

EFFECT OF TIMING OF APPLICATION ON HENBIT AND COMMON CHICKWEED CONTROL AND YIELD OF CONVENTIONAL TILLAGE WHEAT (2004–2005)

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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 effect of fall and spring applications of Harmony Extra and Sencor on broadleaf weed control and yield of intensively managed wheat planted in a conventional tilled seed bed.

Methods:

Pioneer 25R35 was planted in a tilled seedbed October 22, 2004 at the University of Kentucky Research & Education Center (UKREC) near Princeton, KY. Wheat stand was approximately 35 plants/ft².

Harmony Extra (thifensulfuron + tribenuron) and Sencor (metribuzin) were applied as fall sprays on December 4, 2004 and as spring treatments on March 23, 2005. Herbicide rates and size of wheat and weeds are listed in Table 1. Treatments were applied with a CO₂ pressurized back pack sprayer in a spray volume of 20 gpa. A non-treated check

was included for comparison with herbicide treatments.

Warrior at 3.5 oz/A was applied March 17, 2005. Tilt at 4 oz/A was applied May 4, 2005. Nitrogen was applied as a split treatment at approximately 30 units/A on February 18, and 79 units/A on March 30, 2005.

Visual ratings of ground cover occupied by weeds in the row middles of non-treated wheat were used to gauge the level weed pressure at the time the herbicides were applied. The estimate for groundcover occupied by broadleaf weeds at the time of fall treatments was 8% compared with 24% when the spring treatments were applied. Annual bluegrass was observed, but did not exceed 3% ground cover in the spring.

Control of common chickweed (*Stellaria media*) and henbit (*Lamium amplexicaule*) was evaluated April 28. Plots were harvested with a small plot combine on June 20.

Results:

All treatments provided excellent control of henbit and common chickweed, regardless of timing of application (See table 1). Common chickweed control was at least 99% while henbit control was at least 95% and tended to be less when Harmony Extra was applied in the fall compared to when it was applied in the spring.

Although wheat yields ranged from 85.3 to 112.6 bu/A, there were no statistical differences among the treatments. The variability in yield was believed to be attributed to problems encountered with nitrogen application.

Summary:

The results of this year's research tend to support those from the previous three years. Harmony Extra and Sencor provide good to excellent control of both common chickweed and henbit, regardless of timing of application.

Although control of common chickweed and henbit in the studies over the last four seasons was good to excellent, this seldom enhanced wheat yield. There were a few instances where controlling common chickweed increased wheat yields. In the few cases where herbicides increased yield, it appeared that fall applications tended to be more favorable than spring applications.

Table 1. Broadleaf Weed Control and Wheat Yield Following Fall and Spring Applications of Harmony Extra and Sencor. (UKREC 2004-2005)

<u>Chemicals</u>	<u>Rate</u>	<u>Application Timing</u>	<u>Weed Control (4/28/2005)</u>		<u>Wheat Yield (Bu/A)</u>
			<u>Chickweed (%)</u>	<u>Henbit (%)</u>	
Harmony Extra Nonionic Surfactant	0.3 oz/A 0.25% v/v	Fall	100 a	96 bc	85.3 a
Harmony Extra Nonionic Surfactant	0.5 oz/A 0.25% v/v	Fall	100 a	95 c	91.1 a
Harmony Extra Nonionic Surfactant	0.5 oz/A 0.25% v/v	Spring	100 a	98 abc	106.7 a
Sencor 75 DF	2 oz/A	Fall	99 a	100 a	112.6 a
Sencor 75 DF	4 oz/A	Fall	100 a	100 a	97.2 a
Sencor 75 DF	4 oz/A	Spring	100 a	99 ab	96.9 a
Sencor 75 DF	6 oz/A	Spring	100 a	100 a	97.0 a
Non-treated Check			0 b	0	109.7 a
LSD (0.05)			1	4	NS

Planting Date: October 22, 2004

Fall Application Date: December 4, 2004

Weed Ground Cover in Fall: 8%

Henbit Size in Fall: 0.5 " diameter

Chickweed Size in Fall: 0.5 " diameter

Wheat Size in Fall: 1 tiller and 5" tall

Spring Application Date: March 23, 2005

Weed Ground Cover in Spring: 24%

Henbit Size in Spring: 3" diameter

Chickweed Size in Spring: 4" diameter

Wheat Size in Spring: 5 tillers and 5" tall