

Evaluation of Chemical Methods for Control of *Pythium* Blight

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INTRODUCTION

To evaluate chemicals for the control of *Pythium* blight, caused by *Pythium* spp., on perennial ryegrass maintained at 1" mowing height.

EXPERIMENTAL METHODS

Individual plots, 3 ft x 7 ft, were arranged in a randomized complete block design with three replications. Treatments were applied with a CO₂-powered boom sprayer, using XR Teejet 8005 VS nozzles, at 30 psi, in water equivalent to 2 gal per 1000 sq. ft. Identical evaluations were conducted in each of two greenhouses.

Preventative applications were applied on July 2, 1999 in both greenhouses. An application of benomyl was also used to prevent brown patch development. The first greenhouse study was initiated on July 2, 1999. The greenhouse humidity (near 100%) and temperature (100_F daytime, and 70_F, nighttime) were maintained at optimum disease development conditions throughout the trial. *Pythium* mycelium was observed on July 5, at which time curative applications were made. The trial in the first greenhouse ended on July 9, 7 days after preventative applications. Ratings for this trial were taken on July 10.

The second greenhouse was initiated on July 9, at which time optimum conditions for disease development were maintained. However, this study was not inoculated until July 12. The treatments that were labeled for 7 days (Fore and Terrazole), were also applied on July 9. Mycelium of *Pythium* was first detected on July 14, at which time curative applications were made. The second greenhouse study ended on July 17, 15 days after preventative applications. Percent damage ratings from the second greenhouse were obtained July 19. The data obtained were subjected to analysis of variance, and LSD was used to determine significant differences among treatment means.

Following removal of the greenhouse covers, the weather conditions favored additional disease development. Disease severity ratings were taken on July 25 and 30, respectively, which provided evaluations at 23 DAT (days after treatment) and 28 DAT in greenhouse 1, and at 16 DAT and 21 DAT in greenhouse 2.

DISCUSSION

In the 0-7 day greenhouse, Subdue, Banol and several experimental chemicals achieved nearly complete control. However, many additional chemicals, which were evaluated, provided almost equal control. Yet in greenhouse 2, not nearly as many treatments performed that well. Banol and an experimental chemical provided the best disease control. Each of the curative applications did not statistically separate from each other.

The additional ratings taken following the end of the initial study provided important efficacy data. In general, the disease severity was higher in greenhouse 2. Some of the treatments that performed well at the later rating dates include Banol, Chipco Signature, Subdue Maxx, and the experimental AE B066752.

Percent *Pythium* Blight Damage

Trt.#	Treatment	Form.	Rate	Rate Unit	Timing	% Damage 7/10 GH 1		% Damage 7/19 GH 2	
1	-----	-----	----	----	Prev	15.0	BCD	25.0	BCD
2	-----	-----	----	----	Prev	6.7	D	23.3	B-E
3	-----	-----	----	----	Prev	3.3	D	10.0	EFG
4	-----	-----	----	----	Prev	1.7	D	8.3	FG
5	Chipco Signature	80 WDG	4.0	Oz/1000 ft2	Prev	6.7	D	18.3	B-F
6	Subdue	2 EC	2.0	Fl Oz/1000 ft2	Prev	1.7	D	6.7	FG
7	Terrazole	35 WDG	4.25	Oz/1000 ft2	Prev	26.7	BC	31.7	B
8	Heritage	50 WDG	0.4	Oz/1000 ft2	Prev	5.0	D	8.3	FG
9	Banol	6 EC	2.0	Fl Oz/1000 ft2	Prev	1.7	D	3.3	G
10	Banol	6 EC	2.0	Fl Oz/1000 ft2	Cur	3.3	D	6.7	FG
11	AE B066752	-----	4.0	Fl Oz/1000 ft2	Prev	0.0	D	8.3	FG
12	AE B066752	-----	6.0	Fl Oz/1000 ft2	Prev	0.0	D	1.7	G
13	AE B066752	-----	4.0	Fl Oz/1000 ft2	Cur	8.3	D	5.0	FG
14	AE B066752	-----	6.0	Fl Oz/1000 ft2	Cur	10.0	D	11.7	D-G
15	Subdue Maxx	1.1 MC	1.0	Fl Oz/1000 ft2	Cur	15.0	BCD	5.0	FG
16	Heritage	50 WDG	0.4	Oz/1000 ft2	Cur	11.7	CD	15.0	C-G
17	Fore	80 WP	8.0	Oz/1000 ft2	Prev	28.3	B	28.3	BC
18	Check					51.7	A	51.7	A
LSD (P=0.05)						16.09		13.66	

¹ Percent damage means followed by the same letter do not significantly differ, (LSD 0.05).

Percent *Pythium* Blight Damage

Trt.#	Treatment	% Damage 7/25 GH 1		% Damage 7/25 GH 2		% Damage 7/30 GH 1		% Damage 7/30 GH 2	
1	-----	11.7	CD	35.0	CD	20.0	BC	51.7	ABC
2	-----	8.3	CD	38.3	C	15.0	CD	43.3	BCD
3	-----	8.3	CD	23.3	DE	10.0	CD	30.0	DEF
4	-----	0.0	D	11.7	E-H	3.3	D	20.0	FGH
5	Chipco Signature	0.0	D	20.0	EF	3.3	D	21.7	FG
6	Subdue	1.7	D	23.3	DE	5.0	D	38.3	CDE
7	Terrazole	18.3	BC	40.0	BC	21.7	BC	46.7	BC
8	Heritage	5.0	CD	18.3	EFG	10.0	CD	21.7	FG
9	Banol	1.7	D	6.7	FGH	10.0	CD	26.7	EF
10	Banol	0.0	D	1.7	H	5.0	D	5.0	I
11	AE B066752	0.0	D	20.0	EF	5.0	D	31.7	DEF
12	AE B066752	0.0	D	10.0	E-H	8.3	CD	23.3	FG
13	AE B066752	3.3	CD	3.3	H	10.0	CD	6.7	HI
14	AE B066752	10.0	CD	5.0	GH	13.3	CD	10.0	GHI
15	Subdue Maxx	8.3	CD	1.7	H	8.3	CD	10.0	GHI
16	Heritage	6.7	CD	13.3	E-H	11.7	CD	23.3	FG
17	Fore	28.3	AB	63.3	A	31.7	AB	63.3	A
18	Check	43.3	A	53.3	AB	41.7	A	53.3	AB
LSD (P=0.05)		15.35		13.63		14.86		14.30	

¹ Percent damage means followed by the same letter do not significantly differ, (LSD 0.05).