

Turfgrass Safety

Trials were conducted to evaluate the turf safety of mesotrione (Tenacity), Velocity tank-mixes on creeping bentgrass, Echelon on tall fescue, and few others in 2008. All injury evaluations herein are expressed as numbers between 1 and 9, where 1=no injury and 9=dead turf.

The 2008 Creeping Bentgrass Safety – Dismiss Trial was treated on July 8 (A) and August 5 (B). Table 1 contains the complete treatment list and results for this trial. Turf injury was evaluated after each application until injury was no longer noticed. This trial was conducted on 'Providence' creeping bentgrass maintained at 0.5 inches.

Turf injury was noticed on all plots treated with Dismiss just 2 DAT-A and again 8 DAT-A, but the turf soon recovered and treated plots did not differ from the untreated by 14 DAT-A, even after the repeat applications. The most injury was observed on plots treated with the highest rate of Dismiss (0.188 LB A/A). Although the injury seen may be tolerable, Sedgehammer treatments never differed from the untreated.

The 2008 Turf Tolerance of Tenacity Applied at Seeding Trial was treated on May 8 (A) and June 24 (B), 2008 on a site that was seeded with a Spartan Grade A seed mixture (40% Kentucky bluegrass, 40% fine fescues, and 20% turf type perennial ryegrass) on May 7, 2008, one day before application timing A. A complete treatment list and results are presented in Table 2. Results are provided as injury (1-9) on the turfgrass stand. Three different formulations of Tenacity, mesotrione, are represented in the trial.

Any turfgrass injury noticed during the trial period seemed only to be on the fine fescue within the turf mixture and only 13 and 16 DAT-B (days after treatment B), when repeat treatments were applied postemergence. There were never any significant differences in turfgrass cover between any of the treatment and, therefore, these evaluations are not presented.

The 2008 Velocity Tank-mix Turfgrass Tolerance Trial was treated on July 21, 2008. The goal of the trial was to apply Velocity in combination with products that are common on golf courses and compare the treatments to Velocity alone, looking for any phytotoxic incompatibilities. The complete treatment list and results are presented in Table 3.

Initially, the tank-mix of Velocity and a wetting agent caused more injury than Velocity alone, however, 22 DAT, the quality of the plots treated with this tank-mix was higher (less injury) than even the untreated plots. This trial will be conducted again in 2009 to further evaluate whether a phytotoxic incompatibility exists between Velocity and wetting agents.

The 2008 Tolerance of Echelon + Urea on Tall Fescue Trial was treated June 18, 2008 on 'Rebel' tall fescue. There was subjective evidence expressed by turf managers in the U.S. that Echelon (sulfentrazone + prodiamine) + Urea was causing injury on tall fescue, so this trial was set-up to investigate those claims. A complete treatment list and results are presented in Table 4.

Six and eight days after treatment, there was some evidence that Echelon + Urea did cause some injury to tall fescue, but it was negligible.

The 2008 Evonik Perennial Ryegrass Tolerance Trial was treated on June 24, 2008. The trial included tank-mixes of Q4 with different surfactants with the goal of finding any phytotoxic incompatibilities between any of them. No injury was noticed within the trial area during the entire summer and, therefore, results are not presented.

Table 1: Creeping Bentgrass Safety – Dismiss Trial – 2008

Treatment	Rate (LB A/A)	July 10 2 DAT-A	July 16 8 DAT-A	July 22 14 DAT-A
		Injury (1-9)		
Dismiss	A 0.125	2 a	2.7 a	1.7
Dismiss	A 0.188	2 a	3.3 a	1.7
Dismiss	A 0.125	2 a	3 a	1.7
Dismiss	B 0.0625			
Dismiss	A 0.125	1.7 a	2.7 a	1.3
Dismiss	B 0.125			
Sedgehammer	A 0.046	1 b	1.3 b	1.3
Untreated		1 b	1 b	1
LSD (p=0.05)		0.43	0.88	NS

† Means followed by same letter do not significantly differ (P=0.05, LSD).
NS indicates not significant.

Table 2: The Turf Tolerance of Tenacity Applied at Seeding Trial – 2008

Turgrass Injury

Trt. No.	Treatment	Rate	App. Time	Jun/26/08 49 DA-A	Jun/30/08 53 DA-A	Jul/7/08 13 DA-B	Jul/10/08 16 DA-B	Jul/16/08 22 DA-B
injury (1-9)*								
1	A12738 (TENACITY)	5 FL OZ/A	A	1.0 a	1.0 a	1.7 bc	1.0 b	1.0 a
	A12738 (TENACITY)	5 FL OZ/A	B					
	ACTIVATOR 90	0.25 % V/V	B					
2	A12738 (TENACITY)	8 FL OZ/A	A	1.0 a	1.0 a	3.0 a	2.3 a	1.0 a
	A12738 (TENACITY)	8 FL OZ/A	B					
	ACTIVATOR 90	0.25 % V/V	B					
3	EXC3937	10 FL OZ/A	A	1.0 a	1.0 a	1.7 bc	1.3 b	1.0 a
	EXC3937	10 FL OZ/A	B					
	ACTIVATOR 90	0.25 % V/V	B					
4	EXC3937	16 FL OZ/A	A	1.0 a	1.0 a	2.3 ab	2.3 a	1.0 a
	EXC3937	16 FL OZ/A	B					
	ACTIVATOR 90	0.25 % V/V	B					
5	A14203	0.15 6 LB A/A	A	1.0 a	1.0 a	2.0 b	1.3 b	1.0 a
	A14203	0.15 6 LB A/A	B					
	ACTIVATOR 90	0.25 % V/V	B					
6	A14203	0.25 0 LB A/A	A	1.0 a	1.0 a	1.0 c	1.0 b	1.0 a
	A14203	0.25 0 LB A/A	B					
	ACTIVATOR 90	0.25 % V/V	B					
7	TUPERSAN	8 LB/A	A	1.0 a	1.0 a	1.0 c	1.0 b	1.0 a
8	UNTREATED			1.0 a	1.0 a	1.0 c	1.0 b	1.0 a
LSD (P=.05)				NS	NS	0.76	0.82	NS

† Means followed by same letter do not significantly differ (P=0.05, LSD).

NS indicates not significant.

* injury measured where 1= no injury and 9= dead turf.

Table 3: The Velocity Tank-mix Turfgrass Tolerance Trial – 2008

Turf Injury

Trt. No.	Treatment	Rate	Jul/25/08 4 DA-A	Jul/30/08 9 DA-A	Aug/5/08 15 DA-A	Aug/12/08 22 DA-A
			Injury (1-9)			
1	VELOCITY	30 G A/A	1.7 bc	2.0 a	3.0 a	3.3 a
2	VELOCITY SPRINT 330	30 G A/A 2 OZ/M	1.0 c	2.0 a	2.7 a	3.0 a
3	VELOCITY WETTING AGENT	30 G A/A	2.7 a	2.0 a	1.3 a	1.0 b
4	VELOCITY UREA (LIQUID)	30 G A/A 0.2 LB A/M	2.3 ab	2.0 a	2.7 a	3.7 a
5	VELOCITY V-10142	30 G A/A 0.2 9 LB A/A	1.7 bc	2.0 a	2.7 a	3.7 a
6	UNTREATED		1.3 c	2.0 a	2.3 a	3.0 a
LSD (P=.05)			0.92	NS	NS	1.13

† Means followed by same letter do not significantly differ (P=0.05, LSD).

NS indicates not significant.

* injury measured where 1= no injury and 9= dead turf.

Table 4: The Tolerance of Echelon + Urea on Tall Fescue Trial – 2008

Treatment	Rate	Jun/23/08 5 DA-A	Jun/24/08 6 DA-A	Jun/26/08 8 DA-A	Jul/2/08 14 DA-A	Jul/9/08 21 DA-A
injury (1-9)*						
ECHELON 4SC	0.75 LB A/A	1.0 a	1.0 b	1.7 a	1.3 a	1.0 a
ECHELON 0.3G	0.75 LB A/A	1.0 a	1.0 b	1.0 a	1.0 a	1.0 a
DISMISS 4FL	0.125 LB A/A	1.0 a	1.0 b	1.0 a	1.3 a	1.0 a
Q4	8 PT/A	1.7 a	1.0 b	1.0 a	1.0 a	1.0 a
ECHELON 4SC	0.75 LB A/A	1.0 a	2.0 a	2.3 a	1.7 a	1.0 a
UREA	0.5 LB A/A					
DISMISS 4FL	0.125 LB A/A	1.0 a	1.0 b	1.7 a	1.3 a	1.0 a
UREA	0.5 LB A/A					
Q4	8 PT/A	1.3 a	1.0 b	1.7 a	1.3 a	1.0 a
UREA	0.5 LB A/A					
UREA	0.5 LB A/A	1.0 a	1.0 b	1.0 a	1.0 a	1.0 a
UNTREATED		1.0 a	1.0 b	1.0 a	1.0 a	1.0 a
LSD (P=.05)		NS	0.00	NS	NS	NS

† Means followed by same letter do not significantly differ (P=0.05, LSD).

NS indicates not significant.

* injury measured where 1= no injury and 9= dead turf.