

Control of Pythium Blight with Fungicide Treatments

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Fungicides were evaluated at the Valentine Turfgrass Research Center, University Park, PA, on perennial ryegrass, maintained under home lawn/golf course fairway management conditions. Two applications of Prograss, at a rate of 2 lbs. per acre, were applied for *Poa annua* control on 14 and 30 October, 1988. The experimental area was fertilized on 4 and 18 May, 1989, with 0.5 lbs. actual N (NH_4NO_3) per 1000 sq. ft. Tersan 1991 at 2 oz. per 1000 sq. ft. was applied on 23 June to control large brown patch in the experimental area. Individual treatment plots, 3 ft. x 18 ft., were arranged in a randomized complete block design with 3 replications. Fungicides were applied with a CO_2 -powered, boom sprayer using T-jet 8004 nozzles, at 30 psi, in water equivalent to 2 gal. per 1000 sq. ft. Two separate tests were carried out. Fungicide applications were made on 27 June in Test 2. Three days after fungicide applications (30 June), a 3 ft.-wide strip across all treatments was inoculated with a 6-isolate pool of *Pythium aphanidermatum* grown on autoclaved rye grain. Following inoculation, the 3 ft.-wide inoculated strip was covered with PVC pipe-framed, translucent plastic-covered humidity chambers to increase relative humidity and minimize radiational cooling at night. Humidity chambers were equipped with intermittent mist to maintain a saturated atmosphere. Chamber ends were open and a 1-minute mist was applied over 20 min. during daylight hours. At night, chamber ends were closed and no mist was applied. After one week incubation, the chambers were removed and the inoculated areas were visually rated (9 days post-treatment). A second inoculation in test 1 was made 9 days after treatment (6 July), in the manner described above. Chambers were removed and this inoculation was rated 16 days post-treatment (13 July). Fungicides were applied in test 2 on 11 July, inoculation/incubation were carried out 2 days post-treatment (13 July), and inoculation termination/rating were done 9 days post-treatment (20 July). All data were subjected to analysis of variance and Waller-Duncan K-ratio t test. Data from tests 1 and 2 are presented.

In test 1, disease pressure was low in the first inoculation (37% mean blight in non-treated checks), with the result that there was little separation among chemical treatments. By 16 days post-treatment in test 1, only Aliette and Koban + Aliette were providing acceptable levels of disease control. In test 2 at 9 days post-treatment, most of the chemical treatments were giving excellent control of *Pythium* blight, except the low rate of P368 and the individual applications of the reduced-rate mixture components. Disclaimer: These results should not be considered by anyone as an endorsement by The Pennsylvania State University.

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Test 1

Fungicide	Formulation	Rate per 1000 sq ft	Disease severity	
			9 days ¹	16 days ¹
Check			3.7 ² a ³	9.0 a
P368	75W	2.0 oz	1.3 b	9.7 a
Banol	6S	0.6 fl oz	1.2 bc	8.7 ab
Aliette	80W	2.7 oz	1.0 bcd	8.3 abc
Subdue	2E	0.25 fl oz	0.8 bcd	8.8 a
Banol	6S	2.0 fl oz	0.5 bcd	4.7 e
Subdue	2E	2.0 fl oz	0.5 bcd	6.0 de
Subdue	2E	0.25		
+ Banol	6S	0.6 fl oz		
+ Aliette	80W	2.7 oz	0.5 bcd	5.5 e
Aliette	80W	8.0 oz	0.3 cd	2.0 f
Pace	77W	3.5 oz	0.2 d	7.0 cd
P368	75W	4.0 oz	0.2 d	9.0 a
Pace	77W	7.0 oz	0.2 d	7.3 bcd
Koban	30W	2.0 oz		
+ Subdue	2E	2.0 oz	0.2 d	5.5 e
Koban	30W	2.0 oz		
+ Aliette	80W	8.0 oz	0.2 d	2.5 f
Subdue	2E-S	2.0 fl oz	0.2 d	5.5 e

¹ Post-treatment interval

² 0-10 visual rating scale, where 0 = no disease, 1 = 10% of plot area blighted, 10 = complete blighting of all grass in plot; mean of 3 replications.

³ Within columns, means followed by the same letter are not statistically different, using Waller-Duncan K-ratio t test.

Test 2

Fungicide	Formulation	Rate per 1000 sq ft	Disease severity	
			9 days ¹	
Check			8.3 ² a ³	
Banol	6S	0.6 fl oz	3.3 b	
P368	75W	2.0 oz	2.5 bc	
Subdue	2E	0.25 fl oz	2.3 bcd	
Aliette	80W	2.7 oz	1.3 cde	
Banol	6S	2. fl oz	1.2 cde	
Koban	30W	2.0 oz		
+ Subdue	2E	2.0 fl oz	0.8 de	
P368	75W	4.0 oz	0.8 de	
Subdue	2E	0.25 fl oz		
+ Banol	6S	0.6 fl oz		
+ Aliette	80W	2.7 oz	0.7 e	
Subdue	2E	2.0 fl oz	0.7 e	
Subdue	2E-S	2.0 fl oz	0.5 e	
Aliette	80W	8.0 oz	0.5 e	
Koban	30W	2.0 oz		
+ Aliette	80W	8.0 oz	0.3 e	
Pace	77W	3.5 oz	0 e	
Pace	77W	7.0 oz	0 e	

¹ Post-treatment interval

² 0-10 visual rating scale, where 0 = no disease, 1 = 10% of plot area blighted, 10 = complete blighting of all grass in plot; mean of 3 replications.

³ Within columns, means followed by the same letter are not statistically different, using Waller-Duncan K-ratio t test.

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