

# WET OR DRY, DRAINAGE REMAINS VITAL TO GOOD TURF HEALTH

By James de Havilland

**Such are the vagaries of the weather these days it seems we either tend to have too much water or, think back a couple of summers, too little.**

One point that has not altered, however, is the beneficial effect good drainage has on the overall 'health' of sports turf. Mentioning drought when looking at drainage may seem a bit odd, but it is worth repeating.

Well aerated and drained soils are typically better at supporting plant growth. So it follows that all types of sports turf will not just play better when grown on a well drained soil, it will be better able to cope with climate extremes too.

When looking at drainage in general, a key point that is often overlooked is that an existing

primary drainage system may not be functioning as well as it could. Blocked, collapsed and silted up main drains cannot be expected to cope. If these drains feed into open ditches, it also follows that water needs to be able to get away. Overgrown ditches with silt running at the same level as a drainage outlet compromise water flow.

So, job one when looking at any drainage issue is to make sure the primary drainage system is in good shape. Many systems will date back to 1980s or even earlier and by now most of these will be in need of some attention.

This is something that seems to be broadly overlooked. In agriculture, many farms will have field drains water 'jet' cleaned every five years or so. This is particularly relevant where silt and

ochre build up within the drainage pipe - it is a recurring problem.

Mastenbroek developed specialist drainage kit for sports turf back in the 1980s, this coinciding with a decline in agricultural drainage due to subsidy removal back in 1984. Although now best known among specialists for its self-propelled trenchers and straight leg pipe laying kit, the company continues to make specialist drain jetting equipment.

In very broad outline, these tractor mounted tools comprise a pto driven pump, with the water thrust from the jetter nozzle pulling the hose up the drainage pipe.

This is fine for agricultural field drains. This type of equipment is not widely used for sports



Ochre is a particularly common sediment found in primary drainage systems in certain parts of the country; note the rusty brown deposits flushed from the pipe pictured. Mastenbroek jettors are typically used for agricultural field drains, but there is no reason why they cannot be employed in sports turf drainage.

primary drain cleaning, but there is absolutely no reason why it could not form a valuable aid to getting a choked system running again.

Assuming the primary drainage system is in good order, secondary drainage is the component that speeds the passage surface water from the playing surface and into the piped drains.

The key familiar systems will include sand and 'gravel' band drainage, modern systems now including everything from a purpose cut trench through to a sand filled slit of assorted depths and spacing.

It is secondary drainage that most turf professionals will consider doing for themselves. Although it is dangerous to generalise, there are two key approaches; slits and trenches. Slit based systems are the broadest group.

At the 'shallower' working end of the spectrum there is equipment that includes the Imants Sandcat, from Campey Turfcare, and the BLEC Sandmaster machines to include the Vibra Sand Injector.

These units create a slit into which sand or other drainage medium is placed. The Sandcat works to depths of 150mm, the Vibra Sand Injector to between 50 and 250mm depending upon model.

Although a Sandcat and a BLEC Sandmaster/Sand Injector appear do a similar job, they work differently. What they have in common is that they are 'user friendly' and designed to be owner - as well as contractor - operated.

Next up are powered disc slitters. These range from small units that can be mounted on the rear linkage of a small compact tractor, such as the Auger Torque 250 models. These can produce a trench width of between 50-90mm and work down to a depth of 250mm or 300mm.

Integral hopper and discharge conveyor slitters are the more sophisticated next step up, with Shelton Sports Drainage Solutions offering a comprehensive range of kit that can be used to install both primary and secondary drainage systems.

AF Trenchers also offer slitting wheel units, to include its high output Wizz Wheel 75 for tractors in the 90-160hp power bracket through to its dual application AFT 45 model. This can be used with a chain trencher, the same driveline also accommodating a slitting wheel.

Trenchers can be used to create broad sand or more typically gravel filled 'French' drains, with a range of pedestrian trencher models to include units from Lewis, Predator Manufacturing, Tracmaster, Vermeer, Kanga Loaders being available. These smaller trenchers are often available for hire, so are worth looking into when you just want to create a small drainage trench.

Although you would not want to use one on fine turf, a mole drain can be useful in helping to divert run-off water from a playing surface. Small tractor mounted units, such as the MO1 and MO2 from Kubota will form a 28mm channel at a depth of up to 300mm.

As a broad rule, slit drainage techniques are best carried out in moist soils, trenchers working best in dry soils. It is important to appreciate too that draining sports turf is not as simple as the wide variety of equipment on offer may at first make it seem.

The laying of primary drainage systems, for example, needs to be carefully planned to ensure drained water can subsequently get away. No point installing a system that subsequently runs below the local table.

Secondary drainage is well within the scope of grounds staff but again the system needs to be carefully planned and executed. In some instances it can be more cost effective to call in a drainage contractor, particularly on a larger project.

There is also the option of 'partnership' working as offered by companies who include Shelton Sports Drainage Solutions. This allows you to hire in specialist equipment and expertise, with you providing additional labour and equipment. Working in this way can be a considerable saving over direct contracting.

One final point. When running a trailer or dumper alongside any drainage tool to remove spoil, think tyres. The amount of damage a heavily laden trailer or hired in dump truck can do should never be underestimated. Soft, broad shouldered tractor and trailer tyres, running at a low inflation pressure, can make a huge difference to both the effectiveness and longevity of a secondary drainage system.



AFT Trenchers offer a broad range of both trenchers and slit wheel units. Of equal importance, take a look at the purpose designed sand discharge trailer. The 'hopper' body swivels to allow the unit to discharge to the side or rear and runs on a four-wheel trailer. Transport of materials to and from a drainage site is often overlooked.



FEATURE

(above) Auger Torque Europe produces three point linkage trenchers and disc trenchers. A slitter unit's price will depend upon the type of blade fitted, but its base form prices will be under £2,500. Although primary uses will be restricted by the units 50-90mm cutting width and 250mm or, as an option 300mm cutting depth, a 'slitter'; like this is simple to use, making it easy to lay underground pipes, cables or buried fence runs.

(right) Shelton Sports Drainage Solutions offer not just a range of specialist kit but also a service that enables you to hire in specialist expertise too. Note the use of a four-wheel axle on the dump trailer.

(below left) BLEC Sand Injector and Sandmaster can de-compact and sand slit in a single pass. Ground Breaker tines form the slit for the following coulters. The rear tyre press consolidates the ground. The BLEC Sand Injector also has an integral rear roll, a useful addition that can help in difficult conditions.

(below right) The Imants Sandcat from Campey Turf Care Systems is designed to work with kiln dried sand. The 8mm thick rotary tines that look like those fitted to a Shockwave decompactors but those of the Sandcat are modified to produce a slit. Metered sand falls from the integral hopper into slits spaced at 150mm and 150mm deep.



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 (For further information, see page 70)