

Quantifying the long-term effects of alternative *Microdochium* patch management

Clint Mattox, Alec Kowalewski, Brian McDonald, Emily Braithwaite, and Alyssa Cain
Oregon State University
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Since 2013, over a dozen alternative trials for the suppression of *Microdochium* patch on annual bluegrass putting greens have taken place at the Lewis-Brown Horticulture Farm in Corvallis, OR. Some of the products used to mitigate *Microdochium* patch include sulfur, iron sulfate, horticulture oil, and phosphorous acid. The long-term effects of applying these alternative products are poorly understood.

Specifically, some trials at Oregon State University suggested that frequent sulfur applications may lead to an increased risk of anthracnose in the summer season. Because of the soil acidifying effects, it is possible that iron sulfate applications may also increase the risk of anthracnose. It is also of interest to observe if there is an increase in available phosphorus over time with frequent applications of phosphorous acid. Therefore, a field trial was initiated in September 2018 to quantify these long term effects. In order to mimic real-world conditions and quantify any winter turfgrass damage, replicated winter golfer traffic is being applied to the plots by walking over the area with golf course shoes during the fall and the winter.

Treatments include: (M=1,000 square feet)

- 1) 0.25# S / M + 3.2 oz. Duraphite 12 / M
- 2) 8.5 oz. Civitas Defense / M + 3.2 oz. Duraphite 12 / M applied Sep, Oct, Nov, & Apr
0.25# S / M + 3.2 oz. Duraphite 12 / M applied Dec through Mar
- 3) 8.5 oz. Civitas Defense / M + 3.2 oz. Duraphite 12 / M applied in a four-week rotation with
0.25# S / M + 3.2 oz. Duraphite 12 / M
- 4) 8.5 oz. Civitas Defense / M applied alone in a four-week rotation with
0.25# S / M + 3.2 oz. Duraphite 12 / M
- 5) 0.5# FeSO₄ / M + 3.2oz. Duraphite 12
- 6) 1.0# FeSO₄ / M + 3.2oz. Duraphite 12
- 7) 0.25# S / M
- 8) 3.2oz. Duraphite 12 / M
- 9) Fungicide Control
- 10) Not-treated Control

Treatment number 4 (Civitas Defense applied alone in a four-week rotation with S + Duraphite 12) has been tested for the first time and preliminary results suggest that this treatment does not suppress *Microdochium* patch as well as treatment number 3 (Civitas Defense + Duraphite 12 in a four-week rotation with S + Duraphite 12). Preliminary results suggest that the other treatments are performing as expected.

Soil testing, digital image analysis, and NDVI data analysis will take place at the conclusion of the first phase of the trial (30th of April 2019). Prophylactic fungicide applications for anthracnose will take place on half of the plots beginning in May to begin the quantification of the long-term effects of the treatments on anthracnose severity.