

## **LAWN AERATING AND THATCH MANAGEMENT**

What is THATCH? As turf grass grows, it produces roots, stems and leaves within a narrow zone near the soil surface. This growth process is one of continual renewal. Dead and crowded tissue is resistant to decomposition so it accumulates above the soil line, below the GREEN level of mowed grass.

Some thatch, up to about ½-inch, is desirable. It provides some temperature protection to roots, gives the lawn the feel of “springiness” and helps reduce soil compacting. As excessive thatch accumulates, it repels water and irrigating, which may not get to the root zone. Roots in thatch are subject to rapid drying and drought stress. Colonial bent grass, our most commonly used lawn grass, is a heavy thatch producer. Compacted lawns, even without thatch, may show stress during the summer heat.

Thatch may harbor insects and disease. Since water cannot get into that layer; neither can pest control products. The layer also may bind up those pesticides chemically.

Thatch accumulates more rapidly in lawns that are watered frequently. The organic material seldom dries, and oxygen is excluded, so it does not decompose. A light, frequent fertilizer application will add nutrients to hasten thatch breakdown.

Night crawlers or earthworms feed on plant parts that will become a thatch layer so accumulation is reduced. They leave objectionable mounds and most people don't appreciate the bumpy lawn they create. They are a beneficial organism and they do a certain amount of aerating and soil mixing. See “Aeration” below for management suggestions.

**GRASS CLIPPINGS:** Regular mowing contributes little to a thatch layer. The clippings, which are left on the lawn are immature, quickly dry to a wisp and decompose. These clippings are then recycled, and a certain amount of nutrients they contain, is returned to the soil. This process reduces the fertilizer requirement of your lawn.

You should mow bent grass to about 1–1/2 inches and rye grass blends to about 2-1/2 inches high during the summer. Remove no more than 1/3 of the height of the grass blades at one time.

Equipment can be rented to remove or “de-thatch” your lawn. Power rakes or de-thatching machines can be rented locally. Be sure to run the machine in 4 directions, including diagonally, over your lawn. This equipment or procedure should not be confused with aeration equipment.

**AERATION:** Healthy roots require air exchange for proper functioning. Turf areas in general and heavily used areas, become compacted and air in the soil can be greatly reduced. As with other perennial crops, there's no annual soil preparation operation. Compact soil is a major factor in moisture stress as it restricts water movement. Even with a type of grass that creates thatch less rapidly, aeration will benefit the compacted lawn. Aeration removes a core 1/2-3/4 inches in diameter and 3-4 inches deep from the thatch and soil layer. The immediate effect is to admit air into the root zone and creates a channel into which water can move carrying with it needed nutrients for proper grass growth. The admission of air into the thatch layer contributes to its breakdown and reduces accumulation.

Aeration will help reduce night crawler problems. The holes go through the compacted layer and admit air, which they need.

In addition, it provides below ground areas for night crawlers to deposit their castings. Fewer mounds will be on top of the soil.

Sloping lawn areas are difficult to water properly. Aeration will encourage water penetration, reduce runoff and save on the water bill.

Do not fill the holes with sand or peat moss. That will inhibit water and root penetration.

**EQUIPMENT:** Power equipment available from rental outlets is one approach to lawn aeration. There is usually a low rental charge; such as a two hour minimum. Co-operate with neighbors because you can do several lawns in this time. Lawn care professionals will provide this service without the trouble of rentals or handling a heavy and awkward machine.

Foot operated aerators are available. Unless the soil is quite moist, you will have a hard time making a hole deep enough to do much good. It is an extremely slow process and not practical for a large lawn.

Some garden stores sell aerators that attach to a garden hose. With waterpower, they bore a hole and inject the moisture that the roots need. The opening remains to provide air and water entry for a period of time. This tool is very useful to treat the brown patches of lawn that appear during the summer. Relatively small areas may become dry because of thatch, compaction, slope, poor sprinkler coverage or fairy ring. Check soil moisture levels before blaming brown spots on insects or disease.

Punching holes with a pitchfork accomplishes little because the soil around the hole is compacted, not removed. Wearing golf shoes or spiked sandals while mowing are of no value.

**TIMING:** Aeration can be done at any time soil moisture is either too wet or too dry. Areas that are subject to heavy traffic may need the operation annually or more frequently. Don't make a casual pass with the equipment you choose. Be sure there is a hole 3 to 4 inches deep and spaced no more than 4 to 5 inches apart.

**CORE DISPOSAL:** It is best to leave them on the lawn. You can break them up by mowing, hand raking or with a power rake at a very high setting. Over a short period of time they will disintegrate and be of benefit to the thatch decomposition process. If you think they're too unsightly, rake them up and add them to the compost pile.

**POWER RAKING:** Through the years, experts and lay turf managers have recommended power raking to control thatch. More recent research indicates that the practice generates tremendous heaps of organic material, but the actual thatch layer reduction is minimal. Power raking has a place in lawn renovation for preparing a good surface for seeding. It is of little value as a thatch management practice.

**CHEMICALS:** Wetting agents may be temporarily effective in allowing water to penetrate the repellent thatch layer. Symptoms of thatch problems may be reduced but chemical use is not a cure. Bacteria or other agents are sometimes touted as thatch "digesters," but have not proven effective.

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