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Aerating Lawns

Homeowners often overlook problems associated with soil compaction. Insects, diseases, nematodes, improper watering and a lack of fertilizer are often blamed for a lawns decline when the real culprit is compaction. The problem starts when the top 4 inches of the soil become compressed, impeding the movement of air, water and nutrients to the grass roots. This stresses the grass plants, making them less able to compete with weeds and slow to recuperate from injury. In time a compacted lawn needs renovation.

Compacted soil contributes to the accumulation of thatch because restricted oxygen levels in highly compacted soils impair the activity of earthworms and other thatch-decomposing organisms. Left unmanaged, thatch can lead to serious maintenance and pest problems. Thatch accumulates faster on compacted soils and heavy clay soils than on well-aerified soils. Therefore, some lawns may require frequent aerification to aid in thatch control.

If soil is compacted, the solution is straightforward: aerify. The practice of physically removing cores of soil and leaving holes or cavities in the lawn is defined as core aeration or aerification.

BENEFITS OF CORE AERATION

- Loosens compacted soil and increases the availability of water and nutrients.
- Enhances oxygen levels in the soil, stimulating root growth and enhancing the activity of thatch-decomposing organisms.
- While removing cores of soil, the spoons or tines also sever roots, rhizomes and stolons. Grass plants are stimulated to produce new shoots and roots that “fill up” the holes in the lawn and increase the density of the turf.
- Reduces water runoff.
- Increases the lawn's drought tolerance and improves its overall health.

TIMING

The type of grass will determine whether to aerify in the fall or in the summer. Lawns composed of cool-season grasses such as Kentucky bluegrass and tall fescue are best aerified in the fall, when there is less heat stress and danger of invasion by weedy annuals. Allow at least four weeks of good growing weather to help the plants recover. Warm-season grasses such as zoysiagrass, centipedegrass, carpetgrass, St. Augustinegrass and bermudagrass, on the other hand, are best aerified in late spring and summer, when they are actively growing. With either type of grass, choose a day when temperatures are mild and soil is moderately moist, which makes the soil easier to penetrate. Avoid aerifying a wet soil, as it is messy and leads to further compaction of the soil as well. If the soil sticks to your shoes or if the core sample you take sticks to your probe, you should wait until it dries out some before starting
the job.

FREQUENCY

Aerification of home lawns corrects soil problems but generally is not a routine practice. The best answer to the question, “How often should I aerify?” is, “As often as needed.” One way to determine if aeration is needed is by scouting the lawn. Take a screwdriver and probe the soil. If the screwdriver penetrates the soil with little resistance, then you probably don’t need to aerify. If it is difficult to penetrate the soil with the screwdriver, then you may need to aerify. Make sure the soil is moist when testing the areas since dry soil can also be more difficult to penetrate.

Turfgrass in high traffic areas may need aerification more often than the rest of the lawn. Turfgrasses with low traffic tolerance such as centipedegrass and St. Augustinegrass may need aerifying more often than turfgrasses with good traffic tolerance, such as bermudagrass and zoysiagrass. These high traffic areas can usually be done by “hand” as described in the next section.

SMALL AREAS

Aerification is not expensive. The simplest and cheapest way to aerify a small lawn is with a spading fork. Push the tines into the soil as far as you can (at least 4 inches) and rock the fork back and forth to enlarge the holes. This movement will loosen up the soil and make room for new grass roots. One limitation of using a spading fork is that as you are make a hole, you are also forcing soil particles around the hole closer together, causing more compaction. This method is also rather labor-intensive for treating large areas.

For a few dollars you can purchase a sod-coring tool that does a better job. Like the spading fork, this tool is easy to use and ideal for small areas. Unlike the fork, the sod-coring tool removes cores of soil from the lawn instead of pushing the soil aside to create holes. The earthen plugs that are deposited on the lawn after each successive plunge actually benefit the lawn. They contain microorganisms that help to decompose any layers of thatch present.

LARGE AREAS

Aerifying larger lawns requires a power-driven core aerator or aerifier, which can be rented at lawn and garden supply centers. The working parts of these machines are spoon-shaped tines or hollow tubes. As the tubes are driven into the lawn, cores of soil are removed from the ground and strewn across the lawn. Both types of tines work equally well, but the hollow tine makes a somewhat cleaner hole than the spoon type and brings up less soil. The tine size varies up to three-quarters of an inch and in depth of penetration up to 3 inches, depending on the manufacturer's specifications. The closer tine placement removes more soil, exposes more soil surface area for water and fertilizer movement and alleviates compaction quicker than the wider tine spacing.

Penetration depth depends on soil type, soil moisture, tine diameter, and the weight and power of the aerifier. Soil cores should be left on the lawn to be broken up by rainfall and traffic. If their appearance bothers you, you can speed up their disappearance by raking them into the grass. Whichever machine you use, go over the lawn twice, once in one direction, and then in a perpendicular direction for best results.

AERIFYING AND RESEEDING

Aerification can be combined with seeding, particularly on sparse or bare areas. If you are going to seed the lawn, you should make six to 10 passes over the area with a machine. You need to produce a number of holes, at least 4 inches apart, to improve the appearance and density of the stand. Allow the holes about a month to heal before seeding. If you overseed immediately after coring, seeds that land in or near the aerifier holes will germinate and grow much better than those between the holes, giving the lawn an uneven, speckled appearance. With a fraction of the effort and expense of tilling up the entire area, combining aerification with seeding will give the lawn a brand-new look.

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