Stop #4: Postemergence Control of Crabgrass in Tall Fescue

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Background and Objectives:

Drought, landscape water use restrictions, and self-imposed cutbacks on lawn irrigation have contributed to turf thinning, especially in cool-season species like tall fescue. As a result, warm-season weed species like crabgrass, a summer annual, frequently invade lawns disrupting color, texture, and uniformity during the summer months while creating voids again in late fall with dieback following flowering/seed dispersal and cooler temperatures.

The objectives of this study were to: 1) evaluate new and existing herbicides and combinations for postemergence control of smooth crabgrass (*Digitaria ischaemum*) in tall fescue turf; and 2) determine the effects of adjuvant type and concentration on weed control.

Methods:

Experimental Design: Randomized block; 4 replications

Plot size: 7 ft x 10 ft; 4 ft alleys

Turfgrass Species: Tall fescue (3-inch height of cut)

Weed Species: Smooth crabgrass (*Digitaria ischaemum*)
Growth Stage: 2-3 leaf to tillering at initial application

Application Dates: 10 June 2016 (initial application)
8 July 2016 (4 weeks after initial application)
3 August 2016 (8 weeks after initial application)

Spray Information: CO_2-powered bicycle sprayer
TeeJet 8003VS nozzles; 19-inch spacing; 45 psi; 1 gal/M

Plot Plan: **North**

1	2	3	4	5	6	7	8	9	10	11	12	13	14
7	3	5	1	13	4	6	14	2	11	8	10	9	12
13	8	4	11	7	10	2	9	3	6	14	1	12	5
3	6	9	12	1	8	13	5	11	14	4	7	2	10

Results:

- ✓ Crabgrass was mostly young (2-3 leaf) to first tillering at the time of initial treatment (i.e., not too late for postemergence control).
- ✓ Pylex (topramezone) was the only herbicide that resulted in desirable (near 100%) crabgrass control following two applications. In fact, no other herbicide reached >90% control at 23 days following three applications (Table 1).
- ✓ Addition of Turflon Ester Ultra (triclopyr) helped to reduce bleaching of crabgrass caused by Pylex and Tenacity (mesotrione) herbicides, both carotenoid biosynthesis inhibitors (data not shown). Furthermore, Turflon appeared to increase crabgrass control when tank-mixed with most herbicides. Also, Turflon provides broadleaf control, which was not evaluated in this study due to lack of broadleaf weeds present.
- ✓ When tank-mixed with Tenacity and Turflon, both Sync Activator Adjuvant and Ad-Max 90 caused a slight increase in crabgrass control vs. both herbicides without adjuvant. Also, crabgrass control was slightly better in tank mixes containing Sync compared to Ad-Max 90. However, all aforementioned differences were not statistically significant.
- ✓ It appears that this crabgrass population is resistant to quinclorac (Drive XLR8) herbicide as has been reported elsewhere including the Central Valley of California.
- ✓ Pylex and Last Call (fenoxaprop, fluroxypyr, dicamba) herbicides are not currently registered for turf use in California.

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Table 1. Effects of herbicides and adjuvants on postemergence control of smooth crabgrass in tall fescue turf. Riverside, CA. Crabgrass control (0-100%) based on initial crabgrass cover on 10 June 2016.

No.	Treatment	Company	Rate	Crabgrass % Control (07/8/16)	Crabgrass % Control (08/2/16)	Crabgrass % Control (08/26/16)
1	Tenacity	Syngenta	5 oz/A	17 fgh	8 fg	25 cd
1	Ad-Max 90	Simplot	0.25% v/v			
2	Tenacity	Syngenta	5 oz/A	32 efgh	32 def	67 b
2	Turflon Ester Ultra	Dow	16 oz/A			
3	Tenacity	Syngenta	5 oz/A	44 cdef	42 cde	74 ab
3	Turflon Ester Ultra	Dow	16 oz/A			
3	Ad-Max 90	Simplot	0.25% v/v			
4	Tenacity	Syngenta	5 oz/A	50 bcde	46 bcde	83 ab
4	Turflon Ester Ultra	Dow	16 oz/A			
4	Sync	Precision Labs	0.062% v/v			
5	Tenacity	Syngenta	5 oz/A	28 efgh	23 efg	79 ab
5	Turflon Ester Ultra	Dow	16 oz/A			
5	Sync	Precision Labs	0.125% v/v			
6	Tenacity	Syngenta	5 oz/A	44 cdef	61 bc	86 ab
6	Turflon Ester Ultra	Dow	16 oz/A			
6	Sync	Precision Labs	0.25% v/v			
7	Tenacity	Syngenta	5 oz/A	38 defg	33 def	31 c
7	Dismiss CA	FMC	4 oz/A			
7	Ad-Max 90	Simplot	0.25% v/v			
8	Tenacity	Syngenta	5 oz/A	71 abc	74 ab	81 ab
8	Dismiss CA	FMC	4 oz/A			
8	Turflon Ester Ultra	Dow	16 oz/A			
8	Ad-Max 90	Simplot	0.25% v/v			
9	Dismiss CA	FMC	8 oz/A	4 h	0 g	0 d
10	Pylex	BASF	1.5 oz/A	81 a	98 a	91 ab
10	MSO	Loveland	0.5% v/v			
11	Pylex	BASF	5 oz/A	78 ab	96 a	100 a
11	Turflon Ester Ultra	Dow	16 oz/A			
11	MSO	Loveland	0.5% v/v			
12	Drive XLR8	BASF	64 oz/A	20 fgh	0 g	0 d
12	MSO	Loveland	0.5% v/v			
13	Last Call	NuFarm	64 oz/A	64 abcd	52 bcd	65 b
13	Ad-Max 90	Simplot	0.25% v/v			
14	Control	--	--	12 gh	0 g	0 d

Means followed by the same letter in a column are not significantly different (P = 0.05).

Treatments were applied on 10 June, 8 July, and 3 August 2016.