



· Microdochium patch

Microdochium nivale

The fungus *Microdochium nivale* causes disease in most cool season turfgrasses but especially in annual bluegrass/meadowgrass (*Poa annua*) and creeping bentgrass (*Agrostis stolonifera*). The turf grass disease resulting from *Microdochium* covers a range of symptoms and has been referred to as:

- ✓ Microdochium patch
- ✓ Fusarium patch
- ✓ Pink snow mold

Microdochium patch is one of the most important diseases of turfgrass in temperate zones such as the British Isles and NW Europe due to the wet and mild conditions that can persist in these regions throughout the year. Most disease outbreaks occur between October and May when turf growth has slowed or become dormant. The most important climatic factors responsible for disease outbreaks include mild temperatures and wet conditions caused by light rain, high relative humidity, fog, and when heavy snow falls on unfrozen ground. Disease is most severe when snow falls on unfrozen turf, however, activity can occur without snow cover during cool (less than 15°C) wet weather.

Without snow

Without snow the patches appear as small orange-brown water-soaked spots (<5cm in diameter) which change colour to reddish brown and light gray or tan. The outer perimeter of the patch can develop a gray black margin. The spots will grow larger usually becoming 20cm in diameter.

Under snow

Under snow or in very wet conditions a layer of white fungal mycelia (fuzz) can develop. When the snow melts, patches appear bleached white or tan and the perimeters turn pink.

The most significant turf environmental factors encouraging development of pink snow mold and *Microdochium* patch are:

- ✓ Excessive foliar growth
- ✓ Thatch build-up
- ✓ Restricted air movement,
- ✓ Poor drainage,
- ✓ Alkaline rootzone
- ✓ Excessive pre-winter Nitrogen application
- ✓ Low levels of potassium,
- ✓ Low plant sugar levels
- ✓ Heavy traffic

Addressing these issues can contribute to disease control.

Managing and controlling Microdochium

Microdochium control can comprise 3 phases:

1. Preventative

Before favourable climatic conditions and disease symptoms arise, use systemic fungicides to minimise *Microdochium* infection. Note that systemic products need the grass to be actively growing and soil temperatures should be high enough for treatment to be effective.

Maxstim for Sports Professionals and **Cynosa** biostimulants will be effective in priming the turfgrass for future *Microdochium* activity. This enhanced tolerance to *Microdochium* infection results from priming of the plant defence systems, stimulation of elevated sugar levels, Silicon induced strengthening of the plant leaf surfaces preventing fungal infection and stimulation of a more active and disease resistance sward

2. Curative

When active infection is present, contact fungicides should be used to interrupt and eliminate the infection (contact fungicides can be used in cooler conditions) Biostimulants such as **Maxstim for Sports Professionals** and **Cynosa** are not fungicides so should not be used to control an active infection.

3. Recovery

Once the soil temperatures are high enough to give consistent turf growth, renovations can start to re-establish turf surfaces. **Maxstim for Sports Professionals** and **Cynosa** can play a significant role in this recovery programme by stimulating turf root and shoot growth and by helping reduce the risk of re-infection.

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Note that fungicide use is threatened by development of resistance in *Microdochium nivale* to some active ingredients and by greater environmental regulations. Future disease control efforts are likely to require managing turfgrass systems with fewer inputs. Managing disease while relying on reduced fungicide inputs requires more precise timing of fungicide treatments, targeted to when the pathogen is most active. Biostimulants will contribute significantly to these new disease management programmes by priming turfgrass to resist future infection.



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