CREEPING BENTGRASS (*Agrostis palustris* 'G-6')
Algae; Cyanobacteria

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Curative control of algae invasion in creeping bentgrass, 2003.

Fungicides were evaluated for their effect on algae invasion when applied on a curative basis. This trial was conducted at North Carolina State University Turfgrass Field Lab in Raleigh, NC on 'G-6' creeping bentgrass maintained under golf course putting green conditions. Mowing was performed three times weekly at a height of 0.156 in. with clippings collected, and the site was irrigated to prevent drought stress. Fertilizer was applied as 24-5-11 on 9 Apr (0.5 lb N/1000 sq ft), 18-3-18 on 5 May (0.5 lb N/1000 sq ft), and 18-4-10 on 15 May (0.5 lbN/1000 sq ft). Insect pests were suppressed with Dursban Pro (1.5 oz/1000 sq ft) on 16 May, 27 Jun, and 25 Jul. Canteen wetting agent (6 fl oz/1000 sq ft) was applied on 24 Apr, 12 May, 24 Jun, and 1 Aug for suppression of localized dry spots. Plots were 3.33 ft x 5 ft and were arranged in a randomized complete block with four replications. Fungicides were applied in water equivalent to X gal per 1000 sq ft with a CO_2 powered sprayer at 40 psi using TeeJet 8004 nozzles. All treatments were initiated on 11 Jun and were re-applied at the appropriate intervals as indicated in the table. Percent turf area invaded with algae was assessed on 17 Jun, 30 Jun, 7 Jul, 14 Jul, 28 Jul, and 4 Aug. Data were subjected to analysis of variance and means separation by Waller-Duncan k-ratio t test (k=100).

Algae pressure was severe throughout 2003 due to unusually wet and overcast weather conditions. At initiation of this trial, approximately 15% to 20% of the turf area was invaded by algae, which was uniformly distributed across the experimental area. On 17 Jun, after two applications of 7 day treatments and one application of 14 day treatments, only Fore Rainshield, Pentathlon, Junction, and Medallion provided significant algae suppression compared to the Untreated Control. After 17 Jun, algae invasion declined in the experimental area during weather conditions that were favorable for creeping bentgrass growth. As a result, few significant differences were detected among treatments on 30 Jun and 7 Jul. On 14 Jul, Daconil Ultrex, Fore Rainshield, and Junction provided significant algae suppression compared to the Untreated Control. Only Junction provided significant algae suppression on 28 Jul and 4 Aug. Applications of ZeroTol or Endorse did not reduce algae invasion at any time during this trial. No symptoms of phytotoxicity resulting from fungicide applications were observed.

Treatment and rate / 1000 sq ft	Spray interval (days)	Algae invasion (%) 17 Jun	30 Jun	7 Jul	14 Jul	28 Jul	4 Aug
Daconil Ultrex 82.5WDG 3.2oz	14[z]	14 cd[y]	5 bc	16 ab	6 cde	13 a-d	16 abc
Fore Rainshield 80WP 6oz	14	3 e	2 bc	11 ab	11 bcd	15 abc	19 abc
Pentathlon 75DF 6.4oz	14	6 de	5 bc	13 ab	14 abc	23 a	24 ab
Junction 61DF 2oz	14	7 de	3 bc	9 ab	3 de	6 cd	7 bc
Junction 61DF 4oz	14	2 e	2 c	4 b	0 e	0 d	1 c
ZeroTol 27F 3fl oz	7	41 a	19 a	24 a	24 a	23 ab	25 ab
ZeroTol 27F 6fl oz	7	35 ab	13 abc	23 a	22 a	17 abc	20 ab
ZeroTol 27F 6fl oz	14	38 ab	12 abc	22 a	22 a	11 a-d	14 abc
ZeroTol 27F 12fl oz	14	34 ab	14 ab	22 a	21 a	17 abc	19 abc
Medallion 50WP 0.5oz	14	17 c	4 bc	12 ab	14 abc	10 bcd	15 abc
Endorse 2.5WP 4oz	14	34 ab	4 bc	11 ab	20 ab	10 bcd	11 abc
Untreated Control	--	31 b	11 abc	21 a	23 a	13 a-d	27 a

[z]Fungicides were applied on 11 Jun (all treatments), 18 Jun (7 day treatments), 25 Jun (all treatments), 1 Jul (7 day treatments), 9 Jul (all treatments), 16 Jul (7 day treatments), 24 Jul (all treatments), and 31 Jul (7 day treatments).
[y]Values 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).