THE EFFECTIVENESS OF ACCLAIM WITH BROADLEAF HERBICIDES

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Tank mixing herbicides is commonly practiced among turf professionals to save time and money. Occasionally, antagonism occurs which reduces the effectiveness of one or both herbicides. The objectives of the following studies were to evaluate percent control of "Acclaim 1 EC" herbicide alone and in combination with broadleaf herbicides to determine if antagonism was apparent in the combinations. Two experiments were performed in 1986 which tested fenoxaprop (Acclaim) with broadleaf herbicides. The treatments were expanded in 1987 and performed at the Clio Country Club, in Clio, MI. The site consisted of an irrigated crabgrass infested tee rough, with plants ranging from five to ten tillers. The turfgrass species present were Kentucky bluegrass and perennial ryegrass.

Results (Table 1) of Acclaim at rates of 0.18 and 0.35 lb/A gave 64 and 60% control, respectively. These low percentages were expected due to the large crabgrass growth stages present. Fenoxaprop in combination with Breakthru (chlorflurenol), Banvel (dicamba), Mecoprop (MCPP), and Turflon (triclopyr) did not show antagonism. Acclaim at both rates with Esteron 99 (2,4-D ester) produced significant antagonism. Acclaim at 0.18 lb/A with clopyralid, DPX-L5300, and Trimec also produced significant antagonism. Acclaim at 0.35 lb/A combined with Buctril (bromoxynil) was antagonistic. Acclaim at both rates in combination with fluroxypyr showed increased crabgrass control.

The identical treatments and experimental design as described above were applied to an irrigated Kentucky bluegrass blend at the Hancock Turfgrass Research Facility, in E. Lansing, MI overseeded with large crabgrass (*Digitaria sanguinalis*). At the time of application, plots averaged 10 to 12 percent crabgrass groundcover, with a three leaf to one tiller growth stage.

Results (Table 2) show Acclaim (fenoxaprop) at both rates giving excellent control. Acclaim at the 0.18 lb/A rate tank mixed with bromoxynil, 2,4-D ester, and Trimec produced antagonism. By increasing Acclaim to 0.35 lb/A with these same combinations, antagonism was overcome and the combinations provided good to excellent crabgrass control. When attempting to control large crabgrass, increasing Acclaim to 0.35 lb/A with these same broadleaf herbicides was not feasible (Table 1). Acclaim at 0.18 lb/A in combination with DPX-L5300 produced significant antagonism along with severe Kentucky bluegrass phytotoxicity. When the Acclaim rate was increased to 0.35 lb/A in combination with DPX-L5300, antagonism in terms of reduced control was still apparent, however there was a significant reduction in turfgrass phytotoxicity from DPX-L5300 indicating reciprocal antagonism between these two compounds.

When comparing these two experiments, Acclaim in combination with chlorflurenol, dicamba, fluroxypyr, MCPP, or triclopyr did not produce antagonism. Fenoxaprop plus clopyralid (0.18 + 0.25 lb/A) gave excellent control of one tiller crabgrass (Table 2), but was antagonistic when attempting to control larger crabgrass plants (Table 1).

TABLE 1: FENOXAPROP (ACCLAIM) ALONE AND IN COMBINATION WITH BROADLEAF HERBICIDES APPLIED TO A KENTUCKY BLUEGRASS/PERENNIAL RYEGRASS TEE ROUGH AT CLIO COUNTRY CLUB, CLIO MI, ON 8-4-87. (DIGITARIA GROWTH STAGE = 4 LEAF, 5 TO 10 TILLERS.)

TREATMENTS	RATE (LB/A)	PERCENT DIGITARIA CONTROL 2 WAT	4 WAT	6 WAT
1. ACC + TRIMEC#	.18 + 1.0	3	1	0
2. ACC + CLOPYRALID	.18 + .25	0	21	49
3. ACCLAIM	.18	21	64	94
4. ACC + 2,4-D ESTER	.18 + 1.0	2	2	6
5. ACC + DICAMBA	.18 + .50	22	40	59
6. ACC + FLUROXYPYR	.18 + .50	59	80	75
7. ACC + BROMOXYNIL	.18 + 1.0	42	28	39
8. ACC + MCPP	.18 + 1.0	14	56	81
9. ACC + DPX-L5300	.18 + .75	11	6	44
10. ACC + CHLORFLURENOL	.18 + .125	31	52	69
11. ACC + TRICLOPYR	.18 + .50	11	34	40
12. ACC + 2,4-D ESTER	.35 + 1.0	13	10	16
13. ACC + DICAMBA	.35 + .50	41	51	68
14. ACC + FLUROXYPYR	.35 + .50	67	100	99
15. ACC + BROMOXYNIL	.35 + 1.0	18	13	10
16. ACC + MCPP	.35 + 1.0	24	65	96
17. ACC + TRIMEC	.35 + 1.0	38	37	42
18. ACC + DPX-L5300	.35 + .75	0	1	9
19. ACC + CHLORFLURENOL	.35 + .125	44	68	75
20. ACC + TRICLOPYR	.35 + .50	52	63	76
21. ACC + CLOPYRALID	.35 + .25	49	72	90
22. ACCLAIM	.35	38	60	91
23. 2,4-D ESTER	1.0	0	0	3
24. DICAMBA	.50	2	4	14
25. FLUROXYPYR	.50	0	0	0
26. BROMOXYNIL	1.0	5	5	30
27. MCPP	1.0	0	0	2
28. DPX-L5300	.75	0	0	21
29. CHLORFLURENOL	.125	0	0	16
30. TRIMEC	1.0	2	0	7
31. TRICLOPYR	.50	0	0	0
32. CLOPYRALID	.25	0	0	3
33. CONTROL	---	5	3	7
		LSD(0.05) = 36	40	45

1.0 LB/A RATE SIGNIFIES THE 2,4-D PORTION OF TRIMEC.

TABLE 2: FENOXAPROP (ACCLAIM) ALONE AND IN COMBINATION WITH BROADLEAF HERBICIDES APPLIED TO A KENTUCKY BLUEGRASS BLEND AT THE HANCOCK TURFGRASS RESEARCH CENTER, EAST LANSING, MI ON 8-5-87. (DIGITARIA GROWTH STAGE = 3 LEAF TO 1 TILLER.)

TREATMENTS	RATE (LB/A)	PERCENT CONTROL OF CRABGRASS			PHYTOTOXICITY TO *POA PRATENSIS*		
		2WAT	4WAT	6WAT	2WAT	4WAT	6WAT
1. ACC + TRIMEC #	.18 + 1.0	46	54	24	9.0	9.0	9.0
2. ACC + CLOPYRALID	.18 + .25	86	98	96	8.0	9.0	9.0
3. ACCLAIM	.18	92	93	88	7.7	9.0	9.0
4. ACC + 2,4-D ESTER	.18 + 1.0	40	40	33	8.7	9.0	9.0
5. ACC + DICAMBA	.18 + .50	90	90	90	8.7	9.0	9.0
6. ACC + FLUROXYPYR	.18 + .50	100	100	94	8.0	9.0	9.0
7. ACC + BROMOXYNIL	.18 + 1.0	45	30	9	8.7	9.0	9.0
8. ACC + MCPP	.18 + 1.0	92	95	97	8.3	9.0	9.0
9. ACC + DPX-L5300	.18 + .75	0	0	0	6.3	6.0	9.0
10. ACC + CHLORFLURENOL	.18 + .125	87	93	84	8.3	9.0	9.0
11. ACC + TRICLOPYR	.18 + .50	100	80	48	8.7	8.7	9.0
12. ACC + 2,4-D ESTER	.35 + 1.0	86	100	90	7.0	8.3	9.0
13. ACC + DICAMBA	.35 + .50	95	97	95	8.0	9.0	9.0
14. ACC + FLUROXYPYR	.35 + .50	100	100	88	6.3	7.3	9.0
15. ACC + BROMOXYNIL	.35 + 1.0	92	93	79	7.0	8.7	9.0
16. ACC + MCPP	.35 + 1.0	96	100	80	7.3	8.3	9.0
17. ACC + TRIMEC	.35 + 1.0	95	91	82	8.3	8.7	9.0
18. ACC + DPX-L5300	.35 + .75	0	15	13	7.0	8.3	9.0
19. ACC + CHLORFLURENOL	.35 + .125	100	100	100	7.3	8.0	9.0
20. ACC + TRICLOPYR	.35 + .50	100	100	98	7.7	8.3	9.0
21. ACC + CLOPYRALID	.35 + .25	93	96	91	6.3	8.7	9.0
22. ACCLAIM	.35	97	97	97	6.3	8.0	9.0
23. 2,4-D ESTER	1.0	0	0	0	8.7	9.0	9.0
24. DICAMBA	.50	0	0	0	9.0	9.0	9.0
25. FLUROXYPYR	.50	10	3	14	8.7	9.0	9.0
26. BROMOXYNIL	1.0	8	0	8	9.0	9.0	9.0
27. MCPP	1.0	0	0	0	9.0	9.0	9.0
28. DPX-L5300	.75	0	0	0	6.7	6.0	9.0
29. CHLORFLURENOL	.125	0	0	0	9.0	9.0	9.0
30. TRIMEC	1.0	0	0	0	9.0	9.0	9.0
31. TRICLOPYR	.50	0	0	0	9.0	9.0	9.0
32. CLOPYRALID	.25	0	0	0	8.7	9.0	9.0
33. CONTROL	---	0	0	0	8.7	9.0	9.0
	LSD(0.05)=	25	24	31	1.0	1.0	---

THE 1.0 LB/A RATE SIGNIFIES THE 2,4-D PORTION OF TRIMEC.