is not too surprising because these unusual plantlike organisms are commonly seen on the exposed limbs and trunks of declining or dead shrubs and trees, especially azaleas, dogwoods, and pecans. Lichens are not responsible for the poor top growth or death of shrubs and trees. Instead, their appearance is often related to damage from environmental stress or poor management. Exposed limbs on damaged plants simply give lichens access to the sunlight they need for growth with little competition.

## Life History

These often inconspicuous, hardy, and adaptive plantlike organisms are composed of two fungi and a green alga. This union or symbiosis produces a long-lived organism that does not look like the fungal or algal partners, all of which contribute to the growth of the lichen. The alga uses photosynthesis, like other plants, to produce food while the fungus supplies water and essential minerals and produces a structure that protects the alga from extreme environmental conditions. Together they thrive in some of the harshest environments on earth where few other plants and neither partner alone can survive.

Lichens colonize a wide range of exposed surfaces of limbs, stumps, fence posts, soil, rocks, and other living and nonliving objects. Lichens are firmly attached to these hard surfaces. They are most numerous on limbs and trunks of large mature trees and shrubs in full sun, particularly those plants with badly thinned canopies. Most lichens will not thrive on heavily shaded twigs and branches of healthy woody plants. Few lichens are found in areas with high levels of ozone, sulfur dioxide, acid rain, and other common air pollutants. Consequently, lichens are a good indicator of air quality.

The three types of lichens are (1) crustose forms, which are flattened against the limb (figure 1); (2) foliose forms, which produce leaflike folds above the limb (figure 2); and (3) fruticose lichens, which produce highly branched structures with hair or fingerlike



Figure 1. Crustose lichens on tree trunk.

projections (figure 3). Most lichens on trees and shrubs are gray green; however, the color of other species varies from yellow and orange to dark brown. When wet, most lichens are firm, but some black or brown forms are gelatinous.

Reproduction of most lichens occurs when small pieces break off or the entire thallus (body) fragments. Lichen



Figure 2. Foliose lichen.



Figure 3. Fruticose lichen.

fragments are spread to suitable substrates by wind, splashing water, and other means. The fungal partner of many lichens produces spores. A lichen may form if spores of the fungal component germinate near compatible algae. Some spores “capture” algal cells as they are ejected from the fungal fruiting body.

## Damage

Lichens are not generally considered plant pathogens. Lichenized forms (*Strigula* spp.) of the green alga *Cephaleuros* are plant pathogens. *Strigula* spp. is the causal agent of algal leaf spot of camellia, southern magnolia, and other shrubs although southern magnolia and camellia are the most common hosts. On leaves of camellia and southern magnolia, the lichen *Strigula* appears as numerous small gray-white crusty spots (figure 4), which later turn yellow and are shed. Leaf spotting and premature leaf shed may be unsightly, but this disease is not a threat to plant health.

## Control

Lichens are an indication of poor plant health. Good plant vigor is the best defense against the presence of lichens. Heavy infestations of lichens are most common on shrubs and trees in declining or poor



Figure 4. Algal leaf spot on sasanqua camellia.

health due to other factors. Following recommended establishment, watering, and fertility practices will promote the development of a thick leaf canopy, which will inhibit lichen growth on twigs and limbs. Better growing conditions and soil fertility may stimulate new plant growth and ultimately suppress the lichens. Light pruning of affected limbs will remove some lichens and stimulate new shoot growth that may help shade out the remaining lichens. Trees and shrubs in extremely poor condition will often not respond to better care and should be replaced. Refer to Extension publications [“Pruning Ornamental Plants”](#) (ANR-0258) and [“Planting and Establishing Woody Landscape Plants”](#) (ANR-0410) for additional information on pruning, planting, and maintaining shrubs and trees.

No pesticides are currently registered for the control of lichens commonly found on the twigs and branches of shrubs and trees. Kocide 2000 or Kalmore (1 level tablespoon per gallon) will control the lichen (algal) leaf spot caused by *Strigula* spp. on southern magnolia when applied every 7 to 14 days, starting with the unfurling of new leaves. Continue sprays until the leaves mature.



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