EFFECT OF TIMING OF APPLICATION ON HENBIT AND COMMON CHICKWEED CONTROL AND YIELD OF CONVENTIONAL TILLAGE WHEAT

(Calloway County, Warren County, and UKREC 2001-2002)

James R. Martin, Dottie Call, Gerald Claywell, and John James
Department of Agronomy

INTRODUCTION:

There is an increasing interest in applying herbicides in the fall rather than in the spring for controlling broadleaf weeds in wheat. This approach is beneficial for achieving optimum yields in no tillage wheat and for obtaining effective control of certain species such as cornflower. However, little has been done to determine it fall applications provide an advantage over spring applications for managing such weeds as common chickweed and henbit in conventional tillage wheat.

The objective of this research was to evaluate the affect of fall and spring applications of Harmony Extra and Sencor on common chickweed and henbit control and yield of wheat planted in a conventional tilled seed bed.

METHODS:

Pioneer 2552 was planted in tilled seedbeds in early to mid October in Calloway County, Warren County, and at the University of Kentucky Research & Education Center (UKREC) near Princeton, KY. The wheat stands in late November were 28, 30, and 30 plants /ft^2 for Calloway Co., Warren Co., and UKREC, respectively. The averages for percent broadleaf weed cover were determined in late November and were 5, 19, and 17% for Calloway Co., Warren Co., and UKREC, respectively.

Harmony Extra (thifensulfuron + tribenuron) and Sencor (metribuzin) were applied as fall sprays mid to late November and spring treatments in late March or early April. Details on herbicide rates and dates of applications are listed in Table 1. Herbicide treatments were applied with a CO^2 pressurized back pack sprayer in a spray volume of 20 gpa. A non treated check was included for comparison with herbicide treatments. Treatments were replicated three times

Warrior at 3.5 oz/A was applied during late November to early December and in April. Tilt at 4 oz/A was applied in late April. Nitrogen was applied as a split treatment at approximately 35 units/A in mid to late February and at 70 units in mid March.

Visual ratings for broadleaf weed control were made in late April. Wheat was harvested with a plot combine.

RESULTS:

Henbit control with Harmony Extra ranged from 94 to 100% at all locations compared with Sencor which provided 86 to 100%.

Increasing the rate of fall-applied Harmony Extra from 0.3 oz/A to 0.5 oz/A did not affect henbit control. However, henbit control improved from 86 to 100% with fall-applied Sencor only at Warren County, when the herbicide rate was increased from 2 oz/A to 4 oz/A.

Spring applications of Harmony Extra at 0.5 oz/A provided 94 to 99% henbit control and was similar to the level of control with the same rate applied in the fall.

Henbit control with spring applications of Sencor at 4 oz/A ranged form 96 to 100% and was similar to the control observed with the same rate applied in the fall. Since the 4 oz/A rate provided excellent control of henbit,

there was no benefit in increasing the rate to 6 oz/A in the spring applications.

Common chickweed control at UKREC ranged from 93 to 100%. Fall-applied Harmony Extra at 0.3 and 0.5 oz/A provided 100% control of common chickweed. Although the spring application of Harmony Extra provided effective common chickweed control (i.e. 93%), it was significantly less compared with the control achieved with the same rate applied in the fall. Fall - applied Sencor at 2 and 4 oz/A provided 94 and 97 % common chickweed control, respectively. Spring - applied Sencor at 4 or 6 oz/A provided 100% common chickweed control, which was significantly better than the control observed with the fall treatments.

The wheat yields ranged from 81.6 to 87.7 at Calloway County; 87.1 to 91.9 at Warren County; and 99.5 to 106.2 bu/A at UKREC. Although all herbicide treatments provided good to excellent control of broadleaf weeds, the yield of wheat did not increase when compared with the non treated check.

SUMMARY:

Harmony Extra and Sencor provided effective control of henbit and common chickweed in wheat regardless of timing of application and herbicide rate. However at one of the three site, the use of Sencor in the fall at the low rate of 2 oz/A, resulted in slightly less control of henbit compared with the 4 oz/A rate. The same trend was observed with common chickweed.

Wheat yield did not increase as a result of improved weed control when compared with the non treated check. Apparently the wheat stands were competitive against the levels of broadleaf weeds observed in these studies.

Table 1. Impact of Fall and Spring Applied Harmony Extra and Sencor on Broadleaf Control and Wheat Yield. Calloway County, Warren County, and UKREC Princeton, KY (2001-2002).

Herbicide	Rate	Timing	Henbit Control (%)			Chickweed Control (%)	Wheat Yield (Bu/A)		
			Calloway	Warren	UKREC	UKREC	Calloway	Warren	UKREC
Harmony Extra Surfactant	0.3 oz/A 0.25%	Fall	100	95	100	100	87.7	90.1	99.5
Harmony Extra Surfactant	0.5 oz/A 0.25%	Fall	95	97	100	100	86.0	87.1	101.3
Harmony Extra Surfactant	0.5 oz/A 0.25%	Spring	94	99	98	93	84.4	88	105.0
Sencor DF	2 oz/A	Fall	96	86	100	94	85.4	87.8	105.0
Sencor DF	4 oz/A	Fall	95	100	100	97	85.2	90.3	106.2
Sencor DF	4 oz/A	Spring	100	96	100	100	82.4	87.6	101.4
Sencor DF	6 oz/A	Spring	100	100	100	100	81.6	89.9	103.3
Non treated Check			0	0	0	0	87.1	91.9	104.3
LSD (0.05)			7	8	3	2.3	NS	NS	NS

	Calloway Co	**Warren County**	**UKREC**
Planted:	10/23/01	10/9/01	10/22/01
Fall Application	11/26/01	11/15/0 1	11/26/01
Spring Application	4/1/02	3/28/02	3/28/02
Weed Cover in Nov.	5%	19%	17%