

Thatch in Lawns

An integral part of turf management.



What is thatch? Thatch is often misunderstood in definition, cause and control. Thatch is a layer of both living and semi decomposed organic material comprised of roots, rhizomes and stems situated between the soil surface and the chlorophyll laden stems and leaves. Thatch is a normal occurring layer in most lawns. Only when it becomes excessive, does thatch become a detriment. Thatch layers greater than ½ inch (1.27 cm) can impede air, water and nutrient movement to the root system. A thatch layer also provides a perfect habitat for disease, fungi and insects. Much root development can often occur in thatch layers. When the thatch dries out in drought periods, these shallow roots desiccate. In extended rainy periods, the thatch will remain saturated thus restricting oxygenation of the roots.

What causes thatch? Turf species like Kentucky Bluegrass (spreads by rhizomes) and Creeping Bentgrass (spreads by stolons) tend to be prolific thatch producers. Roots, rhizomes, stolons and stems all contain lignin which does not readily decompose. Therefore it is these plant components that make up the majority of thatch. Very acidic (low pH) or alkaline (high pH) soils and poorly drained soils tend to retard decomposition. Similarly, extremely sandy or clay soils favour thatch development. Excessive irrigation can lead to thatch problems. Unchecked automatic sprinkler systems, which sometimes are programmed to overwater, can be contributing culprits in thatch accumulation. Frequent applications of quickly available, high nitrogen fertilizers can promote increases in thatch. Essentially, the rate of decomposition cannot keep up with the accelerated vegetative growth. The acidifying effects of these inexpensive nitrogen materials can also help to reduce soil microbial activity.

How to control thatch. Preventing thatch entails utilizing a few sensible turf management practices. Select species of Bluegrass that tend to be less aggressive. When seeding a new lawn incorporate a balance of creeping red fescue and perennial ryegrass along with bluegrass into the blend. Stick to a sound fertility program using efficient controlled release nitrogen sources at recommended rates for your area and lawn make up. Some synthetic slow release nitrogen products and most organic fertilizers actually stimulate soil microbes. Maintaining a close to neutral pH (between 6.0 and 7.0) encourages microbial degradation and earthworm activity. Keeping a constant cutting height and removing only 1/3 or less of the leaf surface per mowing also speeds up decomposition.

Thatch exceeding ½ inch thickness must be treated curatively. Thinner layers (½ inch or less) can mechanically dethatched with a vertical mower. As this procedure is very aggressive, it is recommended that either early spring or early fall treatments be implemented to minimize stress and allow time for turf recovery. Core aeration is generally recognized as a better approach for thatch reduction. The plugs or cores from aeration can be worked back into the thatch and/or a 1/8 inch (.32 cm) of good quality compatible screened topsoil can be uniformly applied. This microbe rich soil will further speed up thatch degradation. Do not use peat moss as a topdressing material. It will only add to the thatch layer. Fall is the best time for coring. Soil moisture is at the right level for optimum tine penetration, fall temperatures allow for turf recovery and root growth is more prolific.

If the thatch layer persists and is excessive, repeated treatments will be required over a few growing seasons.