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 (in):**	0.5
	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 July, 1 2008)

Application Information

Application Date:	1 Aug	28 Aug
Application Time:	9:00 a.m.	8:30 a.m.
Air Temperature (F^o):	80	70
Relative Humidity (%):	92	90
Wind Speed (mph):	1	1.3
Soil Temperature(3.0 in depth) (F^o):	78	73
Soil Moisture:	moist	moist
Spray Volume (gal 1000 ft^{-2}):	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 (ft):	3.3 X 6.6	

This study was designed as randomized complete block with four replications using various herbicide combinations applied two or two & six weeks after emergence (WAE). One half of each plot received the preemergent herbicide Tupersan to help define weed control potential of treatments. Cool, wet conditions in spring 2008 delayed seeding and limited zoysiagrass cover over all treatments. This study was also conducted in Arkansas and Tennessee thus, full statistical analysis has not been completed and simple means are presented.

Results:

- Similar trends persisted in 2008 as were observed in 2007.
- 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. This is evident when comparing the control to these treatments (Table 1).

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	46	31	53	69	69
Acclaim (6.6% ai)	28.0	2	55	28	46	68	67
Turflon (61.6% ai)	32.0	2	53	59	75	84	83
Fusilade + Turflon	11.3 32.0	2 2	55	58	79	85	88
Acclaim + Turflon	28.0 32.0	2 2	43	40	66	73	73
Fusilade	11.3	2 & 6	59	40	61	70	71
Acclaim	28.0	2 & 6	61	36	51	58	64
Turflon	32.0	2 & 6	55	63	79	82	82
Fusilade + Turflon	11.3 32.0	2 & 6 2 & 6	51	58	81	85	92
Acclaim + Turflon	28.0 32.0	2 & 6 2 & 6	48	46	75	79	84
Check			51	44	41	62	64

[a] Weeks after emergence (WAE) of zoysiagrass