

Plant Pathogen Analysis

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Notes: Plant pathogens were obtained via isolation from infected turfgrasses.

Project summary:

An exploratory examination was established to determine the effects of two Switch Innovation formulations on cultured plant pathogens. Switch Innovation's monosilicic acid (24% MSA) and a beneficial microbe product were applied to the cultured turfgrass pathogens *Curvularia lunata* and *Gaeumannomyces graminis var. graminis* and any effects on colony growth were noted.

Each isolated pathogen was cultured on potato dextrose agar (PDA) plates with the following amendments:

1. Untreated Control
2. 1 mL MSA (24%)
3. 1 mL Microbe
4. 0.5 mL MSA + 0.5 mL Microbe

Curvularia: Plates were cultured for 14 days at 27°C prior to observation. It was noted that the MSA and Microbe treatments fully suppressed the growth of *C. lunata* while the MSA-Microbe combination treatment resulted in colony size reduction of approximately one-third to a half when compared to the untreated control (Figure 1).

Gaeumannomyces: Plates were cultured for 14 days at 27°C prior to observation. Compared to the untreated control it was noted that the MSA treatment had completely suppressed colony growth, while the colonies on the Microbe and MSA-Microbe combination treatments resulted in growth reductions of approximately three-quarters respectively (Figure 2).

Other observations: The addition of MSA altered the abundance and composition of the bacteria and fungi present in the Switch Innovation microbe product. Typically, an overall reduction in microbes was noted.

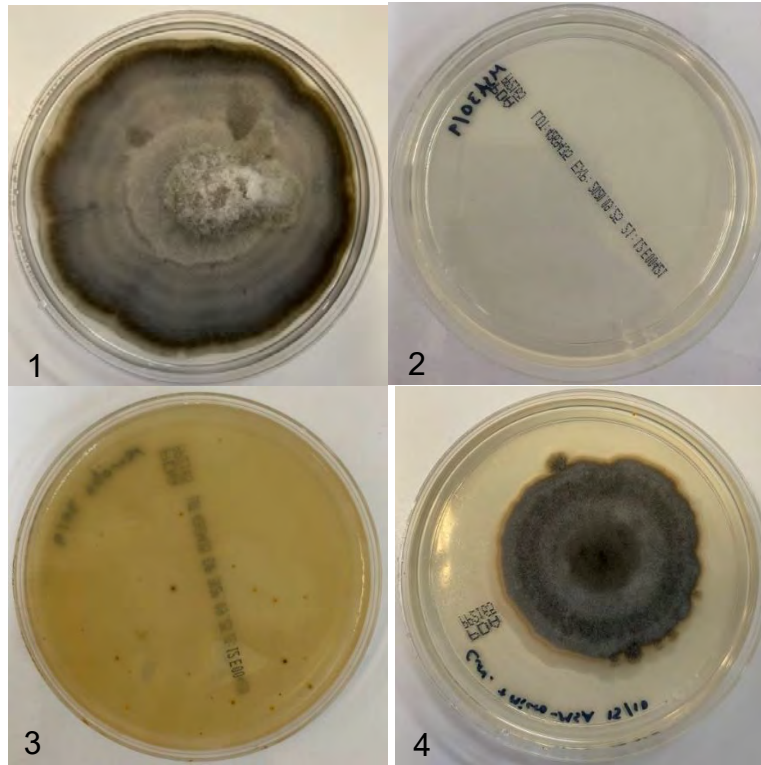


Figure 1: From left to right – Untreated Control (*Curvularia lunata*), MSA, Microbe, MSA + Microbe.

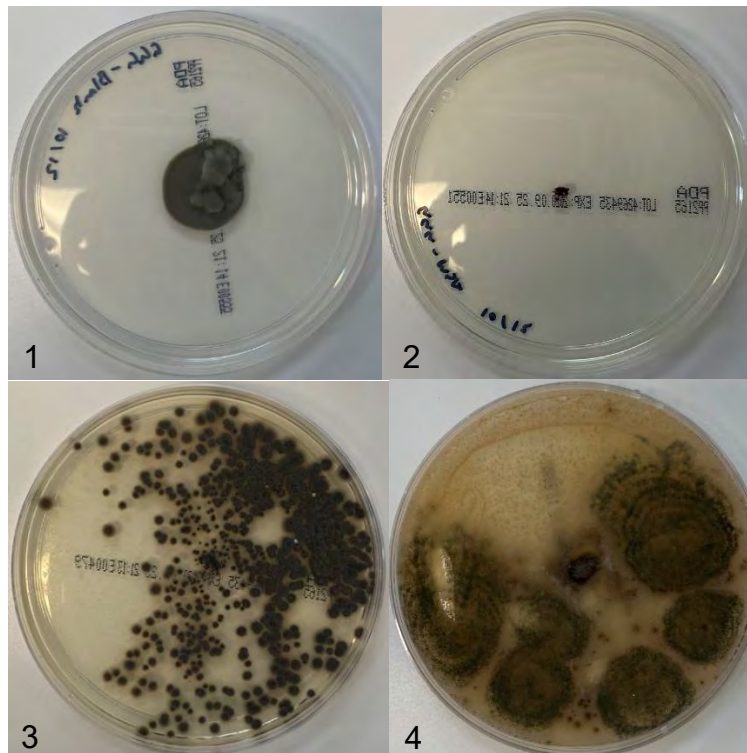


Figure 2: From left to right – Untreated Control (*Gaeumannomyces graminis* var. *graminis*), MSA, Microbe, MSA + Microbe.