

Turf Solutions

Turf Disease & Maintenance

Fusarium Patch (*Microdochium nivale*)

This disease normally is most active during late autumn and early spring, although now days can be seen at any time of the year. Cool humid weather, high nitrogen fertility, thatchy turf, poorly drained soil and excess surface moisture can encourage the disease.

The main symptom is rapidly developing circular patches of 25-50mm diameter. Leaves become brown and mushy. Sometimes pink or white cobweb-like fungal threads can be seen in early morning.

To control Fusarium Patch – promote good turf management. The aim is to promote healthy and strong growth. Fescue and Bent grasses are more resistant to the disease; Annual meadow grass dominated swards are most susceptible. Moisture control to avoid humid surface conditions will do much to prevent disease attack. Regular and varied aeration will help to reduce excess surface and rootzone moisture. Keep applications of high nitrogen fertilizers to a minimum during susceptible periods, although additional potash applications may help to strengthen the grass plants. Reducing water holding thatch is also beneficial. The return of clippings provides a substrate for disease development, so always catch and remove the grass. Daconil Turf and Heritage fungicides are effective against this disease.

White (Grey) Snow Mould (*Typhula incarnata*)

Strictly a cold weather disease, White Snow Mould appears as a fluffy white/grey or pink residue caused by the *Typhula* fungi. The fungi spend the warmer months as sclerotia embedded in infected grass blades and in the turf canopy. Sclerotia are very small black to orange structures that can survive hot, dry conditions. Heavy moisture and near-freezing temperatures trigger germination of sclerotia and infection of grass plants. A situation that often produces these key conditions is a deep snow or heavy mulch covering wet turfgrass before the ground has frozen. It invariably seems to follow a retreating snow line. White Snow Mould activity will be slowed when the snow cover is gone due to winter thaws, but the activity will resume every time it snows, regardless of whether it is a light flurry or heavier snow. Injury to the turf is aggravated when the snow is compacted by walking, etc.

Red Thread (*Laetisaria fuciformis*)

This can occur anytime of the year, in shady, poorly aerated, compacted soils and a lack of nitrogen. Particularly summer and autumn under warm moist conditions. The main symptoms are irregular patches of light brown or bleached leaves covered with distinctive 'red threads'. Pink Patch lacks the characteristic 'red threads'. Instead leaves may become coated with pink mycelial growth. Whilst Red Thread may occur alone, it often occurs as a disease complex with Pink Patch. Severe outbreaks may kill the grass but generally affected turf will recover adequately.



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Dollar Spot (*Sclerotinia homoeocarpa*)

Becoming increasingly common, this disease occurs mid-spring to early autumn when an extended period of leaf wetness will encourage the disease. Warm day temperatures and cool nights add to susceptibility. Most likely when nitrogen fertility is low and growth is poor. The fescue varieties are particularly susceptible to attack, particularly slender creeping red fescue. Also those fescues found in sea-washed turf.

The main symptoms are numerous small (no more than 50mm) bleached spots which may coalesce to form larger, irregular patches. Infected leaves appear water-soaked at first, then bleached. Leaf lesions have a characteristically bleached white centre with a reddish-brown border. White 'cotton wool' mycelium may be noted in early morning. Recovery is usually rapid, as roots are not affected.

Maintaining adequate fertility with a balanced nutritional program is often the easiest method of preventing attacks of Dollar Spot. Fungicides such as Daconil Turf will give good control of Dollar Spot.

Thatch Fungus (*Basidiomycete*)

All turfed areas can be susceptible to excessive thatch. Turf that has excess thatch levels can be susceptible to Thatch fungus (although it can also occur when thatch levels are not excess). Symptoms can occur throughout the year. Excessive thatch levels are encouraged by too much fertiliser, soil compaction, minimal scarification etc. Circular patches up to 50mm in diameter can form where the surface of the green sinks due to decomposition of the thatch layer. Sometimes turf in the affected areas undergoes a colour change to a darker green or yellow. The affected thatch may also change colour, to orange, whitish or black. White mycelium may also be visible in Thatch.

Physical causes of thatching may be alleviated by improving water movement through the rootzone. Increased aeration treatments can help to control/reduce thatch. Scarification machines such as the Graden can quickly remove excess fibre. Recent trials at the STRI with Heritage fungicide and wetting agent have been successful in controlling Fairy Ring, which is the same fungus as thatch fungus. Wetting agents. The use of a wetting agent program with Scotts H2Pro will help to prevent attacks.

Damping-Off (*caused by a number of fungi including Fusarium*)

Also known as Seedling Disease, Damping-off affects mainly bents and fescues. Perennial ryegrass is seldom susceptible. Cold, wet conditions in early spring and late autumn favour attacks, although hot humid conditions can also cause outbreaks. Weak seedling turf, heavy soil, low fertility, uneven sowings and excessive seed rates can also encourage attacks. No dedicated curative fungicide treatments are available, although preventative seed treatments are.

Take-All Patch (*Gaeumannomyces graminis*)

Take-all Patch normally occurs mid-spring, late summer to early autumn. Conditions which favour the disease include sterile soil conditions (such as newly constructed sand greens), poor aeration, and high alkalinity.



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Patches of bronzed *Agrostis* up to 30cm diameter with centres colonised by fescues, *Poa annua* or broad-leaved weeds are characteristic. The centres may be slightly sunken. Turf takes a long time to recover, and at present there is no fungicide approved for control of this disease. Consequently, all efforts must be directed at *preventing* outbreaks of Take-all. Firstly, recognise the situation in which Take-all Patch is likely to occur. Avoid applying lime or similar products unless it is absolutely necessary. Ascertain if the water supply has high lime content. Apply fertilizers containing iron and/or ammonium sulphate to acidify the turf surface. Maintain good turf vigour by maintaining an adequate supply of other nutrients. Ensure the turf is free-draining by regular aeration. Heritage turf fungicide now has label approval for Take All Patch control.

Slime Mould (*Myxomycetes*)

This does not cause serious turf damage although can reduce photosynthesis and affect ball roll. It normally occurs mid autumn to mid spring. Favourable conditions are cool, wet weather which promotes fruiting body formation. They quickly disappear in dry weather. It is more common in thatchy turf. The main symptom is masses of pinhead-sized, rounded fruiting bodies suddenly appearing on leaves during cool, humid conditions. Fruiting bodies can be of various colours, but are most commonly grey, purplish-brown or white. They are easily rubbed off by fingers.

Where there are slight infestations only, control measures are not needed. Heavy infestations may be removed by mowing.

Fungicides are not normally recommended, but applications of fertilizer containing iron sulphate would probably limit the spread of slime moulds.

Fairy Ring

The term 'fairy ring' is used to describe a number of turf grass diseases where soil-borne fungi cause certain symptoms to develop on the surface of the sward. Fairy Rings are caused by the activity of many fungi classified as basidiomycetes.

Not all basidiomycete fungi cause Fairy Ring but all Fairy Rings are caused by basidiomycete fungi! Dry patch symptoms on fine turf areas are also thought to be associated with basidiomycete fungi.

Each of the individual fungi grow through the rootzone, feeding off the organic material as it increases in size. The effects seen on the turf surface are roughly correlated with the amount of fungal mycelium within the rootzone. Since the fungal mycelium is made up of compounds that naturally repel water (in the same way that our fingernails do), the more mycelium that is present, the more water that can be repelled by it. Therefore, the larger the amount of fungal mycelium, the more severe or noticeable the effect on the turf.

Turf pathologists classify Fairy Rings in to four types: Type 1, Type 2, Type 3 and superficial Fairy Rings (or thatch fungi). Within each of these four groups there may be many individual fungi that cause fairy ring development, but within each group the symptoms that these fungi cause will be very similar.

Recent research from STRI has shown that Scotts Heritage fungicide was effective at controlling Fairy Ring disease when used with wetting agent and applied after aeration.



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