AERATION

WHY AERATE?

A well-structured soil contains equal volumes of air and water in the pores that lie between the solid matter. Drainage is, basically, water movement down through this pore space. Roots also grow in this pore space. Any compression of the space taken up by air will adversely affect drainage and root development, thus plant health.

Aeration is any mechanical treatment that sustains or increases the air space within the soil profile, thus producing better drainage and healthier turf. A well-aerated soil will support a strong microbial population, which brings many benefits to grass growth and the digestion of organic matter.

The result of compression of the air space within a soil is known as compaction.

PROBLEMS CAUSED BY COMPACTION

- Poor drainage (see image opposite).
- Poor, weak grass growth.
- Shallow root development.
- Increased thatch accumulation.
- Annual meadow grass (*Poa annua*) promotion.
- Inconsistency of turf vigour, firmness and thus receptiveness to the golf ball.
- Unreceptive soils.
- Increased drought stress.

BENEFITS OF AERATION

- Relieve compaction.
- Promote proliferation and health of beneficial soil microbes.
- Increase root development (see image opposite).
- Improve drainage.
- Promote healthy strong grass growth.

This final point is critical as only a healthy sward will withstand heavy golfing traffic and tolerate all of the other maintenance procedures that "finish off" a quality playing surface, e.g. mowing, verticutting, rolling and top dressing, as well as being in a fitter condition to fight off disease.

AERATION

WHEN, WHERE AND HOW?

All areas of the golf course require aeration. Those areas receiving the most traffic require the most frequent treatment. This means that greens, green surrounds, tees and landing areas on fairways should form the focus of the aeration programme.

The actual amount of aeration required is dependent upon many factors such as the weather conditions, type of soil and the amount of play and is very site, or even green specific. For instance an inland course based on heavy soil with 50,000 rounds of golf per year will require more aeration than a free draining sandy links, which receives less than 20,000 a year.

Aeration should be seen as a package of treatments, which could incorporate forms of scarification and top dressing. The objectives of an aeration programme are to improve the oxygen balance of the rootzone to optimise sward health as well as improving drainage. Different forms of aeration will be required at various depths to achieve these objectives.

Aeration should be considered a year-round operation, with some minimally disruptive aeration being achieved during the man playing season. Historically, when such equipment to achieve this was not available, aeration tended to involve using large tines during the late autumn and winter months, which resulted in inconsistency in surfaces, greater seasonal variation in root development and significant surface disruption.

The correct timing of aeration should ensure that maximum benefits of the operation are achieved, but at the same time the least possible disruption to golf. Many clubs are now choosing to implement the main autumn aeration operations earlier in the year (i.e. spring, midsummer or late summer / early autumn) to fulfil these aims.

Finally, aeration should not be thought of as a single operation or seen as a treatment on its own. Climate Change and greater amounts of play has essentially meant more regular aeration operations are required through the playing season. Utilising modern machinery means disruption is kept to a minimum.

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