

# Worms turn

## CHEMICALS and the GREENKEEPER



over winter you might decide not to bother. In that case you must be prepared to deal with any weed seedlings growing the following year in the convenient seed-bed the casts have left for them.

But I suspect that many greenkeepers on heavier, wetter soils, especially if they are chalky, will find it pays them to apply wormicides as a fairly regular treatment. It will also pay to remember the benefits from the goodie, non-casting worms and

try to limit the control of the baddies to only what is strictly necessary. One day we might have a chemical that is guaranteed to distinguish between the two. Until then, care and caution appear to be the watchwords.

■ **The author, Geoffrey Ellis, is an independent consultant and writer with some 30 years experience in the agro-chemical industry. He runs a small nursery specialising in the production of wild flowers.**

◆ **The way it used to be... pictures from 'Lawns for Sports' published in 1924, show how 'Carters Wormkiller' handled the problem. And you're right - the end picture isn't spagheti!**

## FIGHTING THE FUNGUS

In an ideal world we would never have any problems with fungus attacks on the golf course if healthy and vigorous turf, with good disease resistance, could be maintained by careful cultural management to shrug off disease. Then there would be no need to use chemicals to keep down pathogenic organisms. However, very few are blessed with the ideal golf course turf, especially on greens, where fungal attacks are most likely to occur and cause damage and where sustaining uniformity and density is vital year-round.

This is not to say that courses which do not have disease-resistant turf on greens (ideally fescues and bent grasses, carefully managed for growth, sited on healthy, well-structured, free-draining soil, out in the open air to produce a stable system) should not practise good cultural control of disease. Indeed, this is essential if reliance on chemical control is to be kept to the minimum. Whilst there is a range of fungicides available for treatment of turfgrass diseases, the range is not limitless: chemical applications are expensive and any input of chemicals into the environment should be avoided if possible. It is always best not to have to deal with disease in the first place and the use of fungicides should be a line of last resort.

The principle of good cultural practise is to create an environment in which disease is less likely to occur. Again, management to encourage disease resistant species within the turf has to be a primary consideration, looking for good aeration and free drainage, together with careful control of fertilizer input, application of irrigation and timing of top dressings. This latter item is a frequent means of encouraging autumn diseases, when year-end dressings are applied late and cause some smothering of the swards at a time when top growth is slow and the grasses are damp.

In the same vein, operations to promote drying of the grass cover are always valuable. The switching of surface moisture is an obvious one in this respect, but of equal if not greater value is ensuring that greens are recipients of a draught whenever possible. A good breeze across a putting surface, encouraged by the thinning of trees and under-scrub, is one of the best 'fungicides' around.

Applying Sulphate of Iron as a routine dressing is often cited as a means of limiting incidence of fusarium patch. This is true up to a point, and there are other beneficial spin-offs from applying sprays of Iron. On the other side of the coin though, acidification of the soil profile can come about by excessive use, and it must always be remembered that Iron is not a fungicide. It may make an outbreak of fusarium less likely, but it will not stop one which has already started.

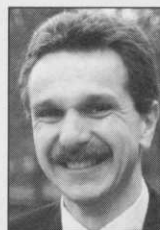
Working on the above principles, there are clubs that rarely, if ever, use fungicides to deal with disease problems. Nevertheless, there are many more reliant on chemical applications to keep putting surface turf in as good a condition as possible year-round, and these have to apply fungicides fairly regularly.

The main problem to be dealt with in relation to fungicide is (by far and away) fusarium patch disease. On average, the majority of clubs will treat for fusarium on greens three times in any one autumn/winter period, costing in the order of £1000-£1500 for an 18-hole golf course. This average treatment frequency may fall within a range of 1-5 treatments per annum depending upon the weather.

So, for most clubs, use of fungicide is a significant item within the budget for the green, merely allowing for applications on putting surfaces. Treatment of other sections of the course beyond immediate greens surround is very rare. Here, the cost-benefit of fungicide application is much less, as the effect of disease is much less damaging in the medium term.

Returning to greens, while application of fungicide is not cheap, nine times out of ten procrastination in its use is expensive too. A few spots of fusarium can run riot in quite a short spell, causing lingering damage. Never forget either that fungicides work best at the outbreak of disease, and the earlier that spraying is carried out (wind and rain permitting) the more likely the chance of complete success first time. Constant monitoring of disease outbreaks is essential if timing of spraying is to be to the best advantage.

When it comes to choice of fungicide for treatment of fusarium, in principle, systemic types are best for the bulk of the year, confining use of contact type materials to the very ➔ 21



by DAVID STANSFIELD

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19 • slow or no growth season (which obviously varies in extent depending upon geographical area, but also with respect to the nature of the turf). Systemic fungicides work well and have the longer term of preventative effect. Also, they have a broad-based effect, so can deal with secondary diseases, and they do tend to discourage worm casting. While there has been suspicion that systemics can encourage thatch fungi, the link is very tenuous and can be safely ignored for the most part.

The systemic fungicides which have been widely used to date have been part of the benzimidazole (Benlate, etc.) family, and closely related in their chemistry. While no doubt these fungicides will continue to be widely used in future, the good news is that a completely new systemic fungicide has come onto the market recently – fenarimol (Rimidin) – which gives more options in terms of alternation of fungicides, so long as care is taken to avoid severe yellowing from use on *Poa annua* dominated greens, as can occur.

Alternation in the use of the types of chemical used for disease control (where practical) is good practice when disease has to be treated regularly, but this is not just a case of using different brand names. Alternation needs to be between different groups of fungicides. The benzimidazoles are very similar in action, as are the dicarboximides (eg. Rovral and Mascot Contact). Fenarimol is different and so too are Chlorothalonil (Daconil) and Quintozene. The reason for alternation is to avoid the development of disease resistance. Even though there is no proven resistance to any fungicide in the UK, this has occurred in the USA, where chemical usage is much more intensive.

Beyond choice of chemical, there is always the thorny ques-

tion of whether to use fungicides as a preventative or a curative treatment. The principle has to be to stick to curative applications wherever practical, to limit chemical input into the environment. However, in certain situations, eg. at clubs which suffer four or five outbreaks of fusarium every year when treating curatively, the application of systemic fungicide on a preventative basis from September onwards can actually reduce chemical applications – and leave better greens.

Using fungicides on the golf course for diseases other than fusarium is comparatively rare. However, it can be necessary from time to time and in these situations accurate identification is essential to ensure the right specific can be applied quickly to deal with diseases such as brown patch, severe anthracnose or dollar spot. Also, to ensure that fungicide is applied in the most effective way, eg. when dealing with grade two fairy rings or superficial fairy rings, or to avoid fungicide use when it could actually be harmful (eg. for take-all) or totally unnecessary (eg. for yellow tuft).

All in all, there is a lot to get right when using fungicides on the golf course even before getting to the operational end of applications themselves, ie. handling and spraying.

The more everyone knows about fungicides availability and disease identification, the better. After that, good training in spraying is vital, ensuring the lessons learned are actually applied. Then, fungicide use will be effective and safe. Even so, the launch of a new fungicide which has no Hazchem warning has to be good news.

■ The author, David Stansfield, is the golf course agronomist with PSD Agronomy Limited.

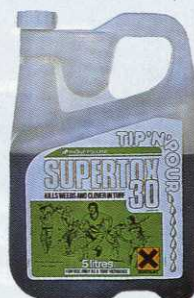
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