The primary objectives were to determine the impact of snow cover on the persistence of iprodione and chlorothalonil on creeping bentgrass, and to determine the minimum concentration of both fungicides required to maintain acceptable Microdochium patch (pink snow mold) suppression in a controlled environment.
RESEARCH SYNOPSIS

Summary points

• The study was conducted for four consecutive winters beginning in 2009 – 2010 at the O.J. Noer Turfgrass Research Facility in Madison, Wis., on a stand of Penncross creeping bentgrass maintained under fairway conditions.

• Fungicide treatments consisted of non-treated control, chlorothalonil, iprodione, and a tank mixture of both chlorothalonil and iprodione.

• The applications were made one day before the first significant snowfall of each year. Within 24 hours of the event, the snow was removed with a shovel from the non-snow plots and placed adjacent onto the snow-covered plots to ensure a minimum snow cover of 4 inches for the duration of the winter.

• Cores from plots were taken to the lab for fungicide analysis on a routine schedule.

• Technical problems with the fungicide assay kits prevented measurement of concentrations of iprodione during the first winter. Chlorothalonil was measured only during the final two winters.

Results

Fungicide persistence in a winter environment is complex and affected by a wide variety of factors. The results from this research demonstrate that rainfall, snowmelt and temperature all potentially play significant roles in depletion of snow mold fungicides during winter months.

• Photodegradation did not appear to have any impact on fungicide persistence during any year of the study.

• Results indicate that snow mold fungicide applied in late fall will likely deplete rapidly in the presence of melting snow or significant rain. However, fungicides applied in late fall will likely persist for months, regardless of snow cover, in the absence of melting snow, rainfall or prolonged periods with temperatures above 32 F.

• Superintendents can use this information—along with factors such as additional expense, club expectations and potential environmental exposure—to make informed decisions about fungicide reapplication during winter months.

Funded by

Published in GCM, August 2015, pages 89-93.