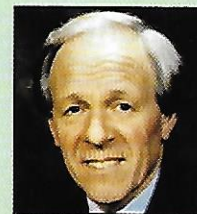


Greenecraft



Our resident green maintenance expert Dave Bracey continues his series on hollow tining

Soil Exchange

With soil exchange, this term means to alter the structure of the soil to either increase or reduce the water retention capacity of the soil. This would be quite widely used where crown greens were developed.

As the demand for a better surface of grass increases, so the condition of the soil below the turf needs to be improved to allow play at any time during the season. It must be understood that the season for crown green starts earlier and finishes later than for flat green.

There are instances, of course, where flat greens have a soil structure problem. Not all greens have been laid from scratch and some could benefit from improvement to their soil structure, integrating suitable material after extracting some of the existing material.

Assessment

Is it really necessary to change soil structure?

1. Use soil profiler – illustrates below surface structure.
2. Check previous known history if possible
3. Profiler will give good guide to experienced person of work done over last five years.
4. Consider tools and labour available, and outlet of drains if applicable.

With a clear picture of what there is, it may be that with regular maintenance, major work will not be required. But if it is, then we can consider the problem. Is it too wet and needs draining material integrated into the root zone, or too dry and needs a water holding mat, and at what depth?

Water retention

We need to decide on what depth soil moisture needs to be held to benefit summer growing perennial grasses. My starting suggestion would be 100mm which is well out of range of Poa Annua (Annual Meadow Grass) but this could vary according to the location of the green.

Once the depth is agreed and the hollow tining completed in one or two directions to the required depth, an estimation of coarse peat suitable for use on the green to hold moisture is calculated, bearing in mind that peat absorbs seven times its weight of water.

We need a 15mm layer of peat at the bottom of each hollow tine hole. Great care must be taken when applying this material. Ideally there must not be any peat left on the surface. This is achieved by working the peat down the holes using a lute.

Other materials, which can be used as general feeds, are slow nutrient release materials. Seaweed was used for many years, and well rotted composts can also be adapted to hold moisture.

Water release

To improve drainage, coarse gritty lime free sand can be worked into the hollow core holes, with great care taken to remove any unwanted material.

When improving drainage, care must be taken not to overdo the extent. A soil profile will indicate obstructions. For example, silt from the original sea washed turf could easily prevent water from moving downwards.

Scratching

This means scarifying, so teasing thatch, the dead, dying and deceased grass weeds or moss materials, from the surface. This is done in several directions to remove as much debris as possible. This operation can be accomplished by setting the rake at soil surface level, but not into the soil.

It will be the changing of direction that will allow excess material to gradually thin out. Always clean up after each pass – not to do this will result in the machine riding on the debris and not being effective on the next directional pass.

This preparation, if not done gradually during the season as would normally happen, can be very time consuming. Perhaps, from what I hear from time to time, six to eight different passes are needed, producing mountains of thatch.

Often with good scarifying, followed by intensive spiking (twice a week during October and November and again in February and March), the improvement on the green would be such that no further need to alter soil structure would be required so saving money.

Not carrying out maintenance properly will always result in major expense later. The choice is yours!

Knocking holes

Spiking – Now with a clean surface and moisture down to 150mm, having watered if necessary, spiking can be done efficiently – either root pruning, solid, chisel, or diamond tines, or shallow or deep slitters. It doesn't matter in the Autumn what the shape is – just knock holes!

Get that winter rain into your green while you can, restoring the water that evaporated during the summer months. Don't worry about too much spiking, as you can never overdo it. Water in the soil is a lubricant for spikes, reducing wear and allowing spikes to come out cleanly so preventing surface damage.

Root zone improvement

With only one pass, tine holes will be at 75-100mm apart, and so not much improvement will be made with the root zone improvement materials (typically coarse sand, peat, clay, seaweed, and charcoal which absorbs acidity/alkalinity as well as improving the structure). Several passes are needed.