

COMPARING MARESTAIL (HORSEWEED) CONTROL IN WHEAT AND FALLOW AREAS USING TILLAGE AND HARMONY EXTRA (UKREC 2006-2007)

James R. Martin, Charles R. Tutt, and Dottie Call
Department of Plant & Soil Sciences
University of Kentucky, Princeton, KY
PH: (270) 365-7541 Ext. 203; Email: james.martin@uky.edu

Introduction:

Problems with marestail (also known as horseweed) occur in double-cropped soybeans following wheat harvest, yet the severity of infestations and number of acres impacted is less compared with marestail in full-season soybeans.

This research was conducted to determine if tillage system and timing of application of Harmony Extra impact marestail control prior to planting double-cropped soybeans and to compare these to an environment similar to full season soybeans.

Methods:

The site chosen for this study was left fallow and marestail was allowed to mature and produce seed in 2006. A few scattered marestail plants were observed in the fall along the outside edges of the field, but none were noticed in the plot areas.

Wheat was planted in conventional and no-till seedbeds and compared with fallow areas to simulate an environment prior to full-season no-till soybean. The conventional tilled wheat blocks were disked twice prior to planting. Pioneer 25R35 was planted October 13 at a rate of 35 viable seed/ft². Harmony Extra at 0.5 oz/A was applied November 24 or March 27 in the wheat and fallow areas to determine if it contributes to marestail control. A non-treated check was

also included in each system.

An estimate of weed cover was used as a basis of weed infestation on November 14, 2006 and April 14, 2007.

The procedure involved using a 10 ft tape measure between the wheat rows or random sites in the fallow plots. The presence of a weed at each 1 foot increment on the tape represented 10%. For example a 60% infestation was noted when weeds were present at 6 of the 1 ft marks along the 10 ft tape. This was done at 2 random sites in each plot. Marestail density was recorded June 21 using a 1 ft quadrat at two random sites per plot. Because of the freeze damage in April affected wheat growth, consequently, wheat yields were not shown.

Results:

Henbit (*Lamium amplexicaule*) accounted for the majority of weeds present at the time of evaluation on November 6. The no-till wheat plots 43 to 47% infestation in the row middles compared with 20 to 27% infestation in the tilled plots. The fallow areas had 43 to 57% infestation.

The weeds present at the April 14 included henbit, including field pansy, (*Viola rafinesquii*) field pepperweed (*Lepidium campestre*), Carolina geranium (*Geranium carolinianum*), and giant ragweed (*Ambrosia trifida*).

Very little marestalk was present on November 6 or April 14. However, by June 21 marestalk was observed only in some the fallow plots. There were 32 marestalk plants/ft² where Harmony Extra was applied in the fall compared with only 4 plants/ft² where it was applied in the spring. The non-treated checks of the fallow plots had only 0.3 plants/ft².

The lack of marestalk in the wheat plots and only a few plants in the non-treated check plots indicates the vegetative cover limited emergence of marestalk. However, Harmony Extra appeared to control some of the vegetation in the fallow areas and provided a favorable environment for marestalk emergence.

It is interesting to note that a field of cover crop wheat adjacent to this study had a dense stand of marestalk. The cover crop wheat had an average head count of 34 heads/ft² compared with 72 heads/ft² in the wheat study.

Summary:

Having a good stand of wheat contributes to marestalk control. Poor stands or skips may provide for a favorable environment for marestalk to emergence and result in a problem in double-crop soybeans.

Based on these results, it is unclear how much if any Harmony Extra contributes to marestalk control in wheat. The presence of marestalk in the fallow plots treated with Harmony Extra was an indirect affect of the herbicide controlling other weeds and allowing for marestalk emergence to occur.

Weed Management System		Weed Infestation (%) ¹		Marestalk Density ² (Plants/Ft ²)
Crop/Tillage	Herbicide Timing	11/06/06	04/14/07	06/21/07
No-till Wheat	Harmony Extra (Fall)	43	2	0
	Harmony Extra (Fall)	43	12	0
	Check	47	53	0
Conventional Till Wheat	Harmony Extra (Fall)	20	2	0
	Harmony Extra (Fall)	23	17	0
	Check	27	47	0
Fallow	Harmony Extra (Fall)	50	57	32
	Harmony Extra (Fall)	57	37	4
	Check	43	83	0.3
LSD		14	16	7

¹ Weed cover is an estimate of percent ground cover between wheat rows or over entire areas of fallow plots. The November data were collected prior to applying Harmony Extra and involved mostly henbit. The April data were collected after Harmony Extra was applied and involved several weeds including field pansy, field pepperweed, henbit, Carolina geranium, and giant ragweed.

² Marestalk plants counted at two random sites per plot.