



Controlling Moss & Algae in Turf

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Occasionally, turfgrass areas begin to thin out and moss and algae start to form. These primitive plants develop because conditions for growing dense, healthy turf have declined.

Mosses are branched, threadlike green plants that form a tangled, thick mat over the soil. Algae are thread-like green plants that form a dense, green scum over the soil surface. Neither moss nor algae are thought to be parasitic. Both are spread by wind-blown spores and can form crusts on the soil surface that reduce air and water movement into the soil.

Factors that favor moss and algae development include wet, humid conditions and compacted soils with thin turf. Moss is more common in shady areas with infertile, acidic soils and excessive thatch; algae is more common in full sun conditions and fertile soils.

Preventive Cultural Practices

Cultural practices that favor growth of turfgrasses will reduce the competition from moss and algae. These practices include the following:

Maintain good soil fertility and pH. Have the soil tested to determine proper lime and fertilizer needs. For most turfgrasses, the pH should be 6.0 to 6.5 (Centipede prefers a pH between 5.5 and 6.0).

Improve drainage. Soils that stay moist because of poor drainage should be contoured so water will drain off the area. In some cases, the installation of tile drainage may be necessary to correct wet conditions.

Increase light penetration and air circulation. Pruning tree limbs below 10 feet and selected limbs in the crown will improve light penetration and air movement. Also, removing some of the least desirable trees and thinning and/or removing shrubs will help. Areas surrounded by buildings and vegetation with limbs close to the ground may require considerable work to provide adequate air circulation and light penetration.

Use a shade-tolerant grass. Use St. Augustinegrass, zoysiagrass or tall fescue. If direct sunlight does not reach the ground during the day, an ornamental ground cover such as liriope, mondograss or Japanese pachysandra may be better suited to the site.

Cultivate compacted soils. Aerification with a machine that removes plugs of soil will help reduce compaction. Core aerifiers may be rented, purchased or contracted through lawn service companies. Drainage in fine-textured soils can be improved by cultivation and adding large amounts of organic matter and sand.

Irrigate deeply and infrequently. Avoid light, frequent irrigation. Wait for signs of moisture stress such as the development of a bluish-gray, dull color before irrigating. Irrigate to wet the soil to at least 6 inches. Most healthy turfgrasses need about 1 inch of water each week during active growth. If puddling occurs, stop irrigating and wait two to three hours for the water to soak into the soil before irrigating again. Repeat the cycle as needed until soil is wet to the desired depth.

Renovate. Generally, turf may be renovated if at least 50 percent of the area has the desired turf. If turf cover is less than 50 percent, then reestablishment will be necessary. For more information, contact your local county Extension office or see the UGA Cooperative Extension publication, *Renovation of Home Lawns*.

Chemical Suppression

Chemical suppression of moss and algae is temporary unless the growing conditions are improved. The following chemicals may cause injury to the turf if they are not

properly applied. For both mosses and algae, raking or vertical mowing to break up the layer prior to and after chemical treatment and topdressing after will be helpful. Under heavily shaded conditions, however, sodding is the recommended means of reestablishing turf.

For Algae

Copper sulfate: Apply 3 to 5 ounces in 5 gallons of water per 1,000 square feet, or use a copper-containing fungicide according to label recommendations.

Fungicide: A fungicide containing mancozeb (Dithane T/O, Fore, others) is labeled for use on residential lawns by professional applicators.

For Mosses and Algae

Hydrated lime: Apply 2 to 3 pounds of hydrated lime in 3 gallons of water per 1,000 square feet.

Ferrous sulfate: Apply 4 to 7 ounces or 10 ounces of ferrous ammonium sulfate in 3 to 5 gallons of water per 1,000 square feet. Other forms of iron are available alone (Scotts Moss Control Granules) or in combination with fertilizer for moss control (Scotts Lawn Fertilizer Plus Moss Control and others).

Fungicides: Repeat applications of chlorothalonil (Daconil, Echo, others) have activity for controlling algae and moss but may not be used on residential turf. Application rates and regimes vary depending on whether treatments are made preventatively or curatively. See product labels for further application information.

Herbicides: Certain herbicides can be used to control moss and algae. Similar to the chemicals previously discussed, however, control is temporary unless growing conditions are improved. Nonselective herbicides such as glyphosate (Roundup, other trade names) will kill moss, but it will also kill or severely injure turfgrasses. Limit the use of glyphosate to spots completely covered by moss and where renovation of the site is planned. Allow 10 to 14 days following the application of glyphosate before seeding or sodding the site.

Trade names are used only for information. The University of Georgia Cooperative Extension, the University of Georgia College of Agricultural and Environmental Sciences, does not guarantee or warrant published standards on any product mentioned; neither does the use of a trade or brand name imply approval of any product to the exclusion of others that may also be suitable.

Carfentrazone (Quicksilver 1.9 L) is a broadleaf herbicide labeled for established turfgrasses that may be used for burndown and control of silvery thread moss (*Bryum argenteum*) occurring in turf. To control silvery thread moss, apply Quicksilver at 6.7 fluid ounces of product per acre followed by repeat applications. Tall fescue may exhibit discoloration within three to five days after application under some conditions. Including a non-ionic surfactant at 0.25% v/v may improve efficacy. Carfentrazone is also sold in combination with other broadleaf herbicides under the trade names Speed Zone, Power Zone and Square One.

Research shows that oxadiazon, the active ingredient in Ronstar, reduced moss infestations on golf course putting greens. This research was not conducted in Georgia, so it is not known if oxadiazon-containing herbicides would control the various moss species here. Also, herbicides that contain oxadiazon are registered for use only on turfgrasses located on commercial properties (golf courses, commercial building sites, athletic fields, etc.). Oxadiazon-containing herbicides are not registered for use on home lawns; their use is not recommended for homeowners or for lawn care companies that maintain home lawns.

Various products that contain potassium salts of fatty acids or formaldehyde (HD BI-O-CIDE) may be used to control moss and algae in turfgrasses. Bayer Advanced Moss and Algae Killer and Safer Brand Moss and Algae Killer and Surface Cleaner may be used to control moss and algae in turfgrasses. These products kill moss or algae through a contact mode-of-action. Use varies according to the specific product and, unless directions on the label are carefully followed, these products can injure desirable turfgrasses.

NOTE: Refer to the current edition of the Georgia Pest Management Handbook for the most up-to-date herbicide and fungicide recommendations.

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