



## What is fusarium patch?

Fusarium patch is the most common disease on UK golf courses; a severe attack can leave disfiguring scars that will affect the playing quality of putting surfaces.

Fusarium is a fungal infection of turf caused by the fungus *Microdochium nivale*. This micro-organism is always present in soil but survives as dormant spores or mycelium until environmental conditions encourage it to bloom and become pathogenic to turfgrasses. Annual meadow-grass (*Poa annua*) is most susceptible to this disease, though it will attack other species, notably bentgrasses (*Agrostis* spp.).



Active fusarium patch

## What are the symptoms?

The initial symptoms of fusarium patch are seen as small (up to 50 mm diameter) orange/brown spots which, under favourable conditions, may rapidly increase in size, coalesce and produce large irregular scars. As the patches increase in size, the central area becomes paler in colour and may become slimy to the touch due to the release of its spores. The outer margin of the patches remains dark brown while the disease is active. In contrast, inactive disease appears as a pale straw colour, is dry to the touch and has no associated fungal mycelium. If the disease is allowed to develop sufficiently so that the turf is severely damaged, disfiguring scars are formed which will only heal slowly, particularly during the winter months.



Remaining scars

## Conditions that favour fusarium patch disease

- Humid atmosphere and/or moist turf surface.
- A rise in turf/soil pH.
- Excessive nitrogen fertility.
- Mis-timing of nitrogen fertiliser application.
- Turf that contains a high proportion of susceptible grass.

## Preventing fusarium patch disease

- Manage the environment to reduce moisture at the turf surface.
- Avoid materials that will cause a rapid rise in pH.
- Avoid excessive nitrogen fertiliser.
- Ensure fertiliser is applied at the right time.
- Encourage less susceptible grasses.



## Managing moisture

- Improve turf drainage.
- Control thatch and compaction.
- Reduce shade factors.
- Avoid smothering turf with top dressing at times of high risk of disease incidence.

## Managing turf/soil pH

- Be aware of the lime content of top dressing.
- Check your irrigation water supply for lime content.
- Use acidifying or neutral pH fertilisers.
- Take great care if adjusting over-acidity to avoid a rapid rise in pH.

## Managing turf nutrition

- Avoid excessive nitrogen fertiliser application at all times.
- Prevent the promotion of lush growth at times of high risk of disease incidence.
- Do not neglect the support of turf vigour during late season when growth remains good, particularly on meadow-grass dominated greens where sick-looking, underfed turf will be prone to disease attack.

Extend these principles to green surrounds as we are seeing more disease developing in these areas than on greens themselves. This is due, in part, to the greater humidity within a taller stand of grass but also because these areas have received less maintenance over the years and tend to suffer from greater thatch and compaction problems.

## Chemical control

As a last resort, but before active disease causes severe scarring, fungicides can be employed to check fusarium patch disease. Always follow label recommendations and strictly adhere to all relevant legislation when using pesticides.

## The future of chemical control

Regardless of what will happen in the future with pesticide legislation, it is important to overcome the reliance (by some) on pesticide application as this is simply unsustainable. Therefore, what must be reinforced is the need to adopt sensible management strategies that are designed to promote strong, healthy turf that is more resistant to pest/disease attack. By doing this, you will be prepared for any changes in future pesticide legislation as well as any Climate Change we may experience.