

EVALUATING MARESTAIL CONTROL WITH WHEAT HERBICIDES (2-YEAR SUMMARY)

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INTRODUCTION

Marestail (also known as horseweed) is an annual broadleaf weed that can emerge in wheat. While it may sometimes interfere with wheat harvest, the greatest concern is its impact on double-crop soybeans following wheat harvest. Marestail is especially difficult to control since most populations are tolerant to glyphosate.

Some herbicides used in the wheat crop are believed to control marestail, yet this has not been well documented by research. Since 2011, attempts have been to evaluate postemergence treatments applied in the fall or spring. The marestail infestation was too erratic in the 2011 study to obtain meaningful data. However, results in 2012 indicated some treatments improved marestail control.

OBJECTIVE

Continue to evaluate the efficacy of herbicides on managing marestail in wheat and expand the list of treatments to evaluate.

METHODS

This report covers the trials conducted over the last two growing seasons (2011-2012 & 2012-2013). Pioneer 25R32 was planted in mid-October for both trials at a low seeding rate of 17 plants/ft² in 2011 and 19 plants/ft² in 2012 in order to enhance emergence of marestail.

Timing of treatments and management practices are documented in footnotes of Tables 1 and 2. Marestail control was based on visual ratings April 18 and May 24 in the first trial and on reduction of plant numbers on June

10 in the second study. Wheat was harvested with a Wintersteiger plot combine.

RESULTS

The herbicide trial in 2011-2012 growing season had very few marestail in the harvest area of the plots, due to dry weather. However, there was marestail in the wide skip rows near the outside edge of plots to evaluate for efficacy. Harmony Extra applied alone at 0.9 oz/A provided 78% control of marestail (Table 1). The addition of 2,4-D and Clarity to Harmony Extra significantly improved marestail control. Spring applications of Huskie alone or in combination with other herbicides provided at least 94% control of marestail. Huskie is currently not registered in Kentucky. The label requires a minimum waiting period of 4 months after application before planting soybeans.

The marestail population in the 2012-2013 growing season was delayed in emerging; consequently, the evaluation was not done until prior to harvest. There were similar trends in both studies. Huskie applied in the spring at 13.5 oz/A provided superior control at 91%. Including other herbicides such as Harmony Extra did not enhance marestail control with Huskie. Treatments that provided 80 to 89% control of marestail included Valor applied at 2 oz/A at 7 days prior to planting; Metribuzin applied in the spring at 6 oz/A; and Harmony Extra plus Clarity and 2,4-D applied in the spring. Also marestail escapes in these treatments tended to be smaller and possibly more prone to control with a burndown herbicide after wheat harvest.

SUMMARY

The results of these trials indicate there are a number of wheat herbicides that have activity on marestalk, although none of them provided 100% control. Some summary points are as follows:

- Huskie appeared to be most consistent in managing marestalk, however, some drawbacks with Huskie is that it is not labeled in Kentucky and would not be suitable for spring applications, since its label requires a minimum of 4 months after application to plant soybean.
- Valor at 2 oz/A applied 7 days before planting no-till wheat seemed to do better this season compared to last season when winter temperatures were warm and more favorable for herbicide dissipation.
- The addition of Clarity and 2,4-D with spring applications of Harmony Extra tended to enhance the level of marestalk control, but the rates used in these studies raises concern over injury to wheat.

- Metribuzin applied in the spring at 6 oz/A appeared to be effective in controlling marestalk. The lack of information on susceptibility of wheat to metribuzin is a limitation on using this herbicide, especially at the 6 oz/A rate.

- Pyroxasulfone products, such as Anthem, Fierce, and Zidua, are not registered for use in wheat; yet they were included in this year's research to determine their potential for controlling marestalk. The fact Fierce contains flumioxazin (Valor) was a benefit over the other two pyroxasulfone products in managing marestalk.

- Finesse and Peak did not provide acceptable marestalk control. Finesse is not labeled to control marestalk. The 0.5 oz/A rate of Peak that is used in wheat is labeled only for partial control of marestalk.

**TABLE 1. IMPACT OF HERBICIDES ON MARESTAIL CONTROL AND WHEAT YIELD
(UKREC 2011-2012)**

HERBICIDE ¹	TIMING ²	Marestail Control		Wheat
		04-18-2011 (%)	05-24-2012 (%)	Yield (Bu/A)
Valor (2 oz/A)	Epp	68	73	101
Valor (2 oz/A)	Ep (wheat 2 -4 Lf)	68	65	86.6
Finesse (0.5 oz/A)	Pre	65	68	95.9
Finesse (0.4 oz/A)	Fall Post	65	75	90.6
Peak (0.5 oz/A)	Fall Post	63	63	98.1
Harmony Extra (0.9 oz/A)	Spr Post	83	78	94.3
Harmony Extra (0.9 oz/A) Clarity (4 oz/A) 2,4-D Ester (0.75 pt/A)	Spr Post	94	95	92.7
Huskie (13.5 oz/A)	Spr Post	95	96	93.8
Huskie (15 oz/A)	Spr Post	99	99	99.3
Huskie (13.5 oz/A) Harmony Extra (0.9 oz/A)	Spr Post	99	99	97.5
Huskie (13.5 oz/A) Clarity (4 oz/A)	Spr Post	98	99	87
Huskie (13.5 oz/A) Osprey (4.75 oz/A)	Spr Post	95	94	89.8
Non-Treated		0	0	85
LSD _(0.05)		10	10	NS

¹ Additives were included according to herbicide label.

² 10-10-11: Applied paraquat over entire study for preplant burndown.

10-11-11: Epp

10-17-11: Planted wheat & applied Pre

11-17-11: Ep (2-4 Lf Wheat)

11-17-11: Fall Post

03-19-12: Spr Post

TABLE 2. IMPACT OF HERBICIDES ON MARESTAIL CONTROL, PLANT HEIGHT, AND WHEAT YIELD (UKREC 2012-2013)

TREATMENT	TIMING*	MARESTAIL CONTROL (%)**	MARESTAIL HEIGHT (Inches)***	WHEAT YIELD (Bu/A)
Valor (2 oz/A) Crop Oil Conc. (0.25%)	EPP 1 Wk	80	2.6	83.7
Anthem (6.5 oz/A)	WH 2-4 Lf	26	5.1	88.9
Fierce (3 oz/A)	WH 2-4 Lf	79	4	96.3
Zidua (1.5 oz/A)	WH 2-4 Lf	30	4	86.6
Valor (2 oz/A)	WH 2-4 Lf	74	3	94.2
Finesse (0.5 oz/A) Nis (0.25%)	PRE	22	5.3	97.1
Finesse 0.4 oz/A Nis (0.25%)	FALL POST	29	3.9	95
Peak (0.5 oz/A) Nis 0.5% Liquid N 28% (2 qt/A)	FALL POST	46	3.3	91.1
Harmony Extra (0.9 oz/A) Nis (0.5%)	FALL POST	43	3	89.5
Harmony Extra (0.9 oz/A) Nis (0.5%)	SPR POST	58	2.9	79.8
Harmony Extra (0.9 oz/A) Clarity (4 oz/A) 2,4-D (0.75 pt/A)	SPR POST	81	1.7	75.2
Huskie (13.5 oz/A) Nis (0.5%) Liquid N 28% (2 qt/A)	SPR POST	91	1.1	87.1
Huskie (15 oz/A) Nis (0.5%) Liquid N 28% (2 qt/A)	SPR POST	81	1.4	88.7
Huskie (13.5 oz/A) Harmony Extra (0.9 oz/A) Nis (0.5%) Liquid N 28% (2 qt/A)	SPR POST	86	2	84.5
Metribuzin (6 oz/A)	SPR POST	89	1	86.9
LSD		26	1.5	10.4

* EPP 1 WK: 10-11-2012

PLANTED: 10-19-2012

PRE: 10-19-2012

WH 2-4 LF: 11-08-2012

FALL POST: 11-30-2012

N FIRST SPLIT (40 units/A): 02-18-2013

N SECOND SPLIT (80 Units): 03-14-2013

WARRIOR II: 03-14-2013

SPR POST: 04-05-2013

WARRIOR II (1.5 oz/A)INSECTICIDE & PROSARO FUNGICIDE (7oz/A): 05-13-2013

** Control based on reduction of marestail population reported on 06-10-2013.

*** Heights reported on 06-10-2013