



# GOLF TURF NEWS

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## THE IMPORTANCE OF TURF AERIFICATION

A number of mechanical, cultural practices are commonly used in turfgrass management to help develop and sustain quality turf. These practices physically alter the plant's environment by removing and/or relocating soil and organic materials. Coring, slicing, spiking, and vertical mowing are different methods that are used and they vary in the degree of cultivation.

Coring or aerifying is the most intensive form of cultivation. Coring uses hollow tines that remove turf, thatch, and soil in cores of 0.25 to 0.75 inches in diameter and up to 3 inches long. There are a number of commercially available coring machines.

The main function of aerifying is to open up the soil and thatch layers and allow oxygen in and carbon dioxide out of the root zone. Roots and soil micro-organisms use oxygen for respiration and other metabolic processes, and release carbon dioxide. Water and nutrient uptake depend on the soil having adequate amounts of oxygen so that roots can function properly. If the oxygen is used up in the soil, absorption by roots ceases.

Aerification provides many benefits to turf: root and shoot growth are stimulated around the holes, and poor root systems can be quickly improved if diseases and nematodes are not a problem. Dense roots are often observed in aerifier holes.

Cultivation by coring helps alleviate many physical problems that cause poor aeration, such as soil compaction, layering, and thatch. Wetting of dry soils can also be improved by coring.

Aerifying can be accomplished at any time the grass is actively growing. This is normally April through September in Florida. A time should be chosen when the grass is not under stresses from the environment or pests. If a nematode infestation exists, it should be corrected before aerifying. This will help promote rapid and extensive root growth after coring.

Frequency for aerification depends on the quality and use of turf. Normally coring is done in spring and fall in Florida, but if problems such as compaction, layering, excessive dry spots exist, coring may be done once per month during the growing season. No one has ever had problems with over-aerification, except budgetary.

Size of the tines used depends on the reason for aerifying, the area being aerified, and the piece of equipment being used. Large tractor drawn units which take large cores (0.75 inches in diameter) are used on tees and fairways. On greens, several sizes of cores can be taken. Small (0.25 inch diameter) tines are used for routine aerification. Large (.625 inch diameter) tines are used to correct major compaction and layering problems.

The cores should be removed from greens if there is any contamination problem. However, cores can be matted back into the green if no problems exist. This will provide a light top-dressing. Cores are best disposed by matting on fairways and other playing surfaces.

The importance of aerification in Florida is often underestimated because people think our sandy soils are sufficiently porous, but many cultural problems occur that stem from the lack of oxygen in the root zone. Thatch and heavy rainfall can seal the soil and prevent oxygen movement into it. Root degeneration usually then will occur in water-logged soils making it difficult to get fungicides into the root zone to prevent this from happening.

Aerification is an important turf management tool that can help correct existing problems and prevent other problems from occurring. High quality turf often depends on aerification.

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