



MAIN PIC: AeraVator UA60 with standard vibrating tines overseeding a fairway

INSET BELOW 4AERO80 – UA60 AeraVator with vibrating tines & seed box

BOTTOM: Multi-line – The AeraVator multi-tine shaft produces 600 holes per sq metre

An introduction to aeration

Aeration is simply one of the most important maintenance tasks carried out on turf. Here Andy Wight fights its corner with ten reasons why he feels it's so critical

Why is aeration so vital?

Having taught this subject for many years I consider there to be 10 basic reasons/advantages of aeration of sports turf:

1. It allows air into the soil - turf grasses need oxygen for respiration. Plant roots take up oxygen and give off carbon dioxide. Soil must be able to “breathe” in enough oxygen for roots to function properly.

2. To improve the drainage of the turf surface and underlying material, thus improving the

playing surface and reducing the potential for soil compaction and turf surface damage.

3. To reduce the occurrence of some fungal turf diseases such as fusarium patch and anthracnose which find it easier to spread from plant to plant in moist conditions caused by poor surface drainage.

4. To remove compaction from the soil. Compaction reduces drainage, root growth and resistance to drought as well as creating a hard playing surface. Compaction is caused by compression of the soil particles (by the movement of players and machines across the turf



about the author



Andy Wight is head of work based learning for land-based industries at Oaklands College where he has delivered greenkeeper training for over 20 years. He has worked closely with the GTC on greenkeeping qualifications and helped write the national learning notes for greenkeepers at level 2.





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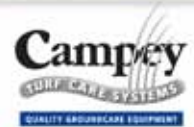
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surface). The reduction of compaction can be best achieved by the use of hollow tines which remove a core of soil or extraction by the effective Deep Drill aerator. Alternatively compaction can be relieved by the use of equipment which heaves the soil, such as vertidrainers.

5. To encourage root growth - if done at the correct time of the year. The slicing of the grass roots stimulates the plant to produce new root material increasing its mass and depth. The holes left by aeration also offer an easy route for the turf grass roots to progress downwards into the soil.

6. To stimulate aerobic soil bacteria which are vital to soil health. By virtue of increased oxygen levels in the soil, bacteria in the soil break down fertilisers for plant growth as well as breaking down organic matter (thatch). It is also thought by many that soil bacteria can be beneficial in controlling some damaging fungi in the soil.

7. To aid the penetration of irrigation water. This is particularly important when compact dry soils occur on a sloped area where

run off of irrigation water is a problem. This is often done by the use of sarrel spikers.

8. To help in the control or reduction of thatch in the turf. The use of hollow tines is well suited to this role as a plug of thatch is physically removed during the aeration process.

9. To help in the process of rootzone improvement. After aeration topdressing can be applied to the turf surface and can then be worked into the aeration holes to help improve drainage. Fertilisers and chemicals (such as wetting agents in granular form) can also be worked into the rootzone in the same way. In addition seed can be worked into aeration holes at the same time as topdressings where they can germinate (this is best done with equipment such as a sarrel roller so the seed is not worked in too deep to germinate effectively). In recent years the advent of "Drill n Fill" machines have enabled greenkeepers to drill to a depth of 31cm and backfill these holes with free draining materials such as sand and/or an amendment that brings soil improvement to new levels

10. To help maintain all round soil and turf grass health, thus reducing turf grass problems such as fungal diseases and certain weeds and moss which thrive in the presence of high moisture levels.

I have noted there is a tendency for some greenkeepers to aerate less than they used to and I am often told it's due to complaints from the membership. However the thing about not aerating is the effects are not obvious straight away. Everyone notices if you don't cut the greens or water them but lack of aeration takes a while to bite and it's several years before things start to get out of control. Of course, it's then harder to recover and you have to explain why you suddenly have to carry out lots of aeration. You can also bet it will be the same people who complained about the aeration who will now be asking why you have not been doing it and why you let the greens get into such a mess!

So next time a golfer stops and asks why you seem to be ruining their putting surface you can reply "It depends how long you've got - I can give you ten good reasons if you have the time?"



ABOVE AND BELOW: EcoSol Drill and fill machines

RIGHT PAGE: Koro RCD MKII (81), Campey Turf Care





DRAINAGE OR COMPACTION PROBLEMS?



Drill n Fill or Deep Drill is the solution

Drill n Fill aerator

- ▶ Drills to 310mm, extracts and backfills in one action
- ▶ Ends puddling after downpours
- ▶ Minimises winter closures
- ▶ Percolation ducts connect to deeper drainage layer

Deep Drill aerator

- ▶ Drills to 450mm to ease compaction instantly
- ▶ Extracts rootzone in one action
- ▶ Penetrates hard pans and marl layers
- ▶ Promotes deeper roots to knit loam layers



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