

Aerating Your Lawn

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What is lawn aeration?

Lawn aeration involves the removal of small soil plugs or cores out of the lawn. Although hand aerators are available, most aeration is done mechanically with a machine having hollow tines or spoons mounted on a disk or drum. Known as a core aerator, it extracts 1/2 to 3/4 inch diameter cores of soil and deposits them on your lawn. Aeration holes are typically 1-6 inches deep and 2-6 inches apart. Other types of aerators push solid spikes or tines into the soil without removing a plug (spiking). These are not as effective because they can contribute to compaction. Core aeration is a recommended lawn care practice on compacted, heavily used turf and to control thatch buildup.

What will aeration do for my lawn?

As lawns age or sustain heavy use from play, sports activities, pets, vehicle traffic and parking, soil compaction can result. Soil compacting forces are most severe in poorly drained or wet sites. Compaction greatly reduces the pore space within the soil that would normally hold air. Roots require oxygen to grow and absorb nutrients and water. Compaction reduces total pore space and the amount of air within the soil. It has a negative impact on nutrient uptake and water infiltration, in addition to being a physical barrier to root growth. This results in poor top growth and lawn deterioration. Core aeration can benefit your lawn by:

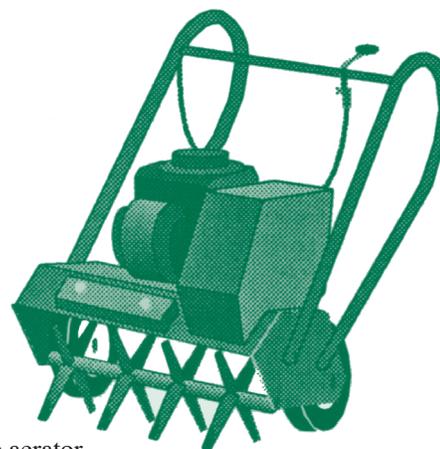
- Increasing the activity of soil microorganisms that decompose thatch.
- Increasing water, nutrient and oxygen movement into the soil.
- Improving rooting.
- Enhancing infiltration of rainfall or irrigation.
- Helping prevent fertilizer and pesticide run-off from overly compacted areas.

How do I know if I need to aerate?

If in doubt about aeration, remove a square foot section of lawn at least 6 inches deep. If grass roots extend only into the first 1-2 inches, your soil may be compacted and could benefit from core aeration. Expect a seasonal effect with cool-season grass roots being shortest in late summer and at their greatest depth in late spring.

Other reasons to aerate include:

- Your lawn is heavily used or driven upon on a regular basis, causing the turf to thin or look unthrifty.
- The thatch layer is in excess of 1/2 inch.
- You have a heavy clay soil.



core aerator

Is there any reason not to aerate?

A lawn that is not exposed to soil compacting events will likely grow well and may not need aerification. Winter freezing and thawing cycles and earthworm activity can help loosen slightly compacted soils. If the lawn has a thatch layer in excess of 1/2 inch, then core cultivation can be used as a preventative approach to control excess thatch build up. Newly seeded or sodded lawns should not be aerated in the first year.

When should I aerate?

In Virginia, the best time to aerate cool season lawns of tall fescue and Kentucky bluegrass is in late August to mid September. This is when these lawns are coming out of summer dormancy and beginning a period of vigorous growth. Lawns will recover quickly from aeration at this time. Competition from weeds is also minimal during this time. Warm season lawns like bermudagrass and zoysiagrass are best aerated during June and July, as this is their period of rapid growth.

Where can I get an aerator?

Aerators may be rented at many garden or rental centers. Some lawn or landscape companies will perform the service for a fee. Be sure that the machine has hollow tines or spoons to bring the soil core to the surface. Look for machines with deeper tines and weight over the tines for better penetration into the soil. Busy rental times include most spring and fall weekends; reserve early or plan on weekday use. These machines are large and heavy; they will require special handling and larger vehicles for transport. Many people cooperate with neighbors and make it a group effort, thereby also lowering the overall cost. If renting, be sure you are instructed in and comfortable with the operation of the machine before bringing it home.

How do I aerate?

- The soil should be moist but not wet.
- Lawns should be thoroughly watered two days prior to aerating, so tines can penetrate deeper into the soil and soil cores easily fall out of the tines.
- If aerating after prolonged rainfall it is important to wait until the soil has dried somewhat so soil cores do not stick in the hollow tines.
- Thorough watering means 1 inch of water from irrigation or rainfall. An inch of water can be measured by marking the side of a pet food can placed in the lawn.

- Applying 1 inch of water may be difficult to achieve in a single watering, given the slow infiltration rate on most Virginia soils. Therefore, smaller amounts of water applied every 3 to 4 days may be required to allow water to enter the soil without causing runoff.
- Aerate the lawn in at least two different directions to insure good coverage. Be careful on slopes, especially steep ones, as well as near buildings and landscape beds.

What else do I need to know?

- Aeration helps to control thatch.
- It is extremely difficult to core aerate heavy clay soils or soils that have stones, rocks or tree roots below the soil surface.
- Be sure to mark sprinkler heads, shallow lines from sprinkler, underground utilities, cable, and septic lines before aerating so they will not be damaged.
- Soil cores are best left on the lawn surface; they typically work back into the grass in 2-4 weeks.
- Lawns may be fertilized and seeded immediately following aeration with or without further soil top dressing.
- If your soil is heavily compacted, you can apply stable, mature compost 1/4 inch deep. Rake the compost over the lawn, filling the aeration holes.
- Lawns can be aerated once a year, especially under heavy use conditions.

Anything else I can do?

Contact your local Virginia Cooperative Extension office and speak with an Extension Agent or Master Gardener volunteer for more advice and information on upcoming lawn and landscape classes and seminars in your area.

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Virginia Cooperative Extension would like to remind you that what we do to the lawn and landscape impacts local water quality and that of the Chesapeake Bay.

Reviewed by Mike Goatley, Extension specialist, Crop and Soil Environmental Sciences