

HERBICIDE COMPARISONS ON CORNFLOWER (*CENTAUREA CYANUS*) CONTROL IN WHEAT

James R. Martin
Department of Agronomy

INTRODUCTION:

Previous studies have shown that Buctril (bromoxynil) is more effective than certain other herbicides in controlling cornflower in wheat. However, Buctril does not effectively control such weeds as common chickweed, henbit, purple deadnettle, vetch spp., and wild garlic. Combining Buctril with other herbicides could help control more weed species with a single application in fields where cornflower and other problem weeds occur. It is not clear if such combinations would allow growers to reduce the rate of Buctril rate or control larger cornflower plants compared with Buctril alone.

OBJECTIVE:

Field trials studies were conducted on Bill Balance's farm in Warren County to evaluate cornflower control in wheat following fall and spring applications of Buctril applied alone and in combination with Clarity (dicamba) or Harmony Extra (premix of thifensulfuron plu tribenuron).

METHODS:

Buctril was applied at 1.5 alone and in combination with Clarity 4S at 4 oz/A or with Harmony Extra 75DF at 0.5 oz/A plus nonionic surfactant at 0.25% v/v at three different times. Buctril was also applied alone at 2 pt/A at three different times.

Herbicides were applied with a CO₂ back-pack sprayer in a spray volume of 20 GPA. Treatments replicated 3 times using a randomized complete block design. Plot size was 10 ft wide by 30 ft long.

Visual ratings of wheat injury and cornflower control were made on March 29, April 10, and June 1, 2001. Ratings were based on a scale of 0 to 100 with 0 = no injury or control and 100 = complete death.

RESULTS:

The 2 pt/A rate of Buctril tended to be more consistent in controlling cornflower than the 1.5 pt/A rate, especially when applications were delayed until early- to mid- March (Table 1). The June evaluations indicated that the fall treatment of Buctril at 1.5 pt/A provided 97% control of cornflower. However this low rate of Buctril applied in mid- March provided only 73% cornflower control.

Based on ratings made in June, Clarity mixed with Buctril tended to improve control of cornflower compared with Buctril alone at 1.5 pt/A and was comparable to the level of control achieved with Buctril at 2 pt/A. The ratings in early March indicated that some cornflower plants were stunted and still surviving following this mixture, but by June these plants appeared to be completely controlled. Wheat was injured by including Clarity with Buctril, however only 3% injury was observed by June.

The use of Harmony Extra with Buctril often improved control of cornflower compared to Buctril alone at 1.5 pt/A (with the exception June rating for the fall application). The level of control observed with this mixture in the June rating was equal to that observed with Buctril at 2 pt/A. Wheat injury also occurred with the Harmony plus Buctril combination, although injury did not exceed 3% by June.

SUMMARY / CONCLUSIONS:

The results of this study showed that Buctril at the rate of 2 pt/A was consistent in controlling cornflower; however, the 1.5 pt/A rate tended to be less effective when applications were delayed until spring. Including Clarity or Harmony Extra with Buctril at 1.5 pt/A helps improve cornflower control with the spring applications. These tank mixtures appeared to cause wheat injury, yet injury did not appear to be significant near the end of the season.

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Table 1. CORNFLOWER CONTROL IN WHEAT FOLLOWING SPRING AND FALL APPLICATIONS OF BUCTRIL WITH CLARITY OR HARMONY EXTRA. (Warren Co 2000-2001)

Chemicals	Timing ¹	Wheat injury %			Cornflower Control %		
		3/29/01	4/10/01	6/1/01	3/29/01	4/10/01	6/1/01
Buctril 2 EC 1.5 pt/A	Fall	0	0	0	90	97	97
Buctril 2 EC 2 pt/A		0	0	0	90	100	97
Buctril 2 EC 1.5 pt/A Clarity 4 S 4 oz/A		0	0	0	100	100	100
Buctril 2 EC 1.5 pt/A Harmony Extra 0.5 oz/A Surfactant 0.25% v/v		0	0	0	100	100	87
Buctril 2 EC 1.5 pt/A	Spr 1	0	0	0	83	100	93
Buctril 2 EC 2 pt/A		0	0	0	96	100	100
Buctril 2 EC 1.5 pt/A Clarity 4 S 4 oz/A		10	13	3	90	100	100
Buctril 2 EC 1.5 pt/A Harmony Extra 0.5 oz/A Surfactant 0.25		0	3	0	93	100	100
Buctril 2 EC 1.5 pt/A	Spr 2	0	0	0	70	80	73
Buctril 2 EC 2 pt/A		3	0	3	90	97	100
Buctril 2 EC 1.5 pt/A Clarity 4 S 4 oz/A		7	13	3	83	90	100
Buctril 2 EC 1.5 pt/A Harmony Extra 0.5 oz/A Surfactant 0.25		10	7	3	83	100	100
Non treated check		0	0	0	0	0	0
LSD (0.05)		3	8	5	12	10	6

¹ Timing of application: Fall = 12/03/00, Spr = 3/2/01, Spr 2 = 3/13/01.