

FACT SHEET

THATCH CONTROL IN HOME LAWNS

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Most turfgrasses are perennial plants that live under a continuous state of renewal. New plants are produced and old plants die. Plants produce new leaves continuously which are cut off with a mower and, if not removed from the lawn, are left to fall back into the turf. Ideally, under proper management, the lawn achieves a balance between the rate at which organic matter is produced and the rate at which it is decomposed. This organic matter has value. It contains various plant nutrients which, after decomposition by microorganisms, may be returned to the soil for possible future use by new turfgrass plants.

What is Thatch?

When organic material is produced faster than it can be decomposed, the lawn develops thatch. Thatch consists of partially decomposed leaf, stem and root tissue and some living stem and root tissues that develop in the organic layer above the soil.

A certain amount of thatch is desirable, because it forms a cushion in the lawn to increase wear tolerance. Since most lawns are subjected to traffic, thatch helps the lawn withstand the wear and tear associated with moderate levels of traffic. Thatch also insulates the soil from high temperatures and reduces water evaporation losses from the surface of the soil. To be desirable, thatch should not exceed ½ inch.

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When thatch accumulates over ½ inch, problems develop. A heavy thatch layer reduces water movement into the soil. It also reduces soil aeration which is necessary for good root growth. Increased disease and insect problems are associated with a heavy thatch layer. Also, a thatch layer in excess of ½ inch creates a barrier for the movement of fertilizers and insecticides into the soil.

Why Does Thatch Accumulate?

There are several basic causes for thatch build-up in a lawn. Improper use of water can encourage a thatch problem. Lawns that are excessively watered tend to develop heavy thatch. Heavy use of pesticides on a lawn may promote thatch accumulation by destroying organisms that decompose thatch.

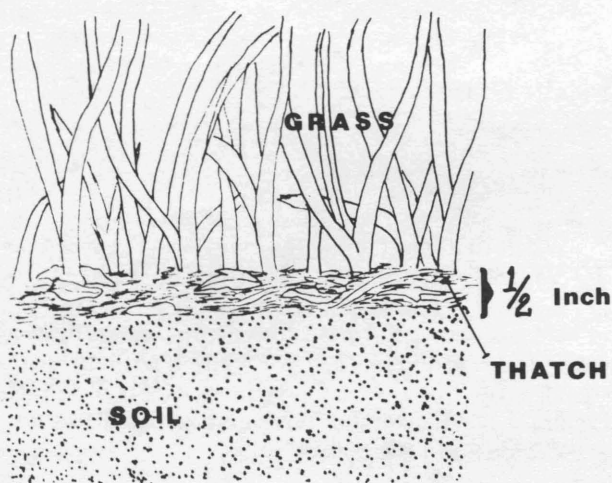
Perhaps the major cause of thatch build-up is the use of high rates of soluble nitrogen fertilizers. Nitrogen is a plant nutrient that stimulates vegetative growth of turfgrass. As stated previously, in an ideal lawn management system, the growth rate of the lawn should equal the rate at which the turfgrass residues are decomposed. Because of the strong influence of soluble nitrogen on growth, excessive application rates add plant residues to the system faster than they can be decomposed. As a result, thatch accumulates in the lawn.

Improper mowing can also lead to a thatch problem. The lawn should be mowed when the height of the grass is about 1½ times greater than the height

setting of the mower. That is, if the mower is set for 2 inches, the lawn should be cut when it is no higher than 3 inches. If a lawn is mowed at the proper frequency, the clippings may be left to fall back into the turf without contributing to thatch accumulation. The frequency at which a lawn should be mowed is determined by the growth rate. The use of a mulching mower will not prevent a thatch problem and will not reduce the frequency at which a lawn should be mowed.

How to Check for Thatch

A lawn with too much thatch is spongy. Mowers tend to scalp lawns that have excess thatch. To estimate the depth of thatch, use a knife, spade or soil probe to remove a small section of turf. Make sure the cut extends deep enough to go through the thatch layer into the soil. Measure the amount of thatch. If it is thicker than $\frac{1}{2}$ inch, the lawn should be dethatched.



How to Remove Thatch

The best time to remove thatch is in spring before the lawn turns green. Machines specifically designed for the removal of thatch are called vertical mowers

(because the blades rotate vertically), power rakes or dethatching mowers. In using this type of equipment make sure the blades, or knives, penetrate through the thatch to the surface of the soil. On St. Augustine lawns the knives should be spaced 2 or 3 inches apart; on bermudagrass lawns they may be 1 to $1\frac{1}{2}$ inches apart. The lawn should be vertically mowed in 2 or 3 directions, each time removing the material brought up by the mower.

Another means of thatch control is to lower the height of the lawn mower's blade for the first cutting in the spring. Mow the lawn in several directions, removing the dead material after each mowing. Scalping the lawn in this manner is not as effective as using a vertical mower, but will help prevent thatch accumulation.

How to Prevent Thatch

The most desirable method of thatch control is to prevent its accumulation. The following suggestions will aid in preventing thatch accumulation:

1. Avoid applying soluble nitrogen fertilizers at rates higher than 1 pound per 1,000 square feet per application.
2. Fertilize according to soil test recommendations. Do not exceed 5 pounds of nitrogen per 1,000 square feet per year.
3. Water thoroughly (wet the soil to a depth of 6-8 inches), and water only when the lawn needs water.
4. Avoid the use of pesticides as much as possible (treat only when a pest is present and has or may become a problem).
5. Adjust the frequency of mowing so that no more than $\frac{1}{3}$ of the leaf surface is removed at any one mowing.
6. Scalp the lawn and remove the residue at the first mowing in spring.
7. Remove tree leaves and grass clippings when they accumulate on the surface.

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