Controlling Thatch in the Lawn

Q: What is thatch, why is it a problem and how do I control thatch in my lawn?

A: Thatch is an accumulation of dead grass rhizomes, stolons, and roots that have a greater resistance to decay because they are composed of large molecules that contain ligno–protein complexes. This accumulation creates a layer between the soil and the grass. However, thatch can be both beneficial and harmful.

Advantages
A thin layer of thatch up to ½-inch thick provides a cushion for the grass and increases the resiliency of the grass. Thatch can also work as a mulch and protect the crowns of the turf grass plants from extremes in weather and help to retain moisture.

Disadvantages
A thick layer of thatch, over ½-inch can cause many problems. When mowing, a thick thatch layer can lead to scalping of the lawn. Scalping occurs when the grass is cut too short and stem tissue is exposed. Scalping causes a temporary stunting of the growth of the grass and repeated scalping leads to a general decline in the quality of the lawn. On turf with stolons, above ground stems, scalping can injure the grass so severely that it may result in death.

Thatch can cause issues with watering the lawn as well. Thatch dries out easily and once thatch dries out, it is very difficult to re-wet. It can cause localized dry spots and the lawn may become susceptible to drought stress. Excessive thatch can restrict turfgrass root development and increase susceptibility to winter injury.

A thick thatch layer creates a favorable environment for insect pests. Chinch bugs, spittlebugs and sod webworms live in the thatch layer. A thick layer of thatch will also block the movement of pesticides into the soil below, reducing the effectiveness of treatments.

Controlling Thatch
Grasses vary in their tendency to developing thatch. Hybrid bermuda, zoysia and St. Augustine lawns are prone to producing thatch. Some cultivars of these turf types are more prone to thatch development than others. Centipede lawns usually don’t develop thatch unless they are over-fertilized. Usually, fast growing turf grasses develop thicker thatch layers. Zoysia, a slower growing turf, will experience a buildup of the thatch layer over time. In order to maintain a healthy lawn, the thatch layer needs to be monitored.

There are several management options for controlling thatch. Microbes that live in the soil naturally break down thatch, so it is important to maintain a proper soil pH. Have a soil sample analyzed once a year. Fall is the best time to check the soil and make any corrections if necessary. Following fertilization recommendations for your lawn is important. Thatch develops when the
production of organic matter exceeds the decomposition rate. Excessive amounts of nitrogen produces a lot of growth. Nitrogen rates should also be reduced if clippings are being recycled or if the lawn is being grown in light shade. Sticking to the lower level of suggested fertility rates can help to keep thatch levels in check.

Lightly topdressing the lawn can help to control thatch. This places microbes at the top of the thatch layer, where more readily decomposable plant debris is located. Either compost or a soil similar to the native soil is the best to use for topdressing.

Core aerating the lawn can also help to control thatch. The removal of soil cores improves the availability of oxygen to the root system of the grass and the thatch layer. The increased oxygen helps to increase microbial activity and aids in decomposition. For more information on aerating your lawn please see HGIC 1200, Aerating Lawns.

For a thick layer of thatch over ½-inch thick, plan on dethatching the lawn mechanically. For a small area a dethatching rake can be used. For larger areas a vertical mower can be used. Blades vertically cut into the thatch layer and should cut into the soil ½-inch deep. Dethatching the lawn is a destructive process and is best done early in the growing season, so that the grass has plenty of time to recover. The late spring, after green-up, or early summer is the best time to dethatch warm season lawns.


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