

A description of common diseases and ITM controls

The following looks at the characteristics of the top five disease conditions encountered in parkland annual meadow-grass/bentgrass greens within GB&I and the ITM controls which can be applied.

1. Microdochium patch (*Microdochium nivale*)

Also known as Fusarium patch, this disfiguring and common turfgrass disease can occur at any time of year but is most damaging in autumn and winter under mild, wet conditions. Surface scars that occur at this time of year when grass growth is slow can remain disfiguring for many months until they fill in with new growth, which may take until the following spring.

The symptoms can vary somewhat depending upon the grass affected. On annual meadow-grass dominated parkland greens they can appear as smaller spots of 20-25mm in diameter that may coalesce to form larger patches. Spots typically start off orange to brown in colour changing to pale in the central area as they become larger. When active, the outer edge is darker and slimy to touch. On creeping bentgrass larger patches may appear initially and reach 100-125mm in diameter.

Annual meadow-grass is the most vulnerable of grasses and normally the very first to show symptoms.

As disease pressure increases bentgrasses can be affected. Recovery of bentgrass is faster than with annual meadow-grass.

Cool, damp weather with persistent drizzle or fog or cool/mild periods with dew formation favours *Microdochium* patch activity. A lush sward is considerably more vulnerable to disease activity, as is shaded turf and environments where air movement is restricted.

ITM Control of *Microdochium* patch disease

2. Anthracnose (*Collectotrichum graminicola*)

This is a potentially debilitating disease of putting green turf. It would be quite rare to find activity on grasses other than annual meadow-grass. Greens can be destroyed in a short period of time if disease pressure is high.

It expresses itself in two forms: basal rot anthracnose and foliar anthracnose (foliar blight).

- Anthracnose foliar blight of annual meadow-grass is generally favoured by hot, dry conditions. Symptoms include a yellowing to reddish brown discoloration of leaves and a general thinning of the turf.
- Anthracnose basal rot symptoms can be observed year-round, often alongside foliar blight symptoms. On annual meadow-grass basal rot is most severe in cool, cloudy weather. Basal rot occurs when the crown tissues become infected and scattered plants or small patches of plants turn yellow and die. Close examination of the infected stem base reveals a water-soaked black rot of the crown tissue.

Symptoms of both forms are highly variable, appearing yellow to orange in colour and in an irregular pattern.

As it is a stress disease, extremes of moisture favour activity, as do shade, profile compaction, low heights of cut and low nitrogen. Certain ecotypes together with shallow rooted annual meadow-grass can be particularly prone to this disease.

ITM Control of Anthracnose disease



3. Take-all patch (*Gaeumannomyces graminis*)

This is one of the most serious diseases of GB & I due to its potentially destructive nature. Activity can occur in new and older greens.

Initial symptoms of this root and crown disease are characterised by slightly depressed patches, often bronze in colour. The outline is sometimes slightly irregular but generally

Take-all patch disease affecting the bentgrass element of a mixed sward leaving the annual meadow-grass present in the middle of the affected area



circular, while horseshoe shaped crescents can be found. Fresh activity is quite often indicated by a reddish golden edge. Initial patches may be a few centimetres in diameter before reaching up to 30cm quite quickly. Reactivity can occur outwardly from the same patches over the course of a season and from season to season. Patches may coalesce. Dark brown to black fungal growth may be present on the stem bases, crowns and roots of the dead turf.

All bentgrasses are susceptible.

Larger patches tend to be found amongst creeping bentgrass. Some cultivars of creeping bentgrass are more tolerant but annual meadow-grass can be affected too, particularly where pH is altered by alkaline materials.

Infection occurs during the cooler and wetter periods of the spring, however symptoms are displayed through the summer into the autumn when temperatures are between 13°C and 24°C. Primarily a disease of new greens, but activity can be ongoing in rootzones of neutral to alkaline pH or where the irrigation water or sand topdressing are alkaline.

[ITM Control of Take-all patch disease](#)

4. Fairy rings

The disease may be caused by any one of 60 species of fungus. Grasses are not primarily attacked, rather the rings live off organic matter in the soil profile. They can be present year-round but they are more evident during summer. Fairy rings are conveniently identified as Type 1, Type 2 or Type 3.

- **Type 1.** These appear as a ring of dead or partly dead and stressed turf bordered by greener rings of stimulated grass growth on the inner and outer edges. The dead zone is due to accumulation of dense amounts of fungal mycelium that make the soil water repellent. The dead zone has a characteristic musty smell and mushrooms may also be present in the dead zone. Rings normally start off as Type 2 green fairy rings. The outer green ring is caused by nitrogen release upon breakdown of organic matter by the fungus.
- **Type 2.** The most common type of fairy ring is seen as green stimulated growth that grows faster than the surrounding turf. They detract markedly from the turf appearance and may upset ball roll where growth is stronger in warmer periods. Sometimes thatch randomly collapses to create a surface depression. Rings can be of different sizes and intensity, reaching up to many feet in diameter.
- **Type 3.** The rings are formed by the fruiting bodies (toadstools or puffballs) of the fungus. They generally appear in the early autumn.



The factors that favour Fairy ring diseases are not fully understood despite years of research. Moisture stress and fluctuating wet and dry cycles of weather/irrigation favour activity, as does higher organic matter content of profiles. During hotter and drier periods Type 2 rings can progress to Type 1.

[ITM Control of Fairy ring](#)

5. Dollar spot (*Clarireedia homoeocarpa*)

The incidence of Dollar spot is increasing, particularly in southern localities with hotter and drier environments. This disease can be very damaging, particularly as it occurs during the main playing season.

Spots of bleached turf appear quite rapidly. The spots appear as sunken areas that may coalesce to give large areas of damage.

Symptoms occur in a temperature range of between 16°C to 32°C. Extended periods of leaf wetness are also required for activity. Risk is greater with increasing relative humidity, temperature and duration of guttation dew.

Annual meadow-grass and creeping bentgrass are the main grasses affected but it can be particularly damaging to fescues in certain circumstances too.

[ITM Control of Dollar spot](#)



Dollar spot turfgrass disease
shown here on a shaded green