# 'BINGLEY' . . . sixty glorious years

*Taking of turf samples for assessment, part of the turfgrass cultivar evaluation programme.*

***David White reports on 60 years of progress at Bingley"...***

The Sports Turf Research Institute, affectionately known as 'Bingley', is sixty years old. At an Open Day a group of sportsturf journalists and agronomy experts were privileged to see at first hand the comprehensive nature of the work carried out at this nerve-centre of our industry. For your Editor it was a delight, though clearly a single day was insufficient for the eye and mind to absorb all that is taking place. I would have been happy to spend a further day in the library alone, for this fine collection, ably masterminded by Roger Evans, is a wealth of information. I content myself in the knowledge that every worthwhile piece of literature pertinent to turf grass and agronomy is preserved for all time. I am reminded of the A.A. advertisement, which could apply equally to STRI, "I don't know the answer, but I know a man who does!"

Though sixty years old, STRI is as up to the minute as tomorrow, staffed as it is by young scientists and technicians who breath enthusiasm and dedication into their every action.

One such place is the Biology Laboratory, where the identification of diseases is an essential part of the disease control programme. Identification techniques take many forms, and I was shown the more common ones. Visual symptom observation is a rapid method when seen through the eyes of a skilled observer, though it cannot be used in many situations due to similar symptoms being produced by different diseases. A more time consuming method is where a fungi which causes disease is isolated and grown in a dish, the characteristic spores then being identified. Or an examination may take place under microscope, the spores which may cause disease often being found in grass tissues when observed under high magnification. Finally, there is a biochemical method in which each turf disease reveals its biochemical features which can be detected, using laboratory test kits. This method is both rapid and reliable.

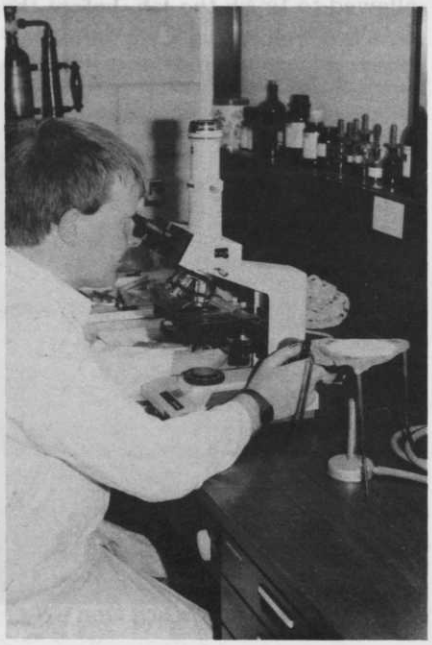
> *"As up to the minute as tomorrow"*

Over-watering has probably been one of the main causes of deterioration of British golf greens. The effects of varying the water supply to a green cannot be considered in isolation and any attempt to study this must take into account factors which will effect the water availability to the grass. Foremost amongst these is the construction of the green and the material used as a rootzone. This in turn will have a profound effect on fertilizer requirements of the green and an experimental construction of three different types is one that I found quite fascinating. The types undergoing test are pure sand, the USGA mix, a mixture of medium sand and peat, and the local top-soil. Irrigation, nitrogen and phosphorus supplies are to be varied in the hope that the optimum requirements for each construction may be found. Early days yet, but it is hoped that the results of this and fertilizer experiments may provide the basis for the creation of a management 'key' to assist greenkeepers in dealing with specific problems pertaining to green management.

I have never seen so much experimental machinery, much of it developed by the STRI boffins, and none more delightfully Heath Robinson — though highly effective — than one for firing golf balls on to greens. It can fire balls at speeds of up to 100 mph and can impart harsh backspin to balls if simulation of, say, a seven iron shot is required. If a turf is to be found that eliminates those tiresome pitchmarks you may be sure that STRI will find it.

Space restrictions will not permit description of the many and varied tests of amenity grass species, wear tolerances or other vital experiments being undertaken. It would take a whole magazine to cover it all. Suffice to say that STRI are doing all that is possible to take greenkeeping safely forward into the twenty first century.

*Below: Disease diagnosis of turfgrass specimens by microscopical examination.*



# Autumn Maintenance and Fusarium Patch Disease

*By Dr Neil A. Baldwin*
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**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 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.

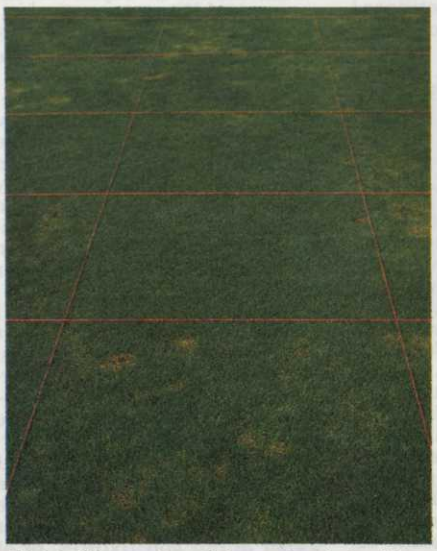

***Fig.4.*** *The centre plot was treated with a systemic fungicide in late autumn. Compare to the extensive disease in the lower plot which was left untreated.*

***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.*