

Fact sheet

Moss in Lawns

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Moss is associated with conditions which do not favor the growth of grass. Moss does not kill grass; it simply fills in the open spaces as the grass dies out.

Mosses are one step above the algae, bacteria and fungi but are below the seed bearing plants. Moss has no supporting or conducting tissue or roots. It reproduces by spores and vegetative parts. As the older parts die and partly decay, the terminal parts grow on from year to year so the patch may appear to die in spots but new growth will continue to spread from the edges.

Some of the conditions associated with moss, and their correction, are as follows:

EXCESSIVE SHADE: In general, mosses are more tolerant of shade than are higher forms of plant life, and this in part accounts for their ability to invade lawns and replace grass in shady spots. Although moss can be found in full sun, if your moss is confined to shady spots, planting shade-tolerant grasses may help. In truly heavy shade, you might consider thinning or removing some trees, or planting a shade-tolerant ground cover such as pachysandra or myrtle.

SOIL COMPACTION: This is often the culprit because grass roots have difficulty penetrating compacted soil. Deep compaction of heavy soils may require complete reconstruction of the lawn. However, soil aeration can be improved by annual use of a core aerator. You can rent them or hire a lawn service. Get the aerator which actually removes cores of soil and deposits them on the surface. There is no need to rake them up. They will disintegrate.

LOW pH: Acid soil is sometimes but not always a factor. Contact your local Rutgers Cooperative Extension office about having a soil test done. Most lawn grasses grow best at a pH between 6.0 and 6.5. If your soil is acid, the grass will thin out and allow moss to move in.

LOW SOIL FERTILITY: The soil test mentioned above will also test for major soil nutrients. Our soil is often low in potassium, which is necessary for good root systems. The application of nitrogen at proper times can also encourage grasses to grow well. One pound of actual nitrogen (which would be applied in, for example, 10 pounds of 10% nitrogen fertilizer) can be applied three times per year, in late May, September and late November.

POOR DRAINAGE: Moss grows in perfectly drained soils as well as in moist soils. However, poor drainage can interfere with the growth of grass, opening the door for moss.

IMPROPER WATERING: Most lawn grasses need 1 to 1-1/2 inches total water per week. If there is no rain, apply 1/2 to 3/4 inches every three or four days. You can set coffee cans under the sprinkler to estimate how long to leave it on.

Those are the conditions which are usually involved, either separately or in combination, when moss invades a lawn.

You can buy products which will kill the moss. For example, a product called Demoss, is available in a formulation for lawns, as well as in a formulation for

general use. However, the moss will return if the underlying conditions are not corrected.

Lastly, consider that you don't absolutely have to struggle to grow grass. Moss is not a bad ground cover. You don't need to water, fertilize or mow it, and it looks attractive year round. Moss will also stay green with less water than will grass.

Carpets of moss plants possess a greater water retaining power than layers of dead leaves such as might occur in a forest. Moss, therefore, reduces soil erosion by slowing down the rapid run-off of rain water and melted snow.

The major disadvantage of moss as a groundcover is that it will not tolerate foot traffic. Paths through moss lawns must be surfaced or they will turn into mud trails. In addition, moss rolls up easily and extra care must be taken when raking up leaves. However, there are situations in which moss is a perfectly appropriate ground cover, and maybe, if you thought it over, you could decide that moss is what you wanted all along.

It takes about two years for a moss lawn to become well established. If you decide to keep a moss lawn,

you should not apply lime. Moss prefers a soil pH range of 5.0 to 5.5. If a soil test shows the soil pH to be greater than 6.0, sulfur can be used to acidify the soil. If necessary, apply approximately five pounds of elemental sulfur per 1000 square feet to lower the soil pH. Acidifying the soil discourages weeds and grass and provides a more favorable soil for moss to grow. Since moss does not grow roots into the soil, having an acid soil in the surface inch of soil is all that is necessary to encourage moss. Ammonium sulfate can also be used to lower the soil pH. Apply five pounds of ammonium sulfate (NH_4SO_4) per 1000 square feet.

Do not allow fallen leaves to cover the moss lawn for a long period. A mat of leaf cover will kill the moss. Be very careful when raking leaves so that the moss is not pulled up. If the moss is very dry, a leaf blower may also remove the moss.

A moss lawn that is dry requires only a light irrigation. When the soil surface is made wet, the moss will quickly green up.



Photos credit: David E. Benner, *The Magic of Moss*. American Nurseryman. March 1, 1999.

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