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Assure II Alone and with Tacoma and Classic for Efficacy in Fallow

R.S. Currie and P.W. Geier

Summary

The objective of this trial was to compare Assure II (quizalofop) at two rates with or without tank mix partners for grass control in fallow. Assure II at either rate alone provided similar control of volunteer corn and barley. Corn control was 90% or more regardless of rating date with all herbicides except Assure II at 8.0 oz/a plus Classic (chlorimuron) at 42 days after treatment (DAT). Tacoma (fenoxaprop) at 3.5 or 5.4 oz/a added to Assure II at 8.0 oz/a improved barley control later in the season.

Introduction

Weed control, including volunteer crops, is important during the fallow period between crops. With the advent of herbicide-resistant crops such as corn, traditional herbicides such as glyphosate may not be effective. The objective of this study was to evaluate Assure II alone or with tank mixtures for grass control in fallow.

Experimental Procedures

An experiment was conducted to compare Assure II alone and in tank mixtures for grass control in fallow. All herbicides were applied postemergence using a tractor-mounted, compressed CO₂ sprayer delivering 19.4 gpa at 30 psi and 4.1 mph. Application, environmental, and weed information are shown in Table 1. Plots were 10 by 35 feet and arranged in a randomized complete block design with four replications. Soil was a Ulysses silt loam with 1.8% organic matter and pH of 8.1. Visual weed control estimates were determined on June 11, June 25, and July 9, 2021. These dates were 14, 28, and 42 DAT.

Results and Discussion

Volunteer corn and volunteer barley were the only grass weeds emerged at the time of herbicide application and the only weeds evaluated. Increasing the rate of Assure II from 6.0 to 8.0 oz/a did not improve volunteer corn or barley at any rating date (Table 2). The addition of Tacoma or Tacoma plus Classic at the higher rates improved volunteer corn control compared to Assure II alone at 14 DAT. By 42 DAT, only the treatment of Assure II plus Classic provided less than 90% corn control. All herbicides provided 90% or more volunteer barley control. The addition of Tacoma, at any rate, increased barley control compared to Assure II at 8.0 oz/a alone at 14 DAT. The addition of Tacoma at 3.5 and 5.4 oz/a also increased barley control at 28 and 42 DAT.

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Table 1. Application, environmental, and weed data for the quizalofop, fenoxaprop, and chlorimuron fallow study

Application date	May 28, 2021
Air temperature (°F)	55
Relative humidity	66
Soil temperature (°F)	60
Wind speed (mph)	1 to 4
Wind direction	East
Soil moisture	Good
Volunteer corn	
Height (inches)	1 to 3
Density (plants/ft ²)	2
Volunteer barley	
Height (inches)	2 to 5
Density (plants/ft ²)	20

Table 2. Grass weed control with quizalofop alone and in mixtures in fallow

Treatment ¹	Rate	Volunteer corn			Volunteer barley		
		14 DAT ²	28 DAT	42 DAT	14 DAT	28 DAT	42 DAT
	oz/a	----- % Visual -----					
Assure II	6.0	86	98	98	95	95	94
COC	1.0%						
Assure II	6.0	92	98	96	98	99	98
Tacoma	2.6						
COC	1.0%						
Assure II	6.0	93	99	98	100	98	96
Tacoma	3.3						
COC	1.0%						
Assure II	6.0	94	98	99	100	99	98
Tacoma	4.0						
COC	1.0%						
Assure II	8.0	91	96	91	91	95	90
COC	1.0%						
Assure II	8.0	97	98	95	100	100	99
Tacoma	3.5						
COC	1.0%						
Assure II	8.0	97	100	100	100	98	96
Tacoma	4.4						
COC	1.0%						
Assure II	8.0	98	98	98	100	100	99
Tacoma	5.4						
COC	1.0%						
Assure II	8.0	83	88	85	98	100	100
Classic	0.5						
COC	1.0%						
Assure II	8.0	88	92	90	100	100	100
Tacoma	3.5						
Classic	0.5						
COC	1.0%						
Assure II	8.0	95	95	94	100	100	100
Tacoma	4.4						
Classic	0.5						
COC	1.0%						
Assure II	8.0	93	93	90	100	99	98
Tacoma	5.4						
Classic	0.5						
COC	1.0%						
LSD (0.05)		6	6	7	5	4	6

¹ COC = crop oil concentrate.² DAT = days after treatment.



Figure 1. Untreated control.



Figure 2. Assure II 6.0 oz/a applied postemergence. Photo taken 14 days after treatment.



Figure 3. Assure II 8.0 oz/a applied postemergence. Photo taken 14 days after treatment.



Figure 4. Assure II 8.0 oz/a plus Tacoma 3.5 oz/a applied postemergence. Photo taken 14 days after treatment.



Figure 5. Assure II 8.0 oz/a plus Classic 0.5 oz/a applied postemergence. Photo taken 14 days after treatment.