

Effects of Spray Nozzle and Fungicide Mode of Action on Control of Microdochium Patch on an Annual Bluegrass Putting Green in Western Oregon

B.W. McDonald, C.M. Mattox,*
A.R. Kowalewski, and D.K. Mosdell

Many factors influence the efficacy of turfgrass fungicides, including fungicide application rate and intervals between applications, host susceptibility, fungicide resistance, environment, nozzle type, spray volume, fungicide topical mode of action, leaf coverage, and depletion rate (Latin, 2011).

Microdochium patch (*Microdochium nivale*) is a disease that affects turfgrass foliage. Microdochium patch is of major concern in humid, cool regions where annual bluegrass (*Poa annua* L.) turf is often dominant. To date, there is little published research showing results for the influence of nozzle types, fungicide topical mode of action, and spray volumes regarding Microdochium patch control. Therefore, the main objective of this field study was to evaluate the effect on Microdochium patch control from the interaction of nozzle type–spray volume combinations with fungicide topical mode of action.

Effects of Nozzle–Spray Volume Combinations on Spray Coverage

A spray nozzle coverage analysis was conducted using a completely randomized design with four replications. For this experiment, water was applied with four different nozzle–spray volume combinations: XR11004 (1 gal/1000 ft²) and XR11008 (2 gal/1000 ft²) (TeeJet, Glendale, IL) flat fans, which produce medium (226–325 µm) and coarse (326–400 µm) droplets, respectively; and 1/4TTJ04 (1 gal/1000 ft²) and 1/4TTJ08 (2 gal/1000 ft²) (TeeJet, Glendale, IL), which produce extremely coarse (500–650 µm) droplets (TeeJet Technologies, 2008). The water was applied with a CO₂–pressurized backpack sprayer with a 3-nozzle handheld boom at 30 lb/sq in, 20 inches off the ground. Applications took place inside to avoid the effects of wind, and treatments were repeated four times for each nozzle.

Applied Turfgrass Science—Briefs



Core Ideas

- Nozzle-type spray volume and topical activity on Microdochium patch were evaluated.
- At equal spray volumes, TeeJet XR nozzles cover more spray area than 1/4TTJ nozzles.
- Smaller droplets and higher coverage maximize Microdochium patch control.

B.W. McDonald, C.M. Mattox, and A.R. Kowalewski, Oregon State Univ., 4147 ALS Building, Corvallis, OR 97331; D.K. Mosdell, Syngenta Lawn & Garden, 410 Swing Rd., Greensboro, NC 27409. *Corresponding author (mattoxc@oregonstate.edu).

Received 2 Mar. 2016.
Accepted 10 July 2016.

Conversions: For unit conversions relevant to this article, see Table A.

Published in Crop Forage Turfgrass Manage.
Volume 2. doi:10.2134/cftm2016.03.0018

© 2016 American Society of Agronomy
and Crop Science Society of America
5585 Guilford Rd., Madison, WI 53711

This is an open access article distributed under the
CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).