DISEASE FACT FILE

groGreen
SUPPLYING RESEARCHED SOLUTIONS

MICRODOCHIUM PATCH

(Microdochium nivale)

Disease Background

Microdochium patch is a fungal disease caused by the fungus Microdochium nivale which affects most cool season grasses, annual meadow grass (Poa annua) being particularly susceptible. Microdochium patch is most prevalent during cool, wet conditions, especially on swards which are weakened by unbalanced nutrition or suffer environmental pressures such as waterlogging, high thatch levels or high pH levels. The severity of the infection will depend upon environmental influences and the susceptibility of the grass plant (stress factors or improved tolerance).

Controlling Microdochium Patch

Historically, Microdochium patch would have been controlled by effective curative fungicides but in recent years chemical legislation has led to the withdrawal of key active ingredients and products, as well as inhibiting the development of new technology within the chemical sector. This has led to turf professionals needing to look at different methods beyond fungicides for disease control and prevention.

These methods include many things that form an integrated turf management programme, one of which is overseeding with more disease tolerant grass species and even the selection of more tolerant varieties.

Disease Tolerance in Grass Breeding

There are significant differences in tolerance to Microdochium between grass species (see graph 1) and individual varieties within a species (see graph 2). Variety selections from the Barenbrug breeding programme are deliberately infected with Microdocium nivale, both in the laboratory climate rooms and in field trials. In addition, Microdochium is also allowed to occur naturally in field trials in order to have a comprehensive picture of a particular variety's tolerance.

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Situations of High Risk

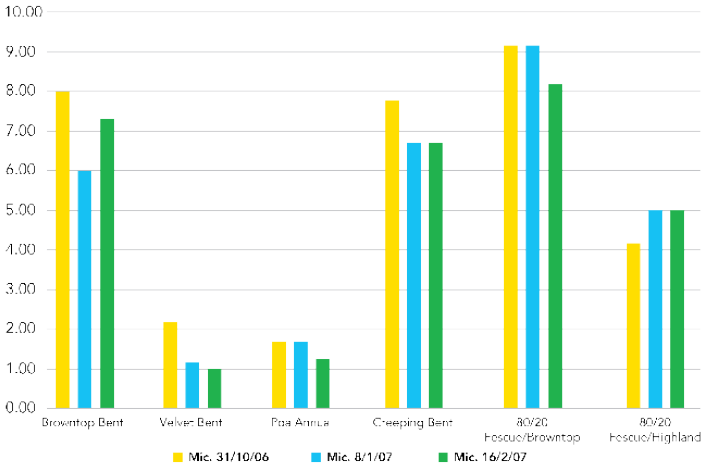
- Very humid conditions
- Annual meadow grass (Poa annua) dominant sward
- Long periods of heavy dew or leaf wetness
- Lack of airflow on turf surface
- Soft grass growth due to high fertilizer inputs
- High pH soil conditions
- High thatch levels
- Heavy top-dressing and brushing during conducive weather conditions.

Reducing Risk of Microdochium Patch – Integrated Turf Management

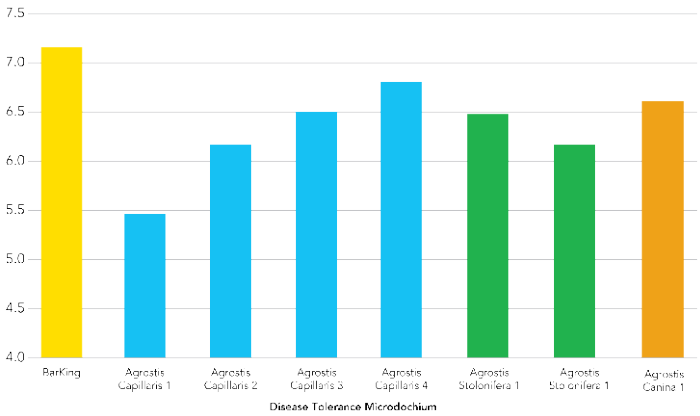
- Regularly remove moisture from the turf surface
- Keep thatch layers to minimal levels
- Ensure adequate sunlight and airfl ow across turf surface
- Avoid excessive fertilizer applications which can promote soft, lush growth and make the plant more susceptible to disease
- Apply acidifying fertiliser such as ammonium sulphate to help lower the pH levels of the turf
- Avoid heavy topdressing applications and brushing during conducive weather conditions.
- Keep mower blades sharp to ensure a clean cut when mowing
- Application of appropriate turf fungicide ahead of periods of high disease pressure
- Over seed with and encourage the growth of more tolerant grass species and varieties (bent, fescue, rye) There can be some big differences between varieties of a single species, so ensure you select the correct variety that can bring higher disease tolerance

Graph 1 shows the different tolerance levels to Microdochium of different greens mixes using different bent grass species. The two best performing mixes are Browntop bent and an 80/20 fescue/browntop mix which shows browntop bent (Agrostis capillaris) is an excellent species to use to help with Microdochium prevention when overseeding greens.

Graph 1 - Average Scores For Microdochium Patch Tolerance Independent STRI Trial 2006-2010



Graph 2 - Microdochium Tolerance - BSPB/ STRI 2016



Graphs 2 shows the scores for Microdochium tolerance in cultivars of browntop, creeping and velvet bent grass (Agrostis spp.). BSPB/STRI trials 2016 G1 trial – Microdochium tolerance. In this trial BarKing (Agrostis capillaris), has the highest level of tolerance.