

## **What is aeration?**

Aerate, in the context of landscape and grounds maintenance, means "to supply the soil with air". It is a contractor technique to aid in maintaining and improving lawns. Aeration improves the lawn appearance, usability, and its ability to absorb water from irrigation.

Aeration, or core cultivation, is standard lawn care. Aerating a lawn means supplying the soil with air, usually by poking holes in the ground throughout the lawn using an aerator. It reduces soil compaction and helps control thatch in lawns while helping water and fertilizer move into the root zone.

Aeration is most effective when actual cores or plugs of soil are pulled from the lawn. Holes should be two to three inches deep and no more than two to four inches apart. Lawns should be thoroughly watered the day before aerating so plugs can be pulled more deeply and easily. Mark all sprinkler heads, shallow irrigation lines and cable TV lines before aerating so those lines will not be damaged.

On thatchy lawns, it is important to leave the cores on the lawn, allowing them to work back into the grass. Otherwise, the cores may be removed or left on the lawn. Lawns may be fertilized and seeded immediately after aeration.

## **Problems**

The basic idea behind lawn aeration is that, like you, your lawn and the soil under it need to breathe. Providing much-needed lawn aeration for your grass entails dealing with thatch. The build-up of lawn thatch makes it difficult for your lawn to breathe. Lawn aeration performed in spring or fall helps control lawn thatch.

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.

Soil compaction is the most common example of soil deficient in air. The growth habits of grass in compacted soil are shallow root development, a substantial decrease in the number of grass plants per square foot, and an inability to properly use applied fertilizers.

Grass roots need air as well as water and fertilizer. The grass can actually poison itself as a result of the various chemical processes that occur in the individual grass plants if the grass roots do not have enough air. Soil that lacks sufficient air can result in; slow growth in the affected grass, excess irrigation runoff due to poor permeability, shallow root systems, and a lawn that's highly susceptible to insects, disease, and heat damage.

## **Benefits**

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.
- Ability of water and fertilizer to penetrate to the grass roots soil's absorption rate from irrigation
- Grass's ability to withstand low water situations and heat stress
- Root growth activity contributing to the strength and health of the grass
- Ability of bacteria present in the soil to break down and decompose the thatch layer thus increasing the soils ability to hold sufficient amounts of moisture between waterings

## **Spring or Fall**

Both spring and fall are ideal times to aerate cool season turf grass, such as Kentucky bluegrass and perennial ryegrass. In most cases, spring aeration is performed between March and May, depending on location, turf grass species, and intensity of use. Spring aeration is said to be more effective due to the fact that the soil has been loosened by the winter freeze/thaw cycles. This allows for easier penetration for the aerator.

Fall aeration is done in late summer and early fall, usually between August and November. Aeration before, or at the time of late season fertilization enhances root growth responses and improves spring green-up and growth.

Fall is the time when plants are growing their root zones to prepare for the winter months. Aeration opens up the root zone and promotes new growth. This helps the lawn throughout the winter months and prepares it for the spring growing season.

Either season will promote root growth and relieve compaction. When combined with a fertilizer and water the turf will "spring" to life. In areas where turf is thin aeration will thicken and improve the overall quality of turf.