

Core Aeration

Soil compaction, soil layering, and excessive thatch buildup are common problems of home lawns in Michigan. These conditions do not allow adequate water entry into the soil, drainage of water through the soil profile, or adequate oxygen in the soil for easy root growth. The result is shallow rooting, insufficient water use and poor turf health.

Core aeration is the process of physically modifying the soil by removing plugs from the soil profile. There are several types of specialized equipment designed for this process. The most common include those with hollow tines which remove a core of soil. Others have solid tines spikes which punch a hole into the soil.

Soil Compaction & Soil Layering

Soil compaction is the result of soil particles being pushed together which severely reduces the air spaces in the soil. Maintaining the air space in the soil is important for water drainage and oxygen exchange for turf roots. Core aeration provides better rooting which allows the turf to be more resilient and better tolerate traffic, drought, stress, weed, disease, and insect pressure.

Thatch

Thatch is the accumulation of dead and decomposing turf stems, leaves and roots intermixed with live plant roots.

Clippings do not contribute to thatch buildup.

Clippings decompose quickly and should be returned to the turf. Thatch is the brown layer between the soil surface and the green top growth. Thatch that builds up over one inch can inhibit water and air movement and eventually weakens the turf. Effective thatch control requires an integrated program of combined proper grass selection, irrigation, fertilization, and timely core aeration.



Cultivation Equipment

There are several types of core aeration tools. MSU research indicates that using a machine which removes a core of soil is more effective than those that slice or push a hole into the soil using a solid tine.

Core Aeration Frequency & Timing

For many bluegrass lawns, one core aeration per year is adequate. If there is a significant thatch layer (1 inch or more), or the area is severely compacted, then two or more aerations per year will be beneficial. Sodded lawns may also require a second aeration to control disease and integrate the two soil structures. The degree of compaction, soil conditions, and the use of the turf will determine how frequently aeration will be needed.



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