

# Autumn Maintenance and Fusarium Patch Disease

**During the autumn months, greenkeepers are preparing their courses for the rigours which lie ahead in the rapidly approaching winter.**

One of the major problems to contend with is the damaging and disfiguring effects of fusarium patch disease. Last autumn few greenkeepers would have predicted the exceptionally mild winter, with the consequence that it was one of the worst for fusarium patch on record. With this in mind it is appropriate to review the cultural and environmental conditions which favour the disease, and to describe the most effective disease control strategies which can be deployed.

Whilst undertaking autumn maintenance there are two key cultural conditions, namely turf surface moisture and turf fertility to be considered, which are important with respect to disease. Regular slitting from late autumn onwards combined with switching helps to reduce surface wetness and will consequently retard fusarium patch (Fig. 1). Fertility during the winter months, particularly with regard to nitrogen also has a large bearing on disease severity.

As fusarium patch disease is

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favoured by high nitrogen conditions in combination with cool, wet weather, the most severe disease outbreaks are often seen where autumn fertilisers or top dressing has been applied too late in the season, it can smother the grass and create conditions ideal for disease attack (Fig. 2). Of course, the best time for fertiliser and top dressing will vary greatly according to individual situations, but generally speaking the later the application, the more risk of disease.

It is now standard greenkeeping practice to apply calcined sulphate of iron to turf for its beneficial effects on colour, moss, weeds and earthworm casting. As the fungus which causes fusarium patch, *Microdochium nivale* is most active under neutral or alkaline conditions, sulphate of iron, by acidifying plant tissues and thatch to which it comes into contact will help control the disease. Common greenkeeping knowledge combined with experiments at STRI (Fig. 3) have indicated that the regular use of sulphate of iron, although not as effective as a fungicide, will help prevent outbreaks of disease.

Although probably not needed immediately, stock of fungicides should be checked in the autumn and fresh stocks ordered as appropriate. Once disease occurs its spread can be rapid; valuable time can be wasted in ordering and waiting for delivery of fungicides.

Recent trials at STRI in collaboration with Agrochemical companies have shown that a well timed spray at the first signs of disease can give excellent results (Fig. 4), whilst it is extremely difficult to control established disease.

Comprehensive advice on the use of fungicides for the control of fusarium patch is given in "The use of turf fungicides" and "Fusarium patch disease" in Isse No. 165 (April-June 1989) of the Sports Turf Bulletin.



**Fig. 1.** Effect of moisture on fusarium patch. The rh turf plug, colonised by fungal mycelium has been incubated in damp conditions for 24 hours.



**Fig. 2.** Extensive damage by fusarium patch caused by applying fertiliser in early winter. The disease is favoured by high nitrogen conditions.



**Fig. 3.** Experiments at STRI evaluating liquid and chelated iron products for effects on fusarium patch.



**Fig. 4.** The centre plot was treated with a systemic fungicide in late autumn. Compare to the extensive disease in the lower plot which was left untreated.