

Tank Mixtures of Vida for Late Summer Weed Control in Fallow

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Summary

Kochia control at soon after application was best when Vida (pyraflufen) was tank mixed with glyphosate, 2,4-D amine, and/or dicamba. However, no Vida treatment controlled kochia more than 60% one month after treatment. Treatments containing glyphosate, 2,4-D, and/or dicamba without Vida did not control kochia more than 33% during the first month. Similarly, Russian thistle control was best regardless of evaluation date when Vida was applied alone or tank mixed with another herbicide. Vida treatments provided 90 to 94% Russian thistle control one month after treatment. Treatments without Vida controlled Russian thistle no more than 63%.

Introduction

Previous studies have shown that adding glyphosate, 2,4-D, or dicamba could ameliorate Vida's weakness of rapid tissue burn without significant translocation. It was unknown if such tank mixes could control older, larger weeds later in the season. Therefore, it was the objective of this study to compare tank mix Vida with glyphosate, 2,4-D, and/or dicamba for late season fallow weed control.

Experimental Procedures

An experiment at the Kansas State University Southwest Research-Extension Center near Garden City, KS, evaluated Vida alone and in tank mixtures for late summer weed control in fallow. All herbicides were applied using a tractor-mounted, compressed-CO₂ sprayer calibrated to deliver 20 GPA at 30 psi and 4.2 mph. Application, environmental, and weed information is given in Table 1. The experiment was conducted on a Beeler silt loam soil with pH 7.6 and 2.4% organic matter. Plots were 10 × 35 feet and arranged in a randomized complete block with four replications. Visual control of kochia and Russian thistle was determined on September 15 and 29, and October 12, 2017, which corresponded to 8, 22, and 35 days after herbicide treatment (DAT), respectively.

Results and Discussion

Kochia control at 8 DAT was best when Vida was tank mixed with glyphosate, 2,4-D amine, and/or dicamba (Table 2), and this trend continued through 35 DAT. However, no Vida treatment controlled kochia more than 60% at 35 DAT. Treatments containing glyphosate, 2,4-D, and/or dicamba without Vida did not control kochia more than 33% at 35 DAT. Similarly, Russian thistle control was best regardless of evalua-

tion date when Vida was applied alone or tank mixed with another herbicide, and Vida treatments provided 90 to 94% Russian thistle control at 35 DAT. Treatments without Vida controlled Russian thistle no more than 63%.

Table 1. Application and weed information

Application date	September 7, 2017
Air temperature (°F)	62
Relative humidity (%)	53
Soil temperature (°F)	64
Wind speed (mph)	5
Wind direction	South
Soil moisture	Very dry
Kochia:	
Height (inch)	8 to 15
Density (plants/ft ²)	3.2
Russian thistle:	
Height (inch)	8 to 14
Density (plants/ft ²)	4.6

Table 2. Vida alone and in tank mixtures for late summer weed control in fallow

Treatment ^a	Rate	Kochia			Russian thistle		
		8 DAT ^b	22 DAT	35 DAT	8 DAT	22 DAT	35 DAT
		----- % Visual -----					
Untreated	---	0	0	0	0	0	0
Vida	2.0	30	53	48	50	85	90
COC	1.0%						
AMS	2.0%						
Vida	2.0	35	55	60	53	85	90
Glyphosate	22						
AMS	2%						
Vida	2.0	35	50	55	48	91	91
2,4-D amine	4.0						
COC	1.0%						
AMS	2.0%						
Vida	2.0	33	58	58	50	91	94
Glyphosate	22						
2,4-D amine	4.0						
AMS	2%						
Glyphosate	22	18	28	30	20	53	55
AMS	2.0%						
Glyphosate	22	23	33	33	28	55	63
2,4-D amine	4.0						
AMS	2.0%						
2,4-D amine	4.0	18	28	25	23	33	30
AMS	2.0%						
Vida	2.0	33	53	58	50	95	94
Dicamba	4.0						
COC	1.0%						
AMS	2.0%						
Vida	2.0	38	55	55	53	89	91
Glyphosate	22						
Dicamba	4.0						
AMS	2.0%						
Dicamba	4.0	15	28	28	25	35	30
AMS	2.0%						
Dicamba	4.0	23	33	33	30	55	55
Glyphosate	22						
AMS	2.0%						
LSD (0.05)		7	9	10	7	7	8

^a AMS = ammonium sulfate. COC = crop oil concentrate.

^b DAT = days after treatment. Weed control rating were determined on September 15, September 29, and October 12, 2017.



Figure 1. Untreated control.



Figure 2. Vida 2.0 oz/a plus crop oil concentrate 1% and ammonium sulfate 2%, 26 days after treatment.



Figure 3. Vida 2.0 oz/a plus glyphosate 22 oz/a and ammonium sulfate 2%, 26 days after treatment.



Figure 4. Glyphosate 22 oz/a plus ammonium sulfate 2%, 26 days after treatment.



Figure 5. Dicamba 4.0 oz/a plus ammonium sulfate 2%, 26 days after treatment.



Figure 6. Dicamba 4.0 oz/a plus glyphosate 22 oz/a and ammonium sulfate 2%, 26 days after treatment.