

V10206 Evaluation for Marestalk (*Conyza canadensis*) and Total Vegetation Control

Introduction

Noncrop vegetation management occasionally requires total vegetation management and problematic plant species, such as marestalk (*Conyza canadensis*), thrive in the environment created by total vegetation management. The potential for glyphosate and ALS resistant marestalk plants to exist in these areas is increasing due to the repeated use of glyphosate and ALS inhibiting herbicides in total vegetation management. Control of marestalk is a challenge as it has an extended period when it can germinate and grow. Successful control programs need a combination of foliar and long-term pre-emergence residual herbicides. New products (V10206 and V10233) from Valent were evaluated for total vegetation and marestalk control.

Materials and Methods

Thirteen treatments were installed in late spring 2009 in a randomized complete block design with 4 replications beside guardrails in McLean County, near Livermore, KY. All treatments included Glyphomax Plus @ 2 qt/A and Activator 90 @ 0.25% v/v. Plots, measuring 5 ft x 8 ft, were treated at 40 GPA on May 18, 2009 using a CO₂ powered sprayer. The predominant vegetation was a dense stand of marestalk. The height ranged from 4 to 12 inches with an average of 10 inches. The number of marestalk plants were counted at 0, 25 (6/12/2009), 171 (11/5/2009) days after treatment (DAT). Evaluation of % bareground was done 25 DAT. Data were analyzed using ARM software and treatment means were compared using Fisher's LSD at $p = 0.05$.

Results

The initial density of marestalk plants ranged from means of 37 to 69 plants per 40 ft² plot (Table 1). All treatments were effective at killing the emerged plants with few survivors (0.3 to 0.5 plants per plot) 25 DAT. The survivors were in plots treated with the lower rates of Payload (flumioxazin), V10206, and V10233 (flumioxazin + pyroxasulfone). The lower rates for Payload were lower than the recommended label rates of 8 to 12 oz/acre. Payload is most effective pre-emergence on marestalk. All treatments except the control, which only had glyphosate applied without any soil residual activity, were effective at suppressing further marestalk germination/emergence. All treatments with soil residual activity provided better control of other species than the control, when looking at the % bareground data 25 DAT.

V10233 has been labeled as Fierce for the corn/soybean market. Some of the surviving plants may be resistant to glyphosate and using different herbicide modes of action (MOA) is important for resistance management. Flumioxazin has a PPG Oxidase Inhibition MOA and should be considered for inclusion in total vegetation control programs.

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Table 1. Treatments and Results for Marestalk and Total Vegetation Control Trial

Trt. No.	Product Name	Rate per Acre	Initial No. Marestalk Plants per Plot	No. Marestalk Plants per Plot	% Bareground		No. Marestalk Plants per Plot
				25 DAT	25 DAT	171 DAT	
1	Payload	12 OZ	45.8 <i>bc</i>	0.0	100.0	<i>a</i>	0.0 <i>b</i>
2	Payload	8 OZ	36.8 <i>c</i>	0.0	99.0	<i>ab</i>	0.0 <i>b</i>
3	Payload	6 OZ	60.8 <i>ab</i>	0.3	99.0	<i>ab</i>	0.3 <i>b</i>
4	Payload	4 OZ	54.8 <i>abc</i>	0.5	97.8	<i>b</i>	0.5 <i>b</i>
5	V10206	5.8 OZ	55.3 <i>abc</i>	0.3	99.5	<i>ab</i>	0.0 <i>b</i>
6	V10206	4.8 OZ	42.8 <i>bc</i>	0.0	99.3	<i>ab</i>	0.0 <i>b</i>
7	V10206	3.5 OZ	63.0 <i>ab</i>	0.5	98.5	<i>ab</i>	0.5 <i>b</i>
8	V10233	7 OZ	49.3 <i>abc</i>	0.5	99.0	<i>ab</i>	0.5 <i>b</i>
9	V10233	10 OZ	60.0 <i>ab</i>	0.0	99.5	<i>ab</i>	0.0 <i>b</i>
10	V10233	12 OZ	48.5 <i>abc</i>	0.0	100.0	<i>a</i>	0.0 <i>b</i>
11	Milestone VM Journey	7 FL OZ 32 FL OZ	68.8 <i>a</i>	0.0	100.0	<i>a</i>	0.0 <i>b</i>
12	Hyvar X	6 LB	46.0 <i>bc</i>	0.0	100.0	<i>a</i>	0.0 <i>b</i>
13	Control		57.3 <i>abc</i>	0.3	90.0	<i>c</i>	2.5 <i>a</i>

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All treatments included Glyphomax Plus @ 2 qt/A and Activator 90 @ 0.25% v/v.

* Means within column followed by the same letter are not different according to Fisher's Protected LSD at $P < 0.05$.

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