WET WET WETTER

After the difficulties experienced with loss of grass cover due to prolonged drought stress over the last few years, an extremely wet, mild autumn and early winter period has highlighted how rapidly conditions can fluctuate and the types of extreme in weather now experienced. This situation makes the greenkeeper's task of maintaining the fine balance between offsetting high levels of course usage against achieving quality year round surfaces very difficult, especially on low lying golf courses with heavy, ill-drained soils. It is therefore essential that quick responses are made to rapid changes in the weather and action is taken in advance of problems occurring. Forewarned is forearmed.

A surface problem?

In a number of situations the difficulty of poor drainage and muddy conditions may well relate initially to the immediate soil layers, particularly where the loss of grass cover has resulted from compaction, prolonged drought stress or significant thatch build up. All these conditions encourage surface moisture retention and hence exaggerate wear and tear with consequential loss of grass cover, levels and playing quality. A package of aeration treatments including hollow tining and slitting in the early stages can help to open up the top 100mm (4") as well as removing thatch. Thereafter, the soil profile can be opened up further by degrees through, for instance, Verti-draining or deep slitting. Ground conditions should be firm enough to take each unit, yet the soil moist enough to gain good penetration otherwise resultant damage will nullify the benefit gained.

It is absolutely essential to avoid aeration work, especially the deeper treatments like Verti-draining, when the soil profile is saturated to depth and during or after prolonged periods of heavy rain. If the timing is wrong then instead of excess water shedding off the surface, rainfall fills up the tine holes above a saturated base making the greens/tees like puddings. Wet surface conditions invariably lead to the cancellation of top dressing application, which only increases the speed and severity of the water retention. In such a situation the only real option is to let the surface dry out over a long period before the green staff can take the necessary remedial action. The key here is timing, with the emphasis on anticipation and an early response. This is so important where we have high course usage.

Prolonged mild, wet conditions invariably encourage earthworm activity on parkland courses. Very heavy worm casting in itself can create extremely muddy conditions which affects appearance, immediate surface levels, drainage, sward density and weed populations the following year. Accordingly, an early application with an approved wormkiller can keep surfaces clean and relatively dry, although with the active ingredients left on the market two or three applications may well be required through the autumn to spring period.

On a localised basis

Surface ponding and stagnation can often be exacerbated by sub-surface seepage and run off from higher ground. On a localised basis this situation can be tackled through the introduction of a catchwater intercept drain around the toe of the bank taking care to avoid pop-up irrigation supply pipes. Ensure the catchwater drain encompasses the whole of the surface run off area and that there is a fall on the drain of no less than 1:200. The drain should also be connected to a positive outlet.

Low lying moisture retentive sections of green, surround and fairway are further trouble spots where localised aeration treatments can be given to prevent surface ponding and the development of stagnant thatch. There is still room for localised hand forking and hand hollow tining at close centres and infilling holes with approved medium coarse sand, although mechanisation allows a quicker and more effective treatment, ie. a soil ameliorator (locally) or the Verti-drain (overall). In the case of the latter, infilling holes with sand for added drainage is another benefit. Where design causes major problems in lower lying features, another option is a spur drain to tap the area with the addition of a solid vertical pipe in the lowest spot connecting the surface with the aggregate. The pipe can then be covered by a gauze or synthetic grass hole insert to minimise disruption to play. The diameter of the pipe can be varied according to requirement.

Spread the wear!

Another significant weapon in keeping the course in play is the management technique of spreading wear. The options available are numerous including:

- Regular moving of pin positions on greens, keeping away from lower lying weaker areas during wet weather and strategic positioning to alter traffic route flow on and of greens.
- Re-routing walkways, taking every opportunity of changing the alternative traffic route from time to time to prevent another worn path developing.
- The provision of alternative tees away from the main areas.
- Adjusting the distance for landing zones on fairways by changing tee positions.
- Look at alternative tractor routes through semi-rough/rough and woodland rather than using fairways.

Nevertheless, there does come a point when the above factors are not enough to cope with the disadvantages of poor design, soil profile make-up and lack of adequate drainage. In such a situation the best course of action is controlled usage, eg. a trolley ban for a defined period.

It should be appreciated that considerable damage can occur over a short period under adverse weather conditions and the aim is preservation of surfaces for the main playing season the following year.

Indeed, in certain situations the decision would be to leave well alone by resting the course until such time as the surfaces have dried out sufficiently for the green staff to work on them again.

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The cure

Good drainage is fundamental to successful management and whilst all the above items will bring about short term alleviation, the answer must lie with reconstruction of greens, tees, bunkers and surrounds to provide better design, a suitable depth of free draining growing medium and an under drainage system to take the water away.

On heavy soils and lower lying land it is important to raise tees, bunkers and greens above ground levels to enhance drainage rates and contour surrounds to shed water away from putting surfaces.

In respect of fairways the key to success is the installation of an integrated piped drainage system.

There are far too many golf courses where fairway drainage consists of a piecemeal arrangement of pipe drains, with haphazard design and poor drain profile make-up, including connections. To ensure good surface to aggregate drainage rates employ approved sand as a growing medium over the blinding layer/aggregate, finishing off with a skimming of top dressing mixed with fine seed to aid surface establishment. Drain lines may stand out for a period during drought, but this is worth it for the benefits that accrue in prolonged wet weather. On completion of the project, the drainage system would then be assessed over one or two winter periods with a view to evaluating the subsequent requirement for localised or overall slit drainage or just mole ploughing to aid lateral movement of water to drain lines.

On flatter land with minimal falls ditches can be a very effective alternative as a carrier of water and as an outlet for pipe drainage. Existing open drain networks should be cleaned out prior to the winter period to enhance water flow.

Summary

Preventative maintenance, including attention to specialised aeration work, along with worm control and spreading wear and tear will alleviate problems caused by excessive rainfall on poorly drained golf courses. However, the timing and intensity of treatments given are essential in gaining the best results. Nevertheless, this action only has short term benefit and the cure lies with improved design, growing medium quality and depth as well as the provision of drainage systems.

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