

# SEASONAL MISERY IN THE SHAPE OF TURFGRASS



Individual Poa plant with rotted base - characteristic symptoms of anthracnose.

# DISEASES

Severe attack of anthracnose. Note the yellowing Poa in the sward.



Early symptoms of fusarium patch disease.



Extensive damage caused by fusarium patch disease.



As most greenkeepers are aware, there are several disease problems of fine turf that may be damaging and disfiguring during the winter months. Two such diseases, namely anthracnose and fusarium patch, are particularly troublesome especially where annual meadow grass (*Poa annua*) forms significant proportion of the sward. In this article NEIL BALDWIN describes the cultural and environment conditions that favour outbreaks of these diseases, and gives details of the most effective prevention and control methods available for greenkeepers to follow.

# Curse of the yellow patches

Anthrax, caused by the fungus *Colletotrichum graminicola*, is seen throughout the winter as yellowing individual annual meadow grass plants in the sward. In cases of severe attack large patches of affected turf may develop which cause serious damage to the putting surface. At later stages of disease development small black pin-head sized structures may be seen at the base of the plant which is rotted

(figure 1) and consequently diseased plants may be easily removed from the sward.

Fusarium patch disease (*Microdochium nivale*), a common and familiar sight to most UK greenkeepers in the winter months, is probably the most damaging and disfiguring disease in golf greens. Whilst the characteristic symptoms of orange-brown patches with paler centres caused by the disease are probably

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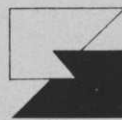
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recognised by most greenkeepers, the appearance of fusarium patch in its early stages of development are not familiar to so many (figure 2). However, it is essential that fusarium patch is identified in its earliest stages as it is then that control methods are the most effective.

The cultural and environmental conditions that favour the development of anthracnose and fusarium patch diseases are categorised in table 1 below:

Thus, with an understanding that both diseases are favoured by the presence of Poa and surface wetness, it is not surprising that these diseases may occur concurrently during the winter months.

#### An old problem, and a new one

Whilst fusarium patch has been recorded for over 20 years on golf greens, anthracnose is a comparatively recent problem. As with most turf disease problems, the increasing incidence of anthracnose in recent times may be associated with the changes in golf course play and greenkeeping practice.

In particular, two factors have probably played a role in the development of anthracnose. The high numbers of rounds played on many of our courses has led to wear and compaction problems, which in turn has led to a stressed annual meadow grass sward. Current trends in greenkeeping practice advocate fertiliser programmes based on nitrogen only, together with minimal irrigation, which again stresses annual meadow grass.

Of course the aim of these practices is to stress the undesirable meadow grass so that bent (*Agrostis* spp) may thrive. However, a stressed Poa is highly prone to anthracnose disease. In situations where the Poa content of the sward is low, anthracnose may be thought of as beneficial as it selectively removes this plant species from the green. However, where the Poa forms a significant proportion of the sward, (figure 2) the disease may be considered a serious problem and thus require control.

#### Integrated Management of Anthracnose & Fusarium Patch

Integrated disease management is defined as the complimentary use of cultural, biological and chemical methods to maintain disease at an acceptable level. These are listed in table 2. It is clear that the good turf management practices of Poa reduction, adequate fertiliser programmes and regular aeration, will have a beneficial effect on the turf to the detri-

# Tackling the old and new threats

ment of disease development. As both anthracnose and fusarium patch are primarily diseases of Poa, biological control: ie choice of disease resistant varieties of grass, is not appropriate.

Due to the widespread occurrence of Poa in golf greens throughout the UK and the cold wet nature of British winters, in many instances both diseases may occur even if all attempts are made to prevent outbreaks by cultural methods. Thus the careful and judicious use of fungicides may be necessary to maintain greens to a good standard.

There is only one fungicide currently Approved for use against anthracnose, namely chlorothalonil (Daconil Turf Fungicide). For fusarium there are several Approved fungicides that may be considered. During the winter months it is the contact fungicides that give the best results as they have eradivative properties. Also systemic fungicides, (table 3), if applied in the late autumn/early winter period, may inhibit the development of fusarium patch.

Further suggested reading: 'Turfgrass Pests and Diseases' (1990) 72pp including 32 colour photographs. £5.50 including postage from: STRI, Bingley, West Yorkshire, BD16 1AU.

● Dr Neil Baldwin, the author of this article, is well known to our readers as the Sports Turf Research Institute's Plant Pathologist.

**Table 1**

Conditions that favour disease outbreak

#### Anthracnose • Fusarium Patch

Predominance of annual meadow grass in sward.  
Surface wetness and poor sub surface drainage.  
Cool ambient and soil temperatures.

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| Low fertility conditions        | • High fertility conditions       |
| Both acid & alkaline conditions | • Alkaline turf surface           |
| Compaction                      | • Humid atmosphere conditions/dew |

**Table 2**

Integrated disease management

#### Anthracnose • Fusarium Patch

Reduce/eliminate annual meadow grass in sward.  
Maintain adequate fertility.  
Ensure good surface/sub surface drainage.

- |  |   |
|--|---|
| Relieve compaction - slitting/vertidrain | • Do NOT apply materials containing lime. Avoid late season fertiliser applications or uneven/excessive top dressing. |
| Fungicides - chlorothalonil Approved     | • Fungicides: see text.   |

**Table 3**

Systemic Fungicides • Contact Fungicides

- |   |   |
|---|---|
| benomyl (Benlate)                                 | • chlorothalonil (Daconil Turf Fungicide) |
| carbendazim (Fisons Turfclear and Mascot Contact) | • iprodione (Rovral Green)                |
| thiabendazole (Tecto Systemic Turf fungicide)     | • quitozene (Brassicol wettable powder)   |
| thiophanate-methyl (Mildothane)                   | • cinclozalin (Mascot contact)            |