

***Poa trivialis* Control with Combinations of Pesticides and Several Application Timings**

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Objective

Our objective was to determine the efficacy of combinations of pesticides and several application timings for control of *Poa trivialis*. A companion study was conducted to determine the phytotoxic response of fairway creeping bentgrass to these same treatments (see the following report).

Rationale

Poa trivialis has become a wide spread weed in creeping bentgrass fairways across Indiana and the midwest. Currently, there are no selective pesticidal controls of *Poa trivialis* available. Cultural control techniques alone have not provided satisfactory results. This research was undertaken in an attempt to identify commercially available pesticides that may have the potential to control *Poa trivialis*.

How It Was Done

Poa trivialis was seeded on 3 Sep 1997 in a silt loam soil at the W.H. Daniel Turfgrass Research and Diagnostic Center at the rate of 2 lbs seed per 1000 sq ft. A starter fertilizer was applied immediately prior to seeding at the rate of 0.5 lbs N, 1.5 lb P₂O₅, and 1.0 lbs K₂O per 1000 sq ft. Mowing height was gradually reduced until the experimental site was mowed at 0.75 inches three times per week. Turf was irrigated to prevent any sign of drought stress. No pesticides were applied except as experimental treatments. The initial date of treatment application was 2 June 1998 (0 weeks), the second application date was 26 June (3 weeks), and the third application date was 17 July (6 weeks). All treatments were applied using a CO₂ powered hand-held spray boom in 2 gal water per 1000 sq ft. Data collected were phytotoxicity and percent of plot area covered by *Poa trivialis*.

Results

- Many of the treatments caused phytotoxic damage to the *Poa trivialis* turf. Treatments containing Daconate 6 (MSMA) generally caused the greatest amount of phytotoxicity.
- Percent cover of *Poa trivialis* in the untreated check ranged from 92 to 99% depending on rating date.
- Single applications (0 weeks) and two application (0, 3 weeks), and most treatments with three applications (0, 3, 6 weeks) did not reduce cover of *Poa trivialis* compared to the untreated check (Table 1).
- Drive 75DF at 0.25 lbs ai/A plus methylated seed oil (MSO) applied 0, 3, 6 weeks, Drive 75DF at 1.0 lbs ai/A plus MSO applied 0, 3, 6 weeks, Drive 75DF at 0.5 lbs ai/A plus MSO plus Daconate 6 at 2.0 lbs ai/A applied 0, 3, 6 weeks and Daconate 6 at 2.0 lbs ai/A plus Turflon Ester 4L at 1 pint/A applied 0, 3, 6 weeks provided the greatest reduction in percent cover by *Poa trivialis* (Table 1).
- Based on the results of this experiment and the phytotoxic response of creeping bentgrass to these same treatments it does not appear that any of these treatments hold promise for effective control of *Poa trivialis*.

Table 1. *Poa trivialis* cover following the application of commercially available pesticides.

Treatment	Rate of application (lbs ai/A)	Application timing ^b (weeks)	% <i>Poa trivialis</i> cover ^a			
			26 June	16 July	7 Aug	27 Aug
Check	---		97.0	99.0	91.7	94.7
Drive 75DF	0.25	0	97.0	98.3	90.0	90.0
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	0.25	0, 3	97.0	98.0	91.7	91.7
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	0.25	0, 3, 6	97.0	98.3	86.7	79.0
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	0.5	0	97.0	98.7	91.7	96.7
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	0.5	0, 3	97.0	98.7	91.7	94.3
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	0.5	0, 3, 6	97.0	98.7	86.7	88.3
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	0.75	0	97.0	98.7	95.0	95.3
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	0.75	0, 3	97.0	98.3	94.0	94.7
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	0.75	0, 3, 6	97.0	98.7	86.7	88.3
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	1.0	0	97.0	98.3	92.3	95.7
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	1.0	0, 3	97.0	97.3	88.3	90.0
+ methylated seed oil ^c	1.0 ^d					
Drive 75DF	1.0	0, 3, 6	97.0	97.7	76.7	68.3
+ methylated seed oil ^c	1.0 ^d					
Daconate 6	2.0	0	97.0	99.0	95.0	95.7
Daconate 6	2.0	0, 3	97.0	98.3	90.0	88.7
Daconate 6	2.0	0, 3, 6	97.0	98.7	85.0	85.0
Drive 75DF	0.5	0	97.0	99.0	93.3	94.3
+ methylated seed oil	1.0 ^d					
+ Daconate 6 ^c	2.0					
Drive 75DF	0.5	0, 3	97.0	97.0	90.0	88.3
+ methylated seed oil	1.0 ^d					
+ Daconate 6 ^c	2.0					
Drive 75DF	0.5	0, 3, 6	97.0	98.0	68.3	73.3
+ methylated seed oil	1.0 ^d					
+ Daconate 6 ^c	2.0					

Table 1. *Poa trivialis* cover following the application of commercially available pesticides.
(continued)

Treatment	Rate of application (lbs ai/A)	Application timing ^b (weeks)	% <i>Poa trivialis</i> cover ^a			
			26 June	16 July	7 Aug	27 Aug
Turflon Ester 4L	0.5 ^e	0, 3, 6	97.0	98.3	91.7	95.3
Sentinel 40WG	0.33 ^f	0, 3, 6	97.0	99.0	97.7	98.3
Primo	0.5 ^f	0, 3, 6	97.0	99.0	95.3	96.7
Turflon Ester 4L	1.0 ^e	0	97.0	98.3	95.0	96.0
Turflon Ester 4L	1.0 ^e	0, 3	97.0	98.0	91.7	95.0
Turflon Ester 4L	1.0 ^e	0, 3, 6	97.0	98.0	90.0	92.0
Daconate 6	2.0	0	97.0	97.3	91.7	92.7
+ Turflon Ester 4L ^c	1.0 ^e					
Daconate 6	2.0	0, 3	97.0	97.3	85.0	85.0
+ Turflon Ester 4L ^c	1.0 ^e					
Daconate 6	2.0	0, 3, 6	97.0	98.7	50.0	50.0
+ Turflon Ester 4L ^c	1.0 ^e					
LSD (0.05)			NS	NS	7.2	11.2

^a Percent of plot covered by *Poa trivialis*.

^b Denotes weeks from initial application.

^c Denotes products applied as a tank mix.

^d Application rate was percent volume per volume.

^e Application rate was pints product per acre.

^f Application rate was ounces product per thousand square feet.