

Evaluation of Chemical Methods for Control of Pythium

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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. Similar evaluations were conducted in each greenhouse. The environment within the greenhouses was maintained at 100% humidity and around 100°F during the day, and above 70°F at night. Humidity was controlled using an overhead mist system.

All Applications were initiated on July 7 due to an early outbreak of Pythium Blight. The seven-day applications were also applied on July 16. All applications were applied again on July 25 and the seven day applications again on July 31. The first green houses were covered on July 25 and inoculated on July 26. The first houses are used to obtain the 7 DAT results, at which time the greenhouses are disassembled. The second houses were covered on July 31 and inoculated on August 1. The pressure was maintained for another 14 day before the plastic was removed. Data was obtained at 7, 14, and 21 DAT and subjected to statistical analysis. Table 1 contains the data from one group of treatments, while table 2 contains the data from the other set of treatments.

DISCUSSION

In review of the data there are some slight differences between DAT and trials. This is the result of how the study is run. Study A and Study B are run in two different pairs of greenhouses and with in each study there are two houses. House #1, in both Study A and B, is run for 7 days after inoculation and the 7 DAT data is obtained from those. House #2 in both studies is run from 7 DAT to 21 DAT, and that data is obtained. Even though all four greenhouses were established at the same time some differences may occur in microenvironment or fungal population from Study A to Study B.

From the data in tables 1 and 2 the best treatments for 7, 14 and 21 days after treatment are presented in table 3. About three chemicals provided significant amount of control at the 21 DAT rating, but this data must be view cautiously. Most of the systemic chemicals on the market today will provide sufficient control for 10-14 days, but any time

longer than that can result in failure. The 21 DAT data is only provided as a guide and is not encouraged to be used if optimum weather is present for Pythium blight development

Table 1. Results from Study A

#	Treatment	Form.	Rate	Rate Unit	Timing	% Damage 7 DAT		% Damage 14 DAT		% Damage 21 DAT	
1	Junction	61 DF	2.0	oz/M	7 Day	55.0	ABC	15.0	B-F	35.0	CD
2	Junction	61 DF	4.0	oz/M	7 Day	43.3	A-D	21.7	ABC	55.0	ABC
3	Junction	61 DF	8.0	oz/M	7 Day	35.0	B-E	20.0	A-D	41.7	BCD
4	Fore	80 WP	8.0	oz/M	7 Day	33.3	C-F	20.0	A-D	55.0	ABC
5	Heritage	50 WG	0.4	oz/M	Prev	6.7	GH	1.7	F	20.0	D
6	Banol	6 EC	2.0	fl oz/M	Prev	3.3	GH	13.3	B-F	36.7	BCD
7	Chipco Sig.	80 WG	4.0	oz/M	Prev	11.7	FGH	3.3	F	13.3	D
8	Subdue Maxx	1 MC	1.0	fl oz/M	Prev	0.0	H	6.7	DEF	31.7	CD
9	Exp. A	XXXX	1.0	fl oz/M	Prev	1.7	H	5.0	EF	26.7	CD
10	Exp. B	XXXX	1.44	oz/M	Prev	20.0	E-H	3.3	F	28.3	CD
11	Compass	50 WG	0.25	oz/M	Prev	61.7	A	30.0	A	78.3	A
12	Exp. C	XXXX	0.24	fl oz/M	Prev	56.7	AB	23.3	AB	65.0	AB
13	Exp. C	XXXX	0.47	fl oz/M	Prev	48.3	ABC	30.0	A	73.3	A
14	Exp. C	XXXX	0.94	fl oz/M	Prev	25.0	D-G	18.3	A-E	51.7	ABC
15	Exp. C	XXXX	1.88	fl oz/M	Prev	35.0	B-E	8.3	C-F	40.0	BCD
16	Exp. C	XXXX	2.83	fl oz/M	Prev	33.3	C-F	1.7	F	35.0	CD
17	Exp. D	XXXX	0.77	fl oz/M	Prev	10.0	GH	3.3	F	30.0	CD
18	Check					56.7	AB	26.7	AB	53.3	ABC
LSD (P=.05)						22.86		14.76		29.94	

Table 2 Results from Study B

#	Treatment	Form.	Rate	Rate Unit	Timing	% Damage 7 DAT		% Damage 14 DAT		% Damage 21 DAT	
1	Exp. A	XXXX	0.5	fl oz/M	Prev	15.0	DEF	6.7	EF	35.0	CD
2	Exp. A	XXXX	1.0	fl oz/M	Prev	6.7	EF	1.7	EF	21.7	DE
3	Exp. A	XXXX	2.0	fl oz/M	Prev	0.0	F	1.7	EF	16.7	DE
4	Subdue Maxx	1 MC	1.0	fl oz/M	Prev	0.0	F	1.7	EF	6.7	E
5	Junction	61 DF	8.0	oz/M	7 Day	21.7	CDE	26.7	BCD	58.3	AB
6	Fore	80 WP	8.0	oz/M	7 Day	20.0	DE	18.3	CDE	36.7	BCD
7	Heritage	50 WG	0.4	oz/M	Prev	1.7	F	0.0	F	8.3	E
8	Banol	6 EC	2.0	fl oz/M	Prev	0.0	F	26.7	BCD	58.3	AB
9	Chipco Sig.	80 WG	4.0	oz/M	Prev	11.7	EF	18.3	CDE	33.3	CDE
10	Compass	50 WG	0.25	oz/M	Prev	41.7	B	36.7	AB	65.0	A
11	Exp. C	XXXX	0.94	fl oz/M	Prev	41.7	B	31.7	ABC	63.3	A
12	Exp. D	XXXX	0.77	fl oz/M	Prev	6.7	EF	0.0	F	8.3	E
13	Exp. B	XXXX	0.72	fl oz/M	Prev	30.0	BCD	18.3	CDE	26.7	DE
14	Exp. B	XXXX	0.96	fl oz/M	Prev	21.7	CDE	15.0	C-F	25.0	DE
15	Exp. B	XXXX	1.44	fl oz/M	Prev	15.0	DEF	11.7	DEF	26.7	DE
16	Exp. B	XXXX	1.92	fl oz/M	Prev	5.0	EF	5.0	EF	25.0	DE
17	Terrazole	35 WG	4.25	oz/M	7 Day	71.7	A	41.7	AB	55.0	ABC
18	Check					38.3	BC	48.3	A	65.0	A
LSD (P=.05)						17.78		18.23		22.15	

Means followed by same letter do not significantly differ (P=.05, LSD)

Additionally, it should be noted that Experimental C seems to require sometime to become active within the plant, as in both studies it performed better at the 14 DAT ratings than the 7 DAT ratings. The results also indicate that some of the lettered experimental are performing better then currently available chemistries.

Table 3. Products and Expected Length of Efficacy

7 DAT	14 DAT	21 DAT
Banol Chipco Signature Heritage Subdue Maxx Experimental A Experimental B Experimental D	Banol Chipco Signature Heritage Subdue Maxx Experimental A Experimental B Experimental C Experimental D	Heritage Subdue Maxx Experimental D