

IRRIGATION



Never use water to make greens soft

Jim Arthur discusses the methods of irrigation and gives advice on the correct use of water.

While everyone plays lip service to the fact that the main problem measured in terms of weeks duration in Northern Europe golf greens is drainage and not drought, nevertheless a week of sunshine has most of those controlling course management, (and this is not synonymous with golf course managers!), rushing to put water on. It would be more sensible to use this heaven sent gift to control annual meadow grass on the lines of the old Scottish greenkeeping adage 'a good drought gets rid of a deal of rubbish' but one has to accept that most of today's golfers like it green – and in their books if grass is not green its dead or dying!

Automatic pop up irrigation is here to stay – I suppose today there are more clubs with it than without – so it is important that this useful facility is not abused. Pop ups are only a way of watering at night, when there is minimum evaporation, without tying up staff during the day (when often in the

old days of hose and sprinkler watering greenkeeping staff could do little more than mow and water greens). They also prevent players interfering with hose and sprinklers, which is far more significant an advantage than hoses interfering with play!

What pop ups cannot do is apply water other than uniformly and that only when the system is properly designed, fully functional and efficiently employed. Badly designed systems are less commonly found than they were a decade ago – the 1976 and 1977 droughts demonstrated only too dramatically how bad was the coverage on some – notably the three headed systems for large greens, where one could stand in the middle of a green and not get wet! It is no answer to such poor coverage to merely increase the duration of irrigation, the dry areas stay dry and the wet ones become waterlogged and thatched.

The aim of pop up irrigation should be to apply the equivalent of a light shower

each and every night, to give the minimum needed to keep the grass alive in the low wetter places, and to apply the balance needed to the drier, raised or sloping areas by hand-held, open hose preferably early in the morning.

Penetration overall must be achieved by long term aeration (however this is done), backed up locally on drying patches by using even hand forks or local quite deep (4" minimum) slitting or solid tining, and employing wetting agents copiously and before the soil has become dry and waterproofed.

There is nothing new in dry patch – (although it is often made more obvious because of the contrast with wetter lower areas). Sixty years ago greenkeepers were using hand forks and soft soap solutions on dry patches long before detergents had been invented, let alone the modern wetting agents based on them and designed for turf use.

There is one hearsay that must be demolished, namely the theory that

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greens should be watered heavily at periodic intervals, and allowed to dry out before applying more water.

This probably derived from the restraints imposed by hose and sprinkler watering. Unless an army of men could be deployed at night to constantly move hoses and sprinklers from green to green as well as to different areas of greens, this meant leaving them on a few greens all night - or at least for long durations. Thus greens were over-watered, but no hose system could cope with watering 18 greens simultaneously, even if, semi-automatic control measures could be devised. The folly of developing this technique to pop ups is that it needlessly perpetuates a fault.

If, reducing the argument to the absurdities preached only a few years ago, greens were watered with pop ups once a week in one application, the demand on the system to water all greens at once would astronomically increase costs, in terms of much larger reservoirs, pumps and pipe work. Consequently when watering in sequence, assuming that ten minutes a night was the norm we would be watering each green for 70 mins, i.e. the cycle for 18-19 would be in the region

of 20 hours a night and day! When would we play golf?

If the course is split into three or four zones to reduce the nightly watering period to more reasonable levels some greens at any given time would be waterlogged bogs, others drying out and others rock hard and virtually impermeable even with aeration.

The answer is little and often - every night in drought, emulating a good shower i.e. about 200-250 galls per 500 sq. yd. green. Of course, stress symptoms must be noted ('shine' on greens means they have gone too far), but it is vital to use water as an aid to management, starting as late in the season as one dares stopping early (late August) to go into the winter with dry greens. Never use water to make greens soft and holding, to make the greens grow or to make it green. The old motto 'If in doubt don't water' is still a good one, but it is fully accepted that some compromise on appearance is necessary, but the problem with pop ups originally was that it was fatally easy to apply too much without realising it. Once annual meadow grass invades, it needs more water to stop it seeding and dying - so

a vicious spiral ensues.

Modern and well designed systems give much more precise and accurate control and distribution, but since we are aiming at wide surrounds and approaches, identical botanically and in all aspects save height of cut to putting surfaces, then we should water surrounds periodically not constantly in relation to their poorer permeability by setting the pop ups to 'full circle' and back with an 80% increase in duration. This counteracts to some extent the effect of wind and other factors, but missed areas must be tackled by hand held hose - it is no answer to step up the time. Fixed arc heads should be changed to adjustable arc heads, especially if the former are 180°.

Individual greens e.g. elevated ones drying out quicker will need more than others (some may need no irrigation at all) but a very rough guide is not to exceed 50 gass/100 sq. yards which on most systems equates with about 6 minutes on the controller or 10 mins full circle. The correct use of water as a servant, not a master, on long term green condition and all year round play cannot be over emphasised.

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