HERBICIDE COMPARISONS ON CORNFLOWER CONTROL IN WHEAT

James R. Martin
Department of Agronomy

OBJECTIVE:
Field trials studies were initiated in Simpson and Warren Counties to evaluate fall and spring applications of herbicides for selective postemergence control of Cornflower (*Centaurea cyanus*) in wheat.

METHODS:
Due to the dry conditions in the fall of 1999, the emergence of cornflower was erratic. These unique circumstances made it difficult to select a site that had a uniform pressure for conducting this research. Sites were eventually identified and fall treatments were made in wheat fields managed by Charles Farrell in Simpson County and Harold and Victor Smallings in Warren County. It was later determined that the cornflower populations at these sites were not uniform enough to obtain reliable evaluations, consequently these particular studies were discontinued.

A site with a uniform population of cornflower was selected on the Harold and Victor Smallings' farm, near the original site, to evaluate spring applications of herbicides. Treatments were applied to 3 leaf and 6 leaf cornflower plants in a spray volume of 26 gal/A with a CO_2 back-sprayer on February 9, 2000 and March 15, 2000, respectively. Three herbicides were used in this study with each herbicide having a different mode of action. Treatments included Buctril at 1.5 or 2 pt/A ; Clarity at 2 or 4 oz/A; and Sencor DF at 4 or 8 oz/A. Buctril contains the active ingredient bromoxynil which has contact foliar activity. Clarity contains the active ingredient dicamba which is a growth-regulator type herbicide that has foliar activity and limited soil-residual activity. Sencor contains metribuzin which is a triazine herbicide that has foliar and soil-residual activity.

Treatments were replicated 3 times using a randomized complete block design. Plot size was 5 ft wide by 25 ft long. A visual rating of percent control of cornflower was made on April 4, 2000.

RESULTS:
Of the three herbicides evaluated in this study, Buctril tended to be the most consistent across treatments in controlling cornflower (Table 1). Applying Buctril at 1.5 pt/A or 2 pt/A to one- to three- inch tall cornflower resulted in 97 and 100 percent control, respectively. Delaying the application of Buctril until cornflower plants were up to 6 inches tall resulted in 80% cornflower control with the 1.5 pt/A rate, compared with 100% control with the 2 pt/A rate.

Sencor applied at the 8 oz/A rate to one- to three-leaf plants was as effective as Buctril in controlling cornflower. Control with Sencor was substantially reduced when applications were made to cornflower plants up to six-leaf stage. Clarity at 2 oz/A or 4 oz/A did not

appear to be effective in controlling cornflower regardless of the stage of growth of cornflower.

SUMMARY / CONCLUSIONS:

The dry soil conditions in the fall of 1999 delayed emergence of cornflower; thus results for original studies with fall treatments were inconclusive and not reported. The comparison of spring-applied treatments indicated Buctril at 2 pt/A was the most effective in controlling cornflower plants up to six-leaf stage. The trend in reduction of control when applications of Buctril at 1.5 pt/A was delayed, helps support the fact that Buctril is most effective in controlling plants that are relatively small. Sencor appeared to be effective in controlling cornflower plants, providing the high rate of 8 oz/A was applied to small plants. It should be noted that the favorable weather conditions observed during the spring treatments may have played a role in the success with Buctril and Sencor. Clarity was not effective when applied at 2 or 4 oz/A.

TABLE 1. CORNFLOWER CONTROL IN WHEAT WITH SPRING APPLICATION OF BUCTRIL, CLARITY AND SENCOR. (WARREN CO. 1999-2000)

Herbicide	Rate/A	Percent cornflower control (Apr 4, 2000) [1]	
		3 - leaf plants [2]	6 - leaf plants
Buctril	1.5 pt/A	97 a	80 a
	2 pt/A	100 a	100 a
Clarity	2 oz/A	10 bc	10 bc
	4 oz/A	17 bc	10 bc
Sencor DF	4 oz/A	7 bc	47 b
	8 oz/A	100 a	20 bc
Non treated check		0 bc	

[1] Values with same letters are not statistically different based on analysis of transformed data at 0.05 level of significance.

[2] Timing of application: 3-leaf cornflower plants treated on 2/9/00.
6-leaf cornflower plants treated on 3/15/00.

Acknowledgments: Appreciation is expressed to Mike Bullock, Charles Farrell, Billy Huffines, Harold and Victor Smallings, Luther Smith, and Jeff Watt for their assistance with this research.