New Cure For Sports Turf Diseases

by

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BEING CAUGHT with one's trousers down, so to speak, is as much an embarrassment to the onlooker as it is to the unfortunate victim. At Headingley, where the 4th Test Match nearly came to a premature halt, it was more a matter of being caught with the covers on, than with one's trousers down. No matter how you look at it, however, it certainly turned out to be an embarrassment to all concerned. After such a traumatic experience as this, it is worthwhile collecting one's thoughts and asking what can be done to prevent the situation arising again.

We all now know that the practical joker at Headingley was the fungus Fusarium nivale causing the well known Fusarium Patch disease. The covers had been necessary during the prolonged wet weather preceding the test. This had created a humid atmosphere over a moist turf and also forced the grass to grow away. Both of these conditions are ideal for the rapid spread of Fusarium. Once the disease has infected the turf and these conditions arise, the groundsman undoubtedly has a problem on his hands.

It is probably true to say however that he has, to a large extent, been handicapped in overcoming such a problem compared with his horticultural colleagues in the glasshouse industry who can treat their soils by steaming or drenching with one of many fungicides once the crop is removed. Various new chemical sterilents have come the way of the glasshouse grower over the years, while all the groundsman has had at his disposal are PCNB and the mercury containing compounds (although there is increasing concern about the use of the mercurials in view of their toxicity to man). Over the past three years, however, developments have been quietly but deliberately taking place on a so called new 'wonder' fungicide called Benlate,* which promises to redress the balance for the groundsman.

Benlate has been hailed as a wonder chemical in the horticultural industry where it has lived up to this reputation in every sense of the word, for it effectively controls 14 major diseases on over 16 crops in the UK. It is also the world's first broad-spectrum systemic fungicide, which means that it is taken into and moved through the plant. Furthermore, in contrast to the mercurials, Benlate is completely safe to man.

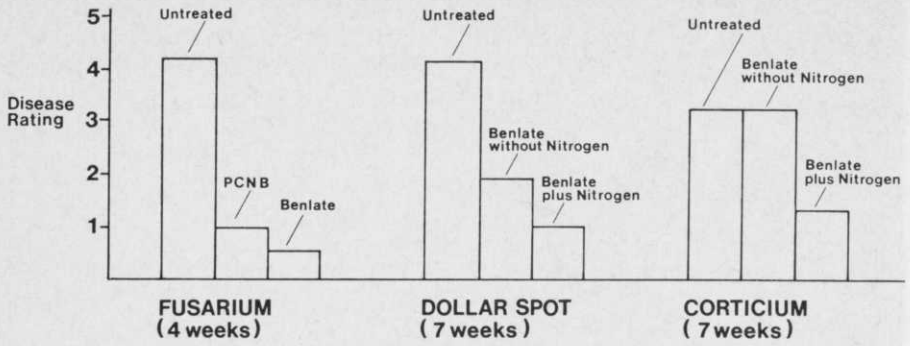
Well how does all this affect the groundsman? It means that he now has a completely safe and modern, broad-spectrum fungicide at his disposal for the control, not only of Fusarium Patch, but also Corticium (Red Thread) and Dollar Spot. It also appears that control of the increasingly important disease Ophiobolus can be achieved with Benlate.

Trial Results

Investigations on the use of Benlate against sports turf diseases in the UK were begun at the Sports Turf Research Institute in 1969, The earlier trials used relatively high rates of Benlate when it was shown that 12 oz/1000 sq. ft. of Benlate gave over 4 months complete protection against Fusarium, whereas a peak infection of 33·3% was recorded on the untreated turf. A similar rate reduced the level of Corticium (Red Thread) from 37% to only 8·7% after 6 weeks, compared to 15% – 18% and 23% for the mercurials and PCNB respectively. All assessments were expressed as a % of the surface affected by the disease.

A similar outstanding result was achieved against Ophiobolus following applications of 6 oz/1000 sq. ft. Benlate applied in August. The mean score for the untreated plots in October was 5·5 compared to 1·3 for the Benlate treatment where a score of 9 denotes a high incidence of disease. The score for other chemicals ranged from 1·8 to 6·5.

* Benlate is a Registered Trademark of E. I. Du Pont de Nemours & Co. (Inc.)



Trials against Dollar Spot using Benlate at the 6 oz/1000 sq. ft. rate stopped the disease and kept the turf disease free for 10 weeks between July-September. To quote from the STRI journal, Benlate was 'exceptionally good both in degree of control and persistance'.

Following these early oustanding results, further trials were laid down in 1971 when reduced rates and the effects of nitrogen in combination with Benlate were studied.

For Fusarium, the earlier 12 oz rate was halved to 6 oz/1000 sq. ft. Again, a quite remarkable degree of control is seen in the diagram to be achieved following curative applications during October.

Nitrogen Effects

The benefits arising from joint applications of nitrogen fertilizers and Benlate under conditions of low fertility were shown from the trials on Corticium and, more especially, Dollar Spot. A 50/50 dried blood and sulphate of ammonia mixture was applied at 3/4 oz sq. yd to an area low in nitrogen one week before application of the fungicides. Benalte gave superior control of Dollar Spot compared to PCNB, and Corticium was completely prevented by applications of Benlate for 4 weeks, again being superior to PCNB.

The diagram shows that there was less re-infestation of both Dollar Spot and Corticium after 7 weeks where nitrogen was applied to the infertile turf. Similar benefits arising from the use of nitrogen under infertile conditions have also been shown to arise for other fungicides.

In view of the outstanding results obtained with Benlate from the STRI and following its widespread commercial usage throughout the USA, recommendations are now being made for preventative and curative treatments in the UK against Fusarium at 6 oz/1000 sq. ft. and Dollar Spot and Corticium at 4 oz/1000 sq. ft. At these relatively low rates it is recommended that applications are repeated, as necessary, at 3-4 week intervals, although trials on Fusarium Patch reported above have shown 17 weeks persistance using a higher (16 oz/1000 sq. ft) rate.

Recommendations for the control of Ophiobolus at the 6 oz/1000 sq. ft rate will probably be made when confirmatory trials have been undertaken.

It is likely that the length of control achieved with Benlate at any of the above rates will exceed that achieved by the mercurials.

Well, the scene is now set for the next test match – Benlate *vs* Fungal diseases. This time, however, the new ball will be in the hands of the groundsman whether he be caring for Test wickets, tennis courts, golfing or bowling greens. There's little doubt that the groundsman will be grateful to the STRI for giving him this advantage, for their work in pioneering this breakthrough for UK conditions has resulted in these recommendations.

For further literature on these recommendations the author asks that you contact him.

Acknowledgement: The Author would like to thank Mr. J. R. Escritt and Mr. A. R. Woolhouse of the STRI *for their constructive comments in the preparation of this article.*