

Anthracnose

Introduction

Anthracnose (*Colletotrichum graminicola*) is a significant problem on turf, particularly during summer and autumn. Although more severe for golf, Anthracnose can be a problem wherever *Poa annua* predominates. Anthracnose occurs primarily as two forms on turf, namely:

1. *Colletotrichum graminicola* which predominates in New Zealand and primarily attacks the leaf and sheath of the *Poa annua* plant.
2. The basal rot form (*Colletotrichum species*), which to date, is comparatively rare in New Zealand and attacks the crown.

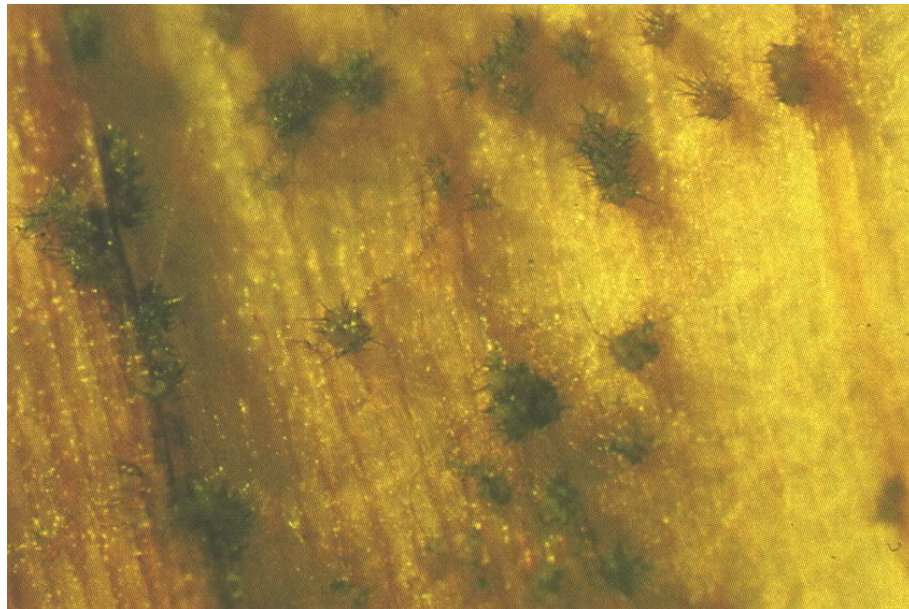


Anthracnose damaging a *Poa annua* dominant surface

Within the CNITMA region Anthracnose can be generally found damaging *Poa annua* throughout the year. However, it is generally during summer – autumn as temperatures reach the mid 20's and above, that the effects are more pronounced and playing quality is affected.

Typically the damage is more severe on the annual rather than the perennial forms of *Poa annua* (*P.annua* var *reptans*) and takes the form of:

1. Leaf turning a golden yellow, before dying. The brick red colour referred to overseas is comparatively rare in New Zealand and is generally only apparent in severe outbreaks. If you have access to a magnifying glass or macroscope, the diagnostic black spiny acervuli as shown below are evident on the leaves or leaf sheaths.



2. Depending on the severity of the disease outbreak, symptoms can range from single tillers to the typical 50-75mm irregular thin/bare patches or in severe outbreaks, large areas being affected.

Managing Anthracnose

With Anthracnose the management emphasis is on maintaining a healthy plant and sufficient growth to enable tiller replacement.

Key management strategies are summarised below.

Fertility

When managing Anthracnose, adequate nitrogen is essential to maintain steady growth and enable the plant to grow away from the disease. However, excessive use of nitrogen and the resulting growth flushes will also encourage Anthracnose. As a guide look to apply small

amounts of nitrogen (0.05- 0.1kg actual nitrogen/100m²) approximately every ten days during the “problem months”.

Sulphur is reported to adversely affect the health of *Poa annua*. Minimising the amount of sulphur (sulphates) used and the potential growth check this can create during the stress periods is desirable (i.e. use organics, nitrates, IBDU, methylene ureas).

In conjunction with nitrogen, *Poa annua* has a high requirement for potassium. Given potassium’s role in stress tolerance and depending on soil and herbage test results, regular applications of potassium, in the order of 1:1 ratio with nitrogen, are recommended.

Depending on soil test levels and pH, anecdotal evidence indicates an application of a plant available form of phosphorus going into summer can be beneficial in reducing the severity of Anthracnose.

Temperature

As temperatures increase into the mid 20’s, the initiation of new tillers declines. Syringing (i.e. 1-2 rotations of the sprinkler so as to just wet the foliage) in the early afternoon is an option to cool the plant and assist in managing this stress. Increased tiller production allows the turf to recover from low levels of die-back caused by Anthracnose.

Aeration

Oxygen is a vital and often an over-looked requirement for quality, healthy turf and is essential for processes such as nutrient uptake. Excessive soil moisture and high summer temperatures will cause soil oxygen levels to fall rapidly, slowing growth and the plant’s ability to recover from Anthracnose.

To maximise aeration within the root zone consider:

1. Thatch management

Thatch and/or layering needs to be taken seriously, due to:

- the moisture extremes it creates
- *Poa annua*’s ability to rapidly form thatch.

Renovation and topdressing programmes need to reflect the rate at which thatch is accumulating.

2. Irrigation

A common misconception with *Poa annua* is that it requires more or lots of water and hence there is a tendency to over-water and saturate the soil profile.

Generally with *Poa annua* the issue is its shallower root depth and hence the requirement for more frequent (daily) and lighter watering (30-50% evapotranspiration rate). This approach will ensure that adequate aeration and moisture are maintained within the root zone.

3 **Compaction**

On soil and/or shallow sand topdressed profiles, compaction is inevitable. Physical treatment needs to target the problem areas (for example, surface vs. deep-seated issues).

Field observations indicate that mini tining during early summer can improve plant health and reduce the severity of Anthracnose problems later in the season.

Grooming

A common source of re-infection is from the acervuli found on dead tissue. Removal of the dead tissue through grooming will help prevent re-infection and can also improve air movement within the plant canopy. Once significant disease is occurring, preventative spraying will likely be required to prevent infection.

Chemicals

Poa annua is sensitive to many chemicals and in particular some herbicides (triclopyr, MSMA, pendimethalin) and fungicides (fenarimol, cyproconazole). Care is required when selecting or applying chemicals that you are not unintentionally stressing the plant and hence its ability to grow away from Anthracnose.

Topdressing

Care is required when topdressing slow growing *Poa annua* such as occurs during the summer and winter stress periods. The abrasion injury can increase susceptibility to Anthracnose. Where conditions are favourable, a preventative application of a contact fungicide can assist in managing this risk.

Overseas sanding programmes and winter conditions have been linked with encouraging the basal rot form of Anthracnose.

Chemical control

Fungicides are best considered as a suppressant or for preventing the occurrence of Anthracnose. Results from fungicide treatments are typically poor or short lived if the growing environment is not conducive to healthy turf growth and recovery.

Fortunately Anthracnose (*C. graminicola*) is controlled by most systemic fungicides. However, for best results ensure your chemical rate is correct, the water rate is adequate (800-1000 L/ha) and in severe/persistent outbreaks, follow-up with a contact fungicide to delay re-infection and control the high spore loading that develops.