BEST MANAGEMENT PRACTICES

FAIRY RING

Overview

Fairy ring is caused by a group of fungi classified as Basidiomycetes which contain wood decaying fungi. They develop in cool and warm season turfgrass. Fairy Ring are soil-borne fungi that colonize soil particles in the root zone as well as thatch layer. There are more than 50 species of fairy ring capable of infesting areas such as sand-based golf course putting greens or tees and native soil areas. It is also commonly found on athletic fields, in lawns and parks.

Environmental Conditions Favoring Disease Development

Fairy ring symptoms become visible in moisture deficient or drought stressed turfgrass under low fertility. Thatch and organic matter serve as a food source for the pathogen where it can colonize the root zone (Figure 1).

Fairy Ring can develop throughout the calendar year depending on geographic location. For example, in warm season turfgrass fairy ring symptoms can develop as early as late winter or early spring. In cool season turfgrass symptoms can often be seen late spring to summer.

Symptoms and Identification

Fairy Ring produces three types of ring symptoms. Type I are the most damaging and result in necrotic or dead rings. Type II rings are dark green in color which is caused by stimulation in turfgrass growth due to microbial breakdown of ammonia produced as the fungi decompose organic matter. Type I and II rings are often associated with hydrophobic soils and localized dry spot. Type III rings (Figure 2) produce mushrooms and typically develop after heavy rainfall.

Management

Cultural

Fairy ring can be difficult to control as there are some species that produce mycelium 2 to 3 ft deep into the soil profile. Reducing turfgrass stress by applying correct rates of fertilizer and using adequate irrigation will strengthen turfgrass competition. Reducing thatch and organic matter can remove the food source needed by the pathogen. Core aerification, topdressing and targeted irrigation can help reduce localized dry areas associated with fairy ring symptomology.

Chemical

Fungicides can be used for preventative fairy ring management. In general, preventative applications should begin once soil temperatures at 2 inches reach 55-60F. Depending upon the season, it may require a **dedicated fungicide program designed preventively** for season-long management.

FMC Professional Solutions offers Fame® and Kalida® fungicides to protect your turfgrass from fairy ring. It is common to apply a wetting agent with fungicides targeting fairy ring to aid in moving the active ingredient down into the soil profile where the pathogen is active. Additionally, it is important to use a high spray volume (2 gal/1000 sq ft) and irrigate with 1/4" of water immediately after application to move fungicide through thatch layer.

Figure 1 *Fairy Ring Mycelial Growth in Root Zone*

Figure 2 *Type III Ring*

References

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Photo(s) Courtesy

Figure 1. North Carolina State University TurfFiles Tina Bond, FMC Technical Service Manager

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