

# **AFFECT OF TIMING OF APPLICATION ON HENBIT AND COMMON CHICKWEED CONTROL AND YIELD OF CONVENTIONAL TILLAGE WHEAT (WARREN COUNTY AND UKREC 2002-2003)**

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## **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 if 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 broadleaf weed control and yield of wheat planted in a conventional tilled seedbed. Results of similar studies were reported in the UK Wheat Science 2001-2002 Research Report.

## **METHODS:**

Pioneer 2552 was planted in tilled seedbeds in early to mid October at the University of Kentucky Research & Education Center (UKREC) near Princeton, KY and in Warren County. The wheat stands in late November were 33 and 35 plants /ft<sup>2</sup> for UKREC and Warren Co., respectively.

Visual ratings of ground cover occupied by weeds in the row middles of the non-treated checks were used to gauge the level weed pressure at the time the herbicides were applied.

Estimates at UKREC indicated broadleaf weeds occupied approximately 24% ground cover when fall treatments were applied compared with 64% when spring treatments were applied. Based on these estimates, the amount of weedy vegetation increased 160% by delaying the applications until spring. Henbit and common chickweed were present in the fall but common chickweed became the dominant species in the spring at UKREC.

Henbit was the dominant species throughout the duration of the experiment at Warren county. It occupied 29% ground cover in the row middles when all treatments were applied compared with 83% when the spring treatments were applied. Based on these estimates, the amount of vegetation increased approximately 180% by delaying the applications until spring

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

Visual ratings for broadleaf weed control were made in late April to early May. Wheat plots were harvested in June with a plot combine.

**RESULTS:**

Common chickweed control on May 3 ranged from 95 to 100% at UKREC. Although control with spring-applied Sencor at 6 oz/A was statistically better than that with fall - applied Sencor at 2 oz/A, the magnitude of the difference was only 5%.

Henbit control ratings on April 28 with all herbicide treatments were excellent and ranged from 97 to 100% at Warren County. Although most Sencor treatments provided significantly better control of henbit than fall applied Harmony Extra at 0.3 oz/A, the amount of the difference in control was small.

Wheat yields for the herbicide treatments at UKREC ranged from 93.3 to 110.4 bu/A and were significantly better than the 76.1 bu/A for the non-treated check. The spring - applied Harmony Extra at 0.5 oz/A yielded less than Harmony Extra applied in the fall at either 0.3 or 0.5 oz/A. The yields of spring - applied Sencor at 4 or 6 oz/A were significantly less than fall - applied Sencor at 4 oz/A.

The wheat yields at Warren County ranged from 85.7 to 91.9 bu/A. Competition from henbit at this site was not a factor since wheat yields of the herbicide treatments were equal to that of the non-treated check.

**SUMMARY:**

Harmony Extra and Sencor provided excellent control of common chickweed and henbit, regardless of timing of application. There was a slight reduction in control of certain weed species by applying Sencor or Harmony Extra at reduced rates in the fall; however, the magnitude in loss of control was minor.

Delaying application until spring tended to result in less wheat yield where chickweed pressure was heavy. Henbit did not appear to be competitive at the Warren County site; consequently, there was no benefit for spraying herbicides in the fall or spring.

**TABLE 1. IMPACT OF FALL AND SPRING APPLIED HARMONY EXTRA AND SENCOR ON BROADLEAF WEED CONTROL AND WHEAT YIELD**

**(UKREC AND WARREN COUNTY 2002 - 2003)**

Chemicals	Rate	Timing	Common Chickweed Control (%)	Henbit Control (%)	Wheat Yield (Bu/A)	
			UKREC (5/3/2003)	Warren County (4/28/2003)	UKREC (6/19/2003)	Warren Co (6/27/2003)
Harmony Extra Surfactant	0.3 oz/A 0.25%	Fall	96	97	110.3	87.2
Harmony Extra Surfactant	0.5 oz/A 0.25%	Fall	99	99	106.1	88.9
Harmony Extra Surfactant	0.5 oz/A 0.25%	Spring	98	98	93.3	87.6
Sencor DF	2 oz/A	Fall	95	99	104.7	85.7
Sencor DF	4 oz/A	Fall	98	98	110.4	89.2
Sencor DF	4 oz/A	Spring	98	100	100.8	86.2
Sencor DF	6 oz/A	Spring	100	100	94.3	89.9
Nontreated Check			0	0	76.1	91.9
LSD (0.05)			4	2	8.7	NS
			<u>UKREC</u>	<u>Warren County</u>		
Planted:			10/18/2002	10/18/2002		
Fall application:			11/21/2002	11/20/2002		
Spring application:			3/24/2003	3/22/2003		
Weed cover in Fall			24%	29%		
Weed cover in Spring:			64%	83%		