

Suppression of *Poa annua* seedheads on bentgrass/annual bluegrass putting greens comparing NB31150 with Embark and Primo/Proxy

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A study was initiated in the spring of 2004 at the Washington State University Golf Course in Pullman, WA to assess the efficacy of a new formulation combination of mefluidide and flurprimidol (NB31150) compared to Embark (mefluidide) alone, Embark plus Ferromec, and the combined treatment of Primo and Proxy. All treatments were applied on 9 April 2004, with repeat applications of Embark alone and Embark plus Ferromec five weeks later (14 May, 2004). The growth regulators were applied with a bicycle wheeled CO₂ pressurized push sprayer. Rate of application was 25 GPA using 11002 flat fan TeeJet spray tips at 40 psi. Turfgrass quality and phytotoxicity ratings were taken on 16 April, 30 April, 21 May, and 4 June 2004. *Poa annua* seedhead suppression was taken on 30 Apr, 20 May, and 4 June 2004. Turfgrass quality was rated visually on a scale of 1 to 9, with 9 = excellent turfgrass quality. Phytotoxicity was rated 0 to 10, with 10 = dead turf. *Poa annua* seedhead suppression was rated on a scale of 0 to 100%, with 100% = no visible seedheads. Digital photo's were taken at each rating date.

Turfgrass quality of NB31150 was not significantly different than the check at any of the rating dates (Table 1), but had higher turfgrass quality than Embark alone 6 and 8 weeks after first treatment (WAFT). Primo/Proxy 6 and 8 WAFT had the highest turfgrass quality.

NB31150 was the least effective at suppressing *Poa annua* seedheads 3 WAFT, 66.7% (Table 2). Seedhead suppression 6 and 8 WAFT with NB31150, Embark alone, and Embark plus Ferromec was low <26%. On the otherhand, Primo/Proxy had a high level of seedhead suppression at each rating date >80%.

NB31150 treatment showed no signs of phytotoxicity at any of the rating dates (Table 3).

Overall, NB31150 performed very similarly to the Embark alone and Embark plus Ferromec treatment. However, it did not provide the high level of seedhead suppression and turfgrass quality as the Primo/Proxy treatment up to 8 WAFT.

Table 1. The effect of growth regulators on the turf quality of a creeping bentgrass/annual bluegrass putting green at the WSUGC, Pullman, WA.

Treatments	App. timing*	Rate (oz or fl oz/M)	4/16/04	4/30/04	5/20/04	6/4/04
			1 WAFT Quality**	3 WAFT Quality	6 WAFT Quality	8 WAFT Quality
NB31150 (mefluidide + flurprimidol)	1	0.13 oz	5.0 a***	5.0 b	5.3 c	5.7 b
Embark T&O +	1	1.0 fl oz +	5.0 a	5.0 b	4.0 d	4.3 c
Embark T&O	2	1.0 fl oz				
Embark T&O + Ferromec AC +	1	1.0 fl oz + 3.0 fl oz +	5.3 a	6.0 a	6.0 b	5.7 b
Embark T&O + Ferromec AC	2	1.0 fl oz + 3.0 fl oz				
Primo + Proxy	1	0.125 fl oz + 5.0 fl oz	5.0 a	4.7 b	7.0 a	7.0 a
CHECK		0	5.0 a	5.0 b	5.0 c	5.0 bc

* Application timing; 1 = 9 April and 2 = 14 May, 2004

**Turfgrass quality rated 1-9; 9 = excellent turfgrass quality

***Numbers within the same column followed by the same letter are not significantly different (LSD $P = 0.05$).

Table 2. The effect of growth regulators on seedhead suppression of a creeping bentgrass/annual bluegrass putting green at the WSUGC, Pullman, WA.

Treatments	App. timing*	Rate (oz or fl oz/M)	4/30/04	5/20/04	6/4/04
			3 WAFT Seedhead suppression** (%)	6 WAFT Seedhead suppression (%)	8 WAFT Seedhead suppression (%)
NB31150 (mefluidide + flurprimidol)	1	0.13 oz	66.7 c	15.0 b	15.0 bc
Embark T&O +	1	1 fl oz +	78.3 b	8.3 bc	23.3 b
Embark T&O	2	1 fl oz			
Embark T&O + Ferromec AC +	1	1 fl oz + 3 fl oz +	80.0 b	8.3 bc	26.7 b
Embark T&O + Ferromec AC	2	1 fl oz + 3 fl oz			
Primo + Proxy	1	0.125 fl oz + 5 fl oz	97.7 a	96.3 a	81.7 a
CHECK		0	0.0 d	0.0 c	0.0 c

*Application timing, 1 = 9 April and 2 = 14 May, 2004

***Poa annua* seedhead suppression rated from 0 to 100%, with 100% = no visible seedheads

***Numbers within the same column followed by the same letter are not significantly different (LSD $P = 0.05$).

Table 3. The effect of growth regulators on phytotoxicity of a creeping bentgrass/annual bluegrass putting green at the WSUGC, Pullman, WA.

Treatments	App. timing*	Rate (oz or fl oz/M)	4/16/04	4/30/04	5/20/04	6/4/04
			1 WAFT Phyto-toxicity**	3 WAFT Phyto-toxicity	6 WAFT Phyto-toxicity	8 WAFT Phyto-toxicity
NB31150 (mefluidide + flurprimidol)	1	0.13 oz	0.0 a	0.0 a	0.0 a	0.0 a
Embark T&O +	1	1.0 fl oz +	0.0 a	0.3 a	1.3 b	1.3 b
Embark T&O	2	1.0 fl oz				
Embark T&O + Ferromec AC +	1	1.0 fl oz + 3.0 fl oz +	0.0 a	0.0 a	0.0 a	0.0 a
Embark T&O + Ferromec AC	2	1.0 fl oz + 3.0 fl oz				
Primo + Proxy	1	0.125 fl oz + 5.0 fl oz	0.0 a	1.3 b	0.0 a	0.0 a
CHECK		0	0.0 a	0.0 a	0.0 a	0.0 a

*Application timing; 1 = 9 April and 2 = 14 May

**Phytotoxicity rated 0 to 10; with 10 = dead turfgrass

***Numbers within the same column followed by the same letter are not significantly different (LSD $P = 0.05$).