The Effects of Various Fungicides on the Control of Overwintering Diseases 2004-05

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Summary

This trial was developed in order to evaluate various fungicides for their control of overwintering diseases. Plots were laid out and inoculum of both grey and pink snow mould was applied to the individual plots. Treatments were applied on October 25 and November 4, 2005 and an evaluation to determine the effectiveness of the various treatments was conducted on April 7 and May 4, 2006. The winter of 2005-06 was considered to be one of the warmest and driest on record for Olds. Continual snow cover was only a couple of weeks. As a result, disease pressure was very low. Due to this lack of snow there were no treatment differences for any of the products for either of the inoculated diseases.

Introduction

Fine turfgrasses, which are not protected by fungicides, are predisposed to damage caused by snow moulds. On golf greens, where creeping bentgrass (*Agrostis palustris)* or annual bluegrass (*Poa annua*) *are* the predominant species disease damage is a frequent occurrence. Turfgrasses weakened or damaged by snow moulds are extremely slow to recover and are often invaded by opportunistic weedy grass species. As the possibility of chemical resistance to snow moulds increases, new fungicides may be of benefit.

A typical snow mold prevention program consists of three fall applications and a single application in the spring and fungicides with different modes of action are alternated. However, in this trial, the same products were applied either on a single date or on both dates so that the individual fungicides or tank mixes could be evaluated for snow mould control.

Materials and Methods

Plots were located on bentgrass test plots located at the Prairie Turfgrass Research Centre at Olds College (Olds, Alberta, Canada). Plots 1 m x 2 m were arranged in a randomized complete block design with four replications. A 0.5 meter buffer was maintained around each plot. Treatments were applied with a compressed air sprayer on October 25 and November 4, 2005. The sprayer was equipped with TeeJet 8004 nozzles and was calibrated to apply 10.3 litres/100m^2. Two separate trials were conducted and all treatments were inoculated with either pink or grey snow mould.

Disease ratings were conducted on April 7 and May 4, 2006 and were based on percent area symptomatic. Individual pathogen identification was by means of visual assessment. The rating scale for disease severity is based on area covered with the disease and is classed as very low (0-19%), low (20-39%), moderate (40%-59%), high (60%-79%) and very high (>80%).

All treatments were applied on both application dates unless otherwise indicated. The following treatments are listed as amount of product per 100m^2.

Treatment List

1. Untreated control
2. Compass 7.6g + Rovral 26GT 250 ml/1000
3. Compass 3.8 g/100m2 (October 25) followed by Compass 7.6g + Rovral 26GT 250 ml/1000 (November 4)
4. Compass 3.8 g/100m2 + Aliette 200 g/100m2 (tank-mix) (October 25) followed by Compass 7.6g + Rovral 26GT 250 ml/100m2 (November 4)
5. Compass 3.8 g/100m2 (October 25) followed by Compass 7.6g + Rovral 26GT 250ml+ Terraclor 75W 127ml/100m2 (November 4)
6. Compass 3.8g + Rovral 26GT 180 ml/1000 (October 25) followed by Compass 7.6g + Rovral 26GT 250 ml/1000 (November 4)
7. TurfBred Quintozene 180g a.i. (November 4)
8. TurfBred Quintozene 240g a.i. (November 4)
9. TurfBred Quintozene 180g a.i. (October 25 and November 4)
10. TurfBred Quintozene 240g a.i. (October 25 and November 4)

Product Active Ingredient Information

Aliette 80WDG	Systemic	Wettable granular	Fosetyl-al 80%
Compass 50WG	Systemic	Wettable granular	Trifloxystrobin 50%
Rovral Green 26GT	Contact	Liquid	Iprodione 26%
Terraclor 75W	Contact	Wettable powder	Quintozene 75%
TurfBred Quintozene	Contact	Wettable Powder	Quintozene 30%

Status of Registration in Canada

Rovral Green 26GT, Terraclor 75W and Turfbred Quintozene are all registered for use on Typhula blight and Fusarium patch (grey and pink snow mould). Compass is registered for Fusarium patch. Aliette is not registered for either grey or pink snow mould. For more information go to the following website http://www.hc-sc.gc.ca/pmra-arla/english/main/search-e.html

Results

Weather Conditions 2004-05

The weather in Olds during the 2005-06 winter was very warm and dry. A snow cover occurred on February 22 and only lasted for a few days. Snowfall occurred again on March 9 and the cover lasted for only two weeks.

Comparison of Various Treatments

On the first rating date only 3% disease was visible on the untreated control plots in both the grey and pink snow mould trials (tables 1 and 2). At no time, were there any significant differences between the treatments.

Table 1.0 The effect of fungicides on turf inoculated with grey snow mold, 2005-06

Application Timing	Fungicides & Rates	April 7th	May 4th
		—— % Area Diseased ——	
	Untreated control	3%a	1%a
Double application:	Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2)	1%a	1%a
First application:	Compass 50WG (7.6g/100m^2)		
Second application:	Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2)	1%a	1%a
First application:	Compass 50WG(7.6g/100m^2) + Aliette 80WDG(200g/100m^2)		
Second application:	Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2)	3%a	1%a
First application:	Compass 50WG (3.8g/100m^2)		
Second application:	Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2) + Enviro-sol (317.5mls/100m^2)	1%a	1%a
First application:	Compass 50WG (3.8g/100m^2) + Rovral Green 26GT (180mls/100m^2)		
Second application:	Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2)	2%a	1%a
Single Late Treatment:	Enviro-sol (175mls/100m^2)	3%a	1%a
Single Late Treatment:	Enviro-sol (240mls/100m^2)	3%a	1%a
Double application:	Enviro-sol (175mls/100m^2)	2%a	1%a
Double application:	Enviro-sol (240mls/100m^2)	2%a	1%a
	$LSD_{0.05}$ =	n/s	n/s

Table 2.0 The effect of fungicides on turf inoculated with pink snow mould, 2005-06.

Application Timing	Fungicides & Rates	April 7th	May 4th
		—— % Area Diseased ——	
	Untreated control	3.%a	1%a
Double application:	Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2)	3%a	2%a
First application: Second application:	Compass 50WG (7.6g/100m^2) Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2)	1%a	2%a
First application: Second application:	Compass 50WG(7.6g/100m^2) + Aliette 80WDG(200g/100m^2) Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2)	2%a	0%a
First application: Second application:	Compass 50WG (3.8g/100m^2) Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2) + Enviro-sol (317.5mls/100m^2)	2%a	1%a
First application: Second application:	Compass 50WG (3.8g/100m^2) + Rovral Green 26GT (180mls/100m^2) Rovral Green 26GT (250mls/100m^2) + Compass 50WG (7.6g/100m^2)	2%a	1%a
Single Late Treatment:	Enviro-sol (175mls/100m^2)	2%a	1%a
Single Late Treatment:	Enviro-sol (240mls/100m^2)	3%a	1%a
Double application:	Enviro-sol (175mls/100m^2)	3%a	1%a
Double application:	Enviro-sol (240mls/100m^2)	2%a	1%a
	$LSD_{0.05}$ =	n/s	n/s