

For proven aeration and soil shatter to depths of 16in (40cm) or more, with minimal surface disturbance, the Verti-Drain has few challengers. Fairway models come in 2m and 2.5m widths suitable for tractors of 45hp upwards. A choice of solid or hollowing coring tines is offered in three tine different widths

Unless you've been working in some foreign clime for the past few years, there should be little need for a reminder about the difficulties that the British weather is creating for turf professionals, particularly over the last 12 months. A parched summer, followed by an uncommonly wet autumn and winter, and then a return to near drought conditions in most parts of the country during early spring, have played havoc with many a well-planned course maintenance programme.

If we are to believe the meteorologists and environmentalists, the situation is unlikely to improve until positive steps are taken to minimise the level and nature of industrial and domestic pollutants being discharged into the atmosphere. In fundamental terms, the world's climate is believed to be undergoing a small, but measurable, change, with the four seasons as known by our great-grandparents becoming less clearly defined. This change is being accompanied by more extremes in weather patterns than have ever been discussed on a course in basic turf management techniques.

However, despite the gloom in some quarters, there is no reason why greenkeepers should not cope comfortably with the climatic change, if that is indeed what is taking place. It simply requires a little more flexibility in planning and a need by golf clubs and players to be more understanding of the difficulties that weather extremes can bring.

The one area of a golf course which suffers perhaps the greatest in all weathers are the fairways. Tramped by hundreds of pairs of feet When it comes to fairway maintenance, greenkeepers need to be just that bit more flexible, says MICHAEL BIRD



Total, spot or selective spraying of all turf areas is possible with the latest range of PS demountable sprayers from Hardi, offered with a choice of 300 to 800 litre tank sizes and boom widths of 6 or 8 metres. Available for most specialist turf vehicles, the sprayers can be had with chemical induction bowl, hose reel and hand lance and a self-filling system

throughout the year, their sheer size means that they cannot receive the same level of attention as paid to the tees and greens. In any case, fairway maintenance has traditionally been left to times of the day and year when minimum inconvenience or disruption is caused to those playing a round, irrespective of the fact that the turf or subsoil may not be at its most receptive or responsive to the treatment being carried out.

A strong case for 'spare' fairways could be put by most greenkeepers, citing the example of winter tees and greens. However, with space at a premium on most established courses, there will be few who get the chance to rest a fairway and provide it with the necessary full recuperative treatment. A dense, uniform, tight grass cover should be the aim on all fairways, comments Peter Smith, greenkeeping course tutor at the Warwickshire College, Moreton Morrell, "Ideally, a golf ball should not be sitting light on the surface, as this will only encourage the taking of large divots," he says. "A small, tight divot is a clear indication of a good, tight sward." The condition and growth of fairway grasses need to be maintained with the help of appropriate nitrogen feeds during the season. Smith always recommends carrying out a soil analysis before the first dressing in mid to late March. He would then expect a maximum of three further treatments to be carried out during the growing season, depending on the weather, the rate of growth and whether clippings are boxed or returned to the turf. If clippings are returned, then routine fertiliser treatments are not considered necessary and decisions on timing should be made according to the condition, vigour and appearance of the turf. Only on intensively-used areas subjected to high wear will localised applications of nitrogen be helpful, applied in two or three dressings of around 4g/m2. These can be given as ammonium sulphate or in a mini-granule, if conditions are particularly acidic. However, no fertiliser should be applied to bare ground until reseeding has been carried out or new turf laid. In very dry summers, such as those = 19

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Built to apply a variety of top dressings across a 48in (1.22m) width, the pto driven Sisis Powaspred is available in trailed and fully-mounted versions to suit a wide range of power units. Delivery from the 14cu ft (396 litre) hopper is by rotating brush and utput is 2 acres/hour at a forward speed of 4mph. A 78in (1.98m) model is also available

17 • experienced in recent years, Smith recommends minimal fertilising and the use of clippings as a mulch to retain available moisture within the turf. "This may mean raising the height of cut a little to prevent possible scalping, giving the grass more opportunity to recover after a cut," he comments. "However, on some courses, particularly those with freedraining soils, there may be no need to cut the fairways for weeks on end. In such areas, the grass varieties are normally extremely hardy and are able to withstand long periods without water."

Where clippings are left as a protecting mulch, keep an eye open for any build-up of thatch. If localised thatch does manifest itself, then scarification is the most effective answer, taking care to avoid over-energetic action, particularly in dry periods. Properly adjusted, a rotating vertical blade or rake can remove the offending thatch quickly and efficiently without uprooting healthy growth or causing an unsightly mess, enabling air, light and water to enter the soil. Clearing up can be equally speedy using a brush collector, turf vacuum or even one of the new generation of fan-assisted collectors linked to a rotary mower deck. For more widespread thatch, a spiked chain har-



row is highly effective, although it may be better to postpone the work on a complete fairway until the throughput of golfers reduces later in the year.

Problems with disease are normally few and far between on fairways, although excessive soil nitrogen carried over into wetter periods can lead to infection with fusarium patch disease. This can be countered by adding potash to any late summer treatment, accompanied by a soil analysis for safety's sake. Other treatments may include spot or selective spraying against daisies, dandelions and thistles.

In Peter's experience, three of the biggest nuisances on fairways are rabbits, moles and foxes, resulting in untold wear and tear to mowers and leading to ground being continually under repair, to the dismay of greenkeepers and golfers alike. Apart from sound fencing in vulnerable areas, rapid repair of damaged turf and humane control methods, there is very little that can be done to deter turf predators, especially where a course borders heathland.

The heavy, prolonged rains during last winter brought drainage problems to the notice of many turf professionals, with run-off, blocked pipes and outfalls, surface ponding and = 20



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Above: Two hollow coring patterns can be selected on Toro's Fairway Aerator to deal with most turf aeration, thatch control and drainage needs across large turf areas. With a working width of 63in (1.6m) and workrate of 1.5 acres/hour, the machine can be set to work a maximum of 5in (127mm) deep behind tractors of 35 to 45hp.

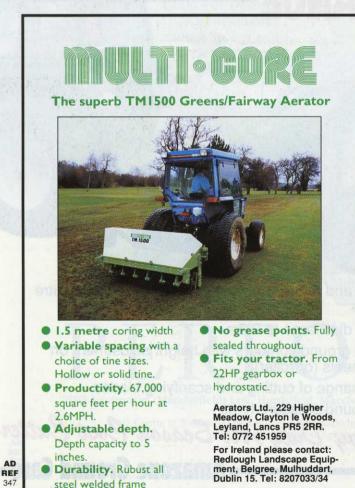
Right: Suitable for removal of thatch and dead material across large, open areas of turf, the Wessex grassland chain harrow comes in 8ft and 9ft (2.4m and 2.8m) working widths to suit tractors of 20hp and 30hp respectively. Both models have folding wings for transport and have adjustable tension chain links to suit conditions





19 \Rightarrow soggy patches highlighting those areas where remedial treatment is needed. Summer is the time to clear ditches and drains, although excavations are best left until the autumn. If the greenkeeping staff do not notice a drainage problem, they can be sure that any golfer who has to retrieve a ball from a puddle will quickly bring it to their attention. For that reason, Smith advocates that all fairways be walked regularly through the year by those charged with their maintenance. An even better solution is to play the course regularly oneself.

Most surface and sub-surface aeration and deeper drainage work is left until the spring or autumn when the need is greatest and it is hoped that the soil will be in the most receptive condition. However, there are certain aeration treatments which are more effective if carried out in a drying soil rather than one subjected to wetter spring or autumn weather. These include sub-soiling, moling and slit drainage, where shattering of the compacted sub-surface layers can help dramatically in the percolation of surface water. Great care needs to be taken, however, to avoid work which leaves slits which open up as the soil dries out, producing gaping holes which will be = 22



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 $20 \implies$ difficult to repair. Surface aeration should be confined to the use of solid or chisel tines in the summer, although a top dressing of sand or sand-based compost will help reduce the level of visible surface disturbance, particularly when verti-draining or spiking to depth on greens approaches or heavy traffic routes on the fairway. Sand top dressings can also be most beneficial in improving the drainage efficiency of heavy clay soils.

At all times, one has to be aware of possible disruption to play and ensure that the work carried out will have positive results which justify the need to move onto a fairway during the busiest time of the year. Of all the regular summer maintenance work required on fairways, mowing will be the most frequent and important on many courses. Grass should

A FAIRWAY TO GO

never be allowed to grow too long. Aim for a height of cut of between 14mm and 19mm (0.5in to 0.75in), removing about one third of the existing growth at each cut to achieve the required length. Correct mower settings and maintenance are vital for even, healthy grass growth, with all cylinders adjusted to the same height and the cutting edge keen and true to the bed knife.

There are few better sights than a fairway evenly striped along its length. Apart from the cosmetic appearance, striping can help emphasise contours and the shape of the fairway, helping golfers with their game. "It's a fact that fairways can be neglected due to pressure of work on other parts of the golf course," points out Smith. "However, with just a little attention to the density and length of the grass, its nutrient requirements and aeration needs at appropriate times of the year, there is absolutely no reason why one's fairways should not gain the level of praise normally reserved for greens.

"Golfers also need reminding that a divot cannot replace itself. Someone has to do it, preferably the person responsible for its removal."

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