

CREEPING BENTGRASS (*Agrostis palustris* 'A-1')
Unknown; *Pythium* root dysfunction caused by *Pythium*
volutum suspected

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Preventative control of an unknown root disease of creeping bentgrass putting greens, 2004.

Fungicides were evaluated for their effect on an unknown disease of creeping bentgrass when applied on a late preventative basis. This disease has been widespread across the Southeastern United States since 2002 and is suspected to be *Pythium* root dysfunction caused by *Pythium volutum*. This trial was conducted at Myers Park Country Club in Charlotte, NC on 'A-1' creeping bentgrass maintained under golf course putting green conditions. Mowing was performed 7 times weekly at a height of 0.120 in. with clippings collected, and the site was irrigated to prevent drought stress. Plots were 3.33 ft x 6 ft and were arranged in a randomized complete block with four replications. Fungicides were applied in water equivalent to 2 gal per 1000 sq ft with a CO₂ powered sprayer at 40 psi using TeeJet 8004 nozzles. Irrigation water (1/8") was applied to watered-in (WI) treatments immediately after application; surface application (SA) treatments were not irrigated. All treatments were applied on 21 Apr, 6 May, 20 May, and 2 Jun. Disease severity was evaluated on 27 May, 15 Jul, and 5 Aug, using a 1 to 9 scale (9=most severe, 0=no disease). Data were subjected to analysis of variance and means separation by Waller-Duncan k-ratio t test (k=100).

Disease symptoms first appeared in mid-March during an extended period of warm, dry weather. Disease severity gradually declined following initiation of the experiment on 21 Apr, with symptoms disappearing entirely by early June. Few significant differences were detected among treatments on 27 May. Symptoms of the disease reappeared on July 12, or 40 days after the last fungicide application, again induced by heat and drought stress. At this time, treatment effects were readily evident in the experimental area. Plots treated with Insignia or Insignia + 3336, either as a surface or watered-in application, were nearly free of disease symptoms on 15 Jul. Cyazofamid (WI or SA) and Heritage + 3336 (SA only) provided an intermediate level of control but were not significantly different from the untreated control. As heat and drought stress increased through late July and early August, the disease became progressively more severe. On Aug 5, no treatments were significantly different from the untreated control in disease severity. Certain fungicides appear to have preventative activity against this unknown disease, but this preventative activity did not persist throughout the growing season. Preventative applications may be more effective when made in the fall and early spring, when *P. volutum* appears to be most active.

Table 1. Preventative control of an unknown root disease of creeping bentgrass putting greens, 2004.

Treatment and rate / 1000 sq ft	Spray interval	Application method	Disease severity ^z		
			27 May	15 Jul	5 Aug
1. Signature 80WP 4 oz.....	14 ^y	SA ^x	3.8 ab ^w	6.3 abc	7.5 a-d
2. Signature 80WP 8 oz.....	14	SA	1.8 ab	6.0 abc	4.5 a-e
3. Fore 80WP 8 oz.....	14	SA	3.5 ab	6.8 ab	7.0 a-e
4. Signature 80WP 4 oz + Fore 80WP 8 oz.....	14	SA	2.5 ab	5.8 abc	8.0 ab
5. Signature 80WP 8 oz + Fore 80WP 8 oz.....	14	SA	2.0 ab	8.0 a	8.3 a
6. Subdue Maxx 2ME 1 fl oz.....	14	SA	3.5 ab	5.8 abc	7.0 a-e
7. Banol 6F 4 fl oz.....	14	SA	4.0 ab	7.0 ab	7.8 abc
8. Cyazofamid 400SC 0.9 fl oz.....	14	SA	3.8 ab	2.0 def	4.5 a-e
9. Heritage 50WG 0.4 oz.....	14	SA	3.0 ab	4.5 bcd	4.0 b-e
10. Insignia 20WG 0.9 oz.....	14	SA	3.3 ab	0.3 f	4.5 a-e
11. Cleary 3336 4F 8 fl oz.....	14	SA	4.0 ab	7.3 ab	5.8 a-e
12. Heritage 50WG 0.4 oz + Cleary 3336 4F 8 fl oz.....	14	SA	2.5 ab	3.3 c-f	3.3 e
13. Insignia 20WG 0.9 oz + Cleary 3336 4F 8 fl oz.....	14	SA	3.3 ab	0.0 f	4.8 a-e
14. Terrazole 35WP 4 oz.....	14	WI	5.5 a	7.0 ab	6.5 a-e
15. Subdue Maxx 2ME 1 fl oz.....	14	WI	5.3 a	4.3 bcd	5.5 a-e
16. Banol 6F 4 fl oz.....	14	WI	4.0 ab	5.8 abc	5.0 a-e
17. Cyazofamid 400SC 0.9 fl oz.....	14	WI	3.3 ab	3.3 c-f	8.0 ab
18. Heritage 50WG 0.4 oz.....	14	WI	3.8 ab	6.5 abc	5.8 a-e
19. Insignia 20WG 0.9 oz.....	14	WI	1.0 b	0.5 f	4.0 b-e
20. Cleary 3336 4F 8 fl oz.....	14	WI	4.0 ab	4.0 b-e	3.8 cde
21. Heritage 50WG 0.4 oz + Cleary 3336 4F 8 fl oz.....	14	WI	3.8 ab	4.8 a-d	6.5 a-e
22. Insignia 20WG 0.9 oz + Cleary 3336 4F 8 fl oz.....	14	WI	2.0 ab	0.8 ef	3.5 de
23. Subdue Maxx 2ME 1 fl oz + Cleary 3336 4F 8 fl oz.....	14	WI	3.8 ab	5.8 abc	5.8 a-e
24. Untreated Control.....	--	--	4.0 ab	5.2 a-d	7.4 a-e

^zDisease severity on a 1 to 9 scale, where 9=highest severity and 5=moderate severity.

^yFungicides were applied on 21 Apr, 6 May, 20 May, and 2 Jun.

^xIrrigation water (1/8") was applied to watered-in (WI) treatments immediately after application; surface application (SA) treatments were not irrigated.

^wValues are means of four replicates. Means within columns followed by the same letter are not significantly different according to Waller-Duncan k-ratio t-test (k=100).