

Evaluation of an Inorganic Soil Amendment to Reduce and Manage Fairy Ring Symptoms in Turfgrass

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Objectives:

Evaluate chemical and cultural treatments to manage fairy ring symptoms on fairway turf.

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Project Duration: 3 years

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Fairy ring is an enigma because we do not exactly know how to choose a fungicide for it. Why? Multiple fungi cause this disorder of turf and so location to location the causal organism will vary. Fairy ring are several soilborne fungi of a group called Basidiomycetes. Some produce mushrooms—Agaricales. Some produce puff balls—Lycoperdales. Fairy ring on Chicago golf greens are most always associated with the puffball types. More research is needed, but multiple studies have yielded a couple of important facts on strategies for fairy ring suppression on golf greens in Chicago. Fairy ring development can be sporadic.

Alternatives and fungicides were evaluated to suppress active fairy ring on number 5 fairway, at Biltmore Country Club, in N. Barrington, IL; a northwest Chicago suburb. The fairway is located on an area of clay soil and the playing surface is primarily bentgrass (*Agrostis stolonifera*), but has a level of *Poa annua*, as well.

The turf was mowed 2-3 days weekly to a height of 0.5 inches and fertil-

Number	Treatments and Rate (per 1,000 sq ft)
1	Untreated (Healthy Turf) ...
2	Untreated (Fairy Ring Affected) ...
7	Revolution 6.0 fl oz Wetting agent
10	Aeration
11	Aeration + Renovate Plus 25 lbs
12	Aeration +Renovate Plus 25 lbs + Revolution 6.0 fl oz
13	Aeration +Revolution 6.0 fl oz + Prostar 4.5 oz
14	Aeration + Renovate Plus 25 lbs + Revolution 6.0 fl oz +Prostar 4.5 oz
15	Blue XL w/ Bio-Cat Booster 4.5 fl oz + Huma-MnFe 2.3 fl oz +H2O rx 0.8 fl oz +Root and Groom 1.5 fl oz
16	Prostar 4.5 oz Fungicide
17	HeritageTL 2.0 fl oz Fungicide

Some of the chemical and cultural treatments applied to manage fairy ring symptoms at the Biltmore country Club, N. Barrington, IL.



Fairy ring are several soilborne fungi of a group called Basidiomycetes. Some produce mushrooms—Agaricales. Some produce puff balls—Lycoperdales (shown above).

ized with a total of 2.25 lb. granular and 0.5 lb.liquid N/1,000 ft² during the season. Individual plots were 4 ft x 6 ft and arranged in a randomized complete block design that used 4 replications.

Fairy ring symptoms and puff balls were visible on July 18 when the first and only applications occurred. A total of 17 treatments were used. Granular treatments were carefully spread on individual plots by hand. All liquid treatments were delivered using a CO₂-powered backpack sprayer with 8004 TeeJet flat fan nozzles at 40 psi in water equivalent to 2 gal./1,000 ft².

Immediately following application, all treatments were watered in by hand with 0.1 to 0.2 inches of water. As needed, a Toro ProCore 648 aerifier with needle tines was used. Fairy ring was visually evaluated per plot as percent area affected, number of rings per plot, and color intensity (0-4, with 4 dark green). Normalized Difference Vegetation Index (NDVI) was taken using 2 subsamples per plot with the handheld Field Scout TCM 500 (Spectrum Technologies, Plainfield, IL).

Visual quality was rated (1-9

scale, where 1 = entire plot area brown or dead; 6 = minimum acceptable color and quality for a putting green in summer; and 9 = optimum greenness, texture and density) to monitor for acceptable quality and quantify any phytotoxicity. On July 27, soil samples were taken using a 0.75-inch diameter probe to a 2-inch depth. The upper verdure and thatch of each core was discarded.

Summary Points

- Fairway flooding on July 23 caused an aggressive outbreak of type II fairy ring with puff balls to suddenly end. Redevelopment did not occur.
- At study start on July 18, range of a type II fairy ring averaged from 6% to 20% across treatment plots.
- On one date, August 4, certain treatments reduced brown patch.
- No statistical differences existed on any date for visual quality and NDVI. Plant health data did show treatments were safe as no phytotoxicity occurred.
- Across all soil parameters tested 9 days after treatment, only nitrate N showed differences among treatments and ammonium N showed similar trends.