

Turflon to reduce zoysiagrass seedling injury to Acclaim or Fusilade when applied to suppress/control bermudagrass contamination

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Background/Objective: To evaluate the effect of tank-mixing Turflon with Acclaim or Fusilade to reduce zoysiagrass seedling injury.

Rationale: Acclaim and Fusilade selectively suppress bermudagrass in mature zoysiagrass stands often resulting in severe zoysiagrass injury. Recent studies have shown reduction in mature zoysiagrass phytotoxicity when Turflon is tank-mixed with Acclaim or Fusilade. This study was designed to assess the potential of using these products on seedling zoysiagrass.

Site Information

Location:	William H. Daniel Research and Diagnostic Center
Soil Type:	Starks-Fincastle silt loam
Soil pH:	7.2
Turfgrass Species:	'Zenith' Zoysiagrass
Turf Condition:	seedling
Turf Management: Mowing Height cm (in):	1.25 (.5) approximately
Fertilization:	0.5 lb N (starter fertilizer, 2 apps)
Irrigation:	To prevent moisture stress
Testing on Site Previous Year:	none
Target Pest:	
Growth Stage:	Seedling (seeded May 30, 07)

Application Information

Application Date:	27 June	24 July
Application Time:	9:00 a.m.	9:00 a.m.
Air Temperature C^o(F^o):	28 (82)	19 (67)
Relative Humidity (%):	72	71
Wind Speed m s⁻¹ (mph):	1.7 (4)	0 (0)
Soil Temperature(7.6 cm depth) C^o(F^o):	27 (80)	22 (71)
Soil Moisture:	moist	moist
Spray Volume L ha⁻¹ (gal 1000 ft⁻²):	407 (1)	
Spray Pressure:	30psi	
Spray Nozzle:	8001	
Spray Equipment:	CO ₂ backpack	
Irrigation After Application:	None	
Experimental Design:	Randomized complete block	
Replications:	3	
Plot Size m (ft):	2.0 X 1.0 (3.3 X 3.3)	

This study was designed as randomized complete block with four replications using various herbicide combinations applied two and six weeks after emergence. One half of each plot received the preemergent herbicide Tupersan to help define weed control potential of treatments. This study was also conducted in Arkansas and Tennessee and will be repeated at all three sites in 2008. Thus, full statistical analysis has not been completed and simple means are presented.

Results:

- Fusilade nor Acclaim alone should be applied to seedling zoysiagrass to control bermudagrass contamination due to excessive injury (Table 1).
- Turflon safened Fusilade and Acclaim sufficiently to allow application of these products 2 WAE and 2 and 6 WAE to seedling zoysiagrass. (Table 1).
- Early weed control and thus reduced competition was a fringe benefit of tank-mixing Turflon with Acclaim or Fusilade when spraying seedling zoysiagrass (Data not shown).

Table 1. Percent cover of ‘Zenith’ zoysiagrass following applications of Fusilade, Acclaim, and/or Turflon at two weeks after emergence (WAE) and two and six WAE.

Treatment	Rate of application (fl oz./A)	Application timing (WAE ^a)	Rating Date (WAE)				
			2	4	6	8	10
Fusilade (13% ai)	11.3	2	69	74	83	84	77
Acclaim (6.6% ai)	28.0	2	69	66	71	78	68
Turflon (61.6% ai)	32.0	2	68	78	86	97	98
Fusilade + Turflon	11.3 32.0	2 2	71	75	88	97	99
Acclaim + Turflon	28.0 32.0	2 2	69	73	84	97	95
Fusilade	11.3	2 & 6	65	71	84	78	65
Acclaim	28.0	2 & 6	69	59	69	66	51
Turflon	32.0	2 & 6	69	79	86	96	98
Fusilade + Turflon	11.3 32.0	2 & 6 2 & 6	65	75	88	95	98
Acclaim + Turflon	28.0 32.0	2 & 6 2 & 6	69	65	83	90	96
Check			70	81	85	87	83

^a Weeks after emergence (WAE) of zoysiagrass