>> **A BROADCAST APPLICATION** of granules containing *Phoma macrostoma* on research demonstration plots in Saskatoon.

Phoma macrostoma: update on the new turfgrass bioherbicide

FOR SEVERAL YEARS, the fungus *Phoma macrostoma* has undergone extensive evaluation by Agriculture & Agri-Food Canada and The Scotts Company to see if a bioherbicide could be developed to control broadleaved weeds in turfgrass. In 2009, the summer issue of *Sports Turf Manager* reported on its discovery as a potential bioherbicide, and some of the research demonstrating its efficacy and crop safety.

Last June (2011), the Pest Management Regulatory Agency approved a conditional registration for *Phoma macrostoma* to be used domestically and commercially for control and/or suppression of weeds such as dandelion, scentless chamomile, English daisy, white clover, black medic, Canada thistle, chickweed, broadleaf plantain, and ragweed. The bioherbicide may be used safely on a variety of turf types such as Kentucky bluegrass, bent grass, perennial or annual ryegrasses, fescues, bromegrasses, timothy, and Bermuda grass.

The fungus is formulated into granules which may be applied to either newly-seeded or well-established lawns from a ready-to-use applicator for spot treatments or by broadcasting the granules as either pre-emergent or post-emergent applications. The product may be applied anytime from spring through fall, but it works best when the mean day time air temperature is hovering above 20°C (15-30°C range) and the soil is relatively moist. The product does not need to be "watered-in" but some precipitation or irrigation (up to 1-3 inches) within 24-72 hours after application would be beneficial particularly if the soil is not friable or moist.

Continuing research has expanded our knowledge of how the bioherbicide will perform in the field. Studies have shown that extreme moisture events around application will reduce the level of weed control attained, especially on sandy soils. The bioherbicide may be applied at the same time as commercial granular fertilizers which may result in a 10-15% enhancement in weed control.

Currently, *Phoma macrostoma* is undergoing scale-up development to be able to efficiently produce commercial quantities, thus a commercial launch is still a few years away. ■

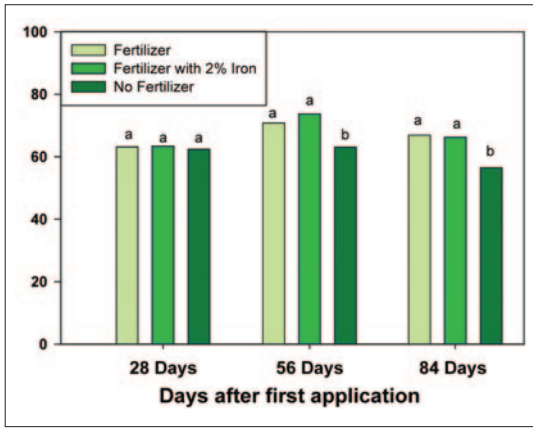

Figure 2.
GRANULES of *Phoma macrostoma* were applied at the 1X rate with or without commercial fertilizer granules at Marysville, Ohio. The use of fertilizers with the bioherbicide improved weed control later in the season. (Different lower case letter show significant difference among treatments using an LSD test at P= 0.05.)

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ADDITIONAL READING

Zhou, L., Bailey, K.L., and Derby, J. 2004. Plant colonization and environmental fate of the biocontrol fungus, *Phoma macrostoma*. Biological Control 20: 634-644.

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Editor's Note: The referenced article in the Summer 2009 issue of *Sports Turf Manager* may be accessed online at www.sportsturfmanager.com/Publications/SportsTurfManager/Archive.