

# Fairy Ring & Golden Bracelet

## INTRODUCTION

With the approaching summer, NZ Sports Turf advisors receive many enquiries about the management of Fairy ring and Golden Bracelet (sometimes known as summer spotting). This fact sheet looks at strategies for managing these problems.

## FAIRY RING



*Typical fairy ring symptoms*



*Nitrogen released by fairy ring activity*

## Background

Fairy rings are a common problem on both cotula and starweed greens. The rings are caused by basidiomycete fungus, which feeds on the thatch/organic matter and in the process releases nitrogen, giving rise to the green “rings from spring until autumn. The green ring is the most common form of the disease seen, although very occasionally there is a form of fairy ring that kills the plant.

Unlike other diseases, for the most part, fairy ring is not damaging to cotula or starweed. The main reason that fairy ring creates bare areas on greens, is that the mycelium produced by the fungus, coats the soil thereby making it water repellent. Consequently the water applied doesn't enter the soil in the areas affected by the fairy ring and the turf dies due to moisture stress or heat stress.

Additionally, the action of the basidiomycete fungi “feeding” on the thatch can result in a loss of levels.

## Managing Fairy Rings

Chemical control of fairy rings is generally extremely difficult and unreliable.

The key is to check and ensure that the fairy rings remain moist. Once they dry out, the soil below the ring becomes water repellent and is extremely difficult to rewet.

Strategies for managing fairy rings are summarized below.

### *Preventative control (Spring and Autumn)*

It is important to commence treatment programmes as soon as the rings are observed during spring.

*i. Wetting agent*

Where the green has a history of fairy rings, a preventative wetting agent programme during late spring-summer will assist to provide both a more uniform infiltration and moisture profile within the green(s).

*ii. Potassium carbonate*

Applications of Potassium carbonate have been effective in reducing the severity of this disease and in some instances eliminating it. The programme involves two applications of Potassium carbonate applied 3-4 weeks apart at 12.5kg/green/application during spring. Recently, monthly applications at 4-5kgs/green from spring to summer have also suppressed fairy ring activity.

**Caution:**

- 1. Add potassium carbonate to cold water.**
- 2. Apply in overcast conditions to a wet green, in a high water volume and wash in immediately after application.**

*iii. Sugar*

Applications of sugar at 0.5-1kg/green can assist with suppressing fairy ring. The sugar acts as a food source for other fungi which then compete with and suppress the basidiomycetes fungi. Best results tend to be achieved when using sugar in conjunction with autumn renovation. Ensure the soil profile is moist before using the sugar.

**Caution:**

- 1. Apply in overcast conditions and wash in after application. Sugar can burn cotula.**
- 2. Do not use sugar when *Sclerotinia minor* or brown patch is occurring. Sugar can make these diseases worst.**

*iv. Fungicides*

Fungicides have in the past provided poor and inconsistent control of fairy ring. Providing the profile is moist and you treat early; Amistar (spot treatment) may suppress or control fairy ring.

### *Curative control (summer)*

Once the rings dry out and turn brown, they are extremely difficult to re wet. With time the bare areas get progressively larger. To manage fairy ring at this time of the year, you need to fully re wet the profile to a depth of 60 -75mm.

*There is no point in using Amistar, Potassium carbonate or other control strategies until the "ring" is fully re wetted.*

Re wetting the water repellent fairy rings will involve:

- Spike 200-250mm either side of the ring to a depth of 25mm (approx). Don't go too deep as the water will bypass the cotula or starweed's rootzone.
- Hand water the affected (spiked) area.
- Dissolve a wetting agent (approx 25-50mls/10L watering can) and in overcast conditions apply this or a granular wetting agent to the fairy ring. Wash in immediately with hand watering, to the point that ponding is just observed.  
**Note:** A penetrant type wetting agent such as Breakthru Gold or Aqueduct usually provides better results rewetting a profile once it has become water repellent.
- Over the next 2 - 3 days regularly hand water the patches until they are fully re wetted. In severe situations, you will need to apply a second application of wetting agent, a week later.

Where the rings are persistent, a fungicide treatment at the autumn renovation with a follow up in the spring (before symptoms appear) has been successful in providing control.

## **GOLD BRACELET/SUMMER SPOTTING**

### **Background**

Gold Bracelet, or Summer spotting as it is sometimes known, attacks and damages *Cotula maniototo*, *Cotula dioica* and *colobanthus* and is caused by a slow growing *Rhizoctonia* species. The symptoms of this disease can vary; hence its different names. The disease is generally most severe from late spring until early winter. Typically Gold Bracelet symptoms appear as either:

- Irregular circular patches 300mm+ in diameter in which the leaf turns a bright gold-orange colour.  
OR
- As small gold-orange spots (25-50mm in diameter) arranged as a ring.

The key diagnostic feature is the presence of dark brown sclerotes or spots present on the stolons and sometimes roots.



*Gold bracelet affecting cotula maniototo*



*Diagnostic brown sclerotes on the cotula stolon*

The main factor which encourages Gold bracelet is where the soil profile dries excessively at depth, but the surface 25-30mm remains moist or wet. This is commonly caused by:

- Commencing irrigation too late in spring.
- Poor irrigation technique.
- Waiting too long between waterings & not watering to depth.
- Failure to use a centre sprinkler.

During the initial couple of years following resurfacing (planning) the green can be more susceptible to Golden Bracelet as the cotula is more likely to go into summer dormancy. Under these conditions the cotula growth slows considerably and is therefore more susceptible to disease.

The key to managing this disease involves:

- Maintaining a uniform moisture profile to 75mm (approx).
- Sampling the greens frequently over the summer to monitor the uniformity of the soils moisture status.
- Appropriate and adequate physical treatment to optimise infiltration of water.
- Appropriate irrigation technique (refer to Cotula manual for more information on irrigation).
- Once a uniform moisture profile is re established, applications of Potassium carbonate can assist to reduce the severity of the symptoms.
- On recently resurfaced greens, additional fertiliser maybe required during the first playing season.

Chemical control often produces mixed and unreliable results. However to date, the most reliable control has been achieved with either Amistar or prochloraz (Sportak). When the disease is severe, a fertiliser application soon after spraying can assist with recovery.

As the fungus attacks the “skeleton” of the plant (stolons & roots) full recovery can be very slow and it is common for the disease scars to last for many weeks after treatment while the plant recovers. This should not be confused with a re-infection.

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