

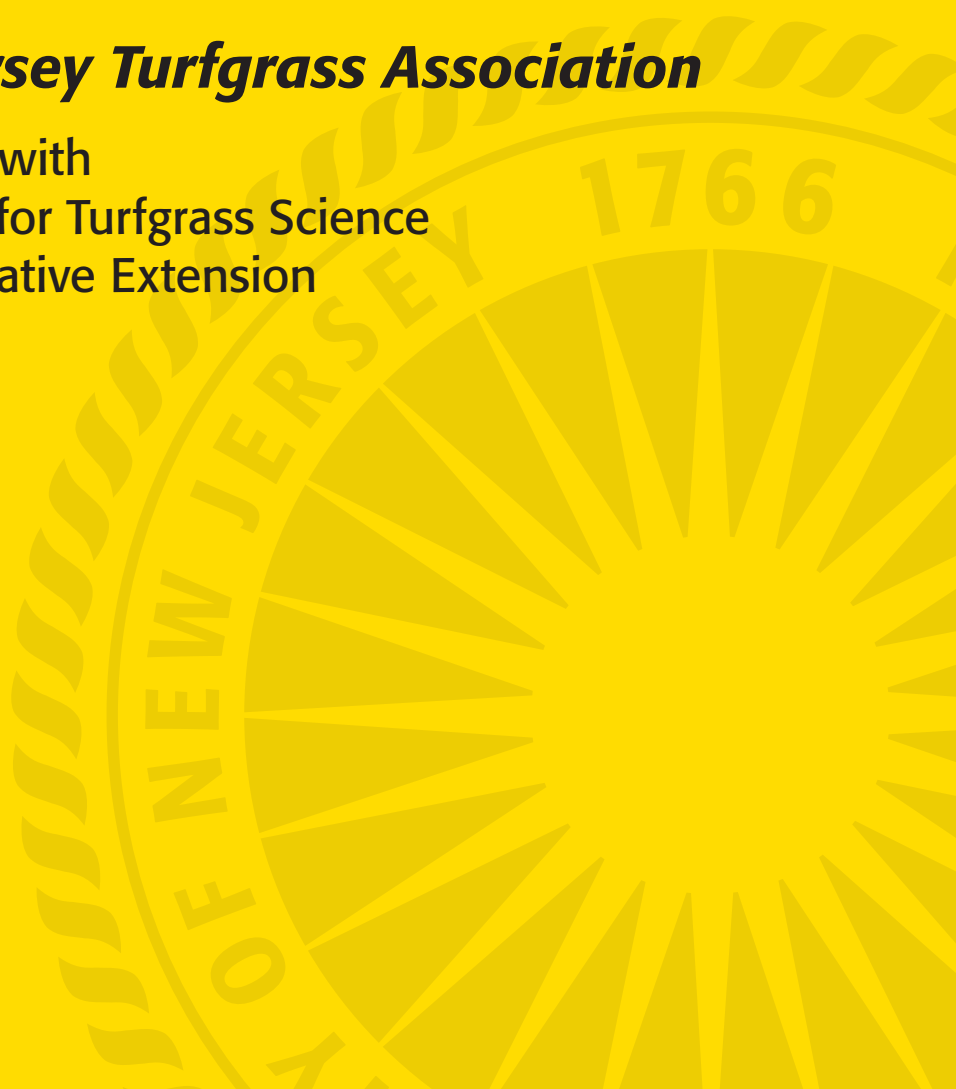
# RUTGERS

New Jersey Agricultural  
Experiment Station

## **2008 Turfgrass Proceedings**

***The New Jersey Turfgrass Association***

In Cooperation with  
Rutgers Center for Turfgrass Science  
Rutgers Cooperative Extension



# **2008 RUTGERS TURFGRASS PROCEEDINGS**

**of the**

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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey in cooperation with the New Jersey Turfgrass Association. The purpose of this document is to provide a forum for the dissemination of information and the exchange of ideas and knowledge. The proceedings provide turfgrass managers, research scientists, extension specialists, and industry personnel with opportunities to communicate with co-workers. Through this forum, these professionals also reach a more general audience, which includes the public.

This publication includes lecture notes of papers presented at the 2008 New Jersey Turfgrass Expo. Publication of these lectures provides a readily avail-

able source of information covering a wide range of topics and includes technical and popular presentations of importance to the turfgrass industry.

This proceedings also includes research papers that contain original research findings and reviews of selected subjects in turfgrass science. These papers are presented primarily to facilitate the timely dissemination of original turfgrass research for use by the turfgrass industry.

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Dr. Ann Brooks Gould, Editor  
Dr. Bruce B. Clarke, Coordinator

# A BRIEF UPDATE ON FAIRY RING OF TURFGRASSES

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Fairy ring is commonly observed in highly-maintained turf all over the world, and is perhaps the most common disease of turfgrass worldwide. With rare exception, fairy ring-causing basidiomycete fungi do not directly infect turfgrass plants, but the fungal growth and development in the soil rootzone often results in turfgrass injury and the visual appearance of fairy ring symptoms above the soil surface.

## FAIRY RING SYMPTOMS IN TURF

Fairy ring symptoms in turfgrass are grouped into three categories or “types”. Type I symptoms are most severe; dead turf forms in rings (or circles) or arcs, and soil and thatch become hydrophobic or water repellent. Also, toxic levels of ammonium and elevated levels of potassium and sulfur have been observed in the soil rootzone of Type I-affected turf sites. Type II symptoms include rings or arcs of dark green, stimulated, and rapidly growing turf, which are produced as excessive nitrates are released by a combination of fungal growth and soil microbial hyperactivity. Type III symptoms are associated with the visible appearance of mushrooms, “toadstools,” or puffballs within or emerging from the turfgrass canopy. Turfgrass practitioners now have some cultural and chemical strategies available to manage turf affected by fairy ring.

## CULTURAL CONTROL OPTIONS

Several cultural practices can help to prevent and/or minimize the development of fairy ring symptoms in turfgrass. Any unsightly mushrooms (i.e. Type III symptoms) are easy to remove through mowing or other turf grooming operations. Type II fairy ring symptoms are often easy to “mask” by applying nitrogen to the affected area, which results in a darker green turf canopy that blends in to seemingly hide the

ring or arc. Alternatively, iron may be used to facilitate a uniform green color without the excessive turf growth associated with nitrogen use. Often, turfgrass with Type II rings or arcs will begin to wilt and die and progress into Type I symptoms. Irrigation practices, such as heavy irrigation drenches or watering with soil surfactants and other wetting agents, can be used to re-wet the water repellent thatch and soil associated with severe Type I symptoms. Aeration practices (i.e., hollow-tine, needle-tine, spiking, or water injection) should be used in combination with irrigation practices to help re-wet the thatch and soil, disrupt and alleviate water repellent areas, introduce more oxygen into the rootzone, and aid in turf recovery. Also, thatch reduction and removal is often needed, since turf sites with heavy a thatch layer could favor the growth and development of fairy ring-causing fungi.

Soil fumigation or the removal of fairy ring-infested soil is a costly and labor-intensive solution that may or may not be successful, since fairy ring symptoms can often reappear in those areas. In addition to these important cultural practices, several fungicide products are now available for the control of fairy ring in turf.

## CHEMICAL CONTROL OPTIONS

More fungicide products are now labeled for fairy ring control than ever before (Table 1). Refer to the product label for specific application instructions, since many products suggest or recommend the addition use of soil surfactants/wetting agents, post-application irrigation, or multiple applications within a certain time interval. In addition to fungicides, a plant and soil nutrition program is being marketed as a solution to manage fairy ring problems in turf (see Table 1).

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Table 1. Summary of products currently labeled for fairy ring control in turfgrass.

<b>FUNGICIDE COMMON NAME<sup>1</sup></b>	<b>TRADE NAME</b>	<b>SOURCE</b>	<b>PRODUCT LABEL NOTES</b>
azoxystrobin	Heritage 50WG	Syngenta	0.4 oz, 28-day interval, 4 gal water/1000 ft <sup>2</sup>
azoxystrobin	Heritage TL 0.8ME	Syngenta	2 fl oz, 28-day interval, 4 gal water/1000 ft <sup>2</sup>
azoxystrobin + propiconazole	Headway 1.39EC	Syngenta	3 fl oz, 28-day interval, 4 gal water/1000 ft <sup>2</sup>
fluoxtrobin	Disarm 480SC	Arysta LifeScience	0.36 fl oz, 28-day interval
flutolanil	Prostar 70WP	Bayer Environmental Science	preventive: 2.2 oz, 21 to 28 day interval curative: 4.5 oz, 30-day interval
flutolanil + thiophanate-methyl	SysStar 80WDG	Regal Chemical Company	Refer to label for details.
hydrogen dioxide	Zerotol 27L	BioSafe Systems	Refer to label for details.
metconazole	Tourney 50WDG	Valent	Label addition pending.
N-alkyl DBAC	Consan Triple Action 20	Parkway Research	Refer to label for details.
polyoxin-D	Endorse 2.5WP	Cleary	4 oz, 2 to 3 applications, 7-day interval, minimum 2 gal water/1000 ft <sup>2</sup> , include soil surfactant, irrigation 0.05 to 0.1 inch
pyraclostrobin	Insignia 20WG	BASF	0.9 oz, 28-day interval
triadimefon	Bayleton 50WP	Bayer Environmental Science	Refer to label for details.
<b>OTHER PRODUCTS</b>			
Proprietary Plant Nutrient and Soil Products		3 Tier Technologies	Fairy ring program involves 4 to 5 products applied in a 12-week program

<sup>1</sup> List may not include all commercially available products currently used or marketed in the turfgrass industry.



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