

Kansas Agricultural Experiment Station Research Reports

Volume 8
Issue 8 *Western Kansas Agricultural Research*

Article 11

2022

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Recommended Citation

Currie, R. S. and Geier, P. W. (2022) "Industrial Weed Control with Plainview, Esplanade, and Method Application Timings," *Kansas Agricultural Experiment Station Research Reports*: Vol. 8: Iss. 8. <https://doi.org/10.4148/2378-5977.8339>

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Industrial Weed Control with Plainview, Esplanade, and Method Application Timings

R.S. Currie and P.W. Geier

Summary

The objective of this trial was to compare Plainview, Esplanade, and Method at three applications for season-long weed control in noncropland. Glyphosate alone provided no residual weed control. Plainview (indaziflam/aminocyclopyrachlor/imazapyr) at 64 oz/a applied in the early or late fall controlled kochia similarly to Krovar (bromacil/diuron) late in the season. Either rate of Plainview, as well as the tank mixture of Esplanade (aminocyclopyrachlor) plus Method (indaziflam), provided complete woollyleaf bursage control regardless of application timing. No treatment of Krovar controlled woollyleaf bursage more than 60%.

Introduction

Industrial sites such as railroads, electrical utilities, and pipelines often use nonselective, persistent herbicides to maintain total vegetative control. Some of the key benefits of total vegetative control include improved site appearance, minimizing fire hazards, and facilitating visual inspection of equipment. The objective of this trial was to compare Plainview, Esplanade, and Method at three applications for season-long weed control in noncropland.

Experimental Procedures

An experiment was conducted to evaluate nonselective herbicides at three application timings for noncropland weed control. All herbicides were applied 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 May 12, August 13, and October 11, 2021. These dates were approximately 2, 5, and 7 months after the early spring applications (MA-C).

Results and Discussion

Glyphosate provided no residual kochia or woollyleaf bursage control regardless of application time (Table 2). All other herbicides controlled kochia 100% at 2 MA-C. Kochia control at 5 MA-C remained high when Plainview was applied in early fall or late fall, and with Krovar at any application timing. These same treatments controlled kochia 84% or more at 7 MA-C. Woollyleaf bursage control was complete with Plainview or Esplanade plus Method regardless of application timing or rating date.

Conversely, no treatment of Krovar provided more than 60% woollyleaf bursage control.

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned. Persons using such products assume responsibility for their use in accordance with current label directions of the manufacturer.

Table 1. Application, environmental, and weed data for the industrial weed control study

Application timing	Early fall	Late fall	Early spring
Application date	October 8, 2020	December 9, 2020	March 11, 2021
Air temperature (°F)	79	71	55
Relative humidity	28	14	30
Soil temperature (°F)	64	38	53
Wind speed (mph)	1 to 4	0 to 3	4 to 8
Wind direction	South	North-northwest	East-northeast
Soil moisture	Dry	Dry	Dry
Kochia			
Height (inches)	---	---	0.5
Density (plants/ft ²)	0	0	1
Woollyleaf bursage			
Height (inches)	3 to 6	2 to 4	---
Density (plants/ft ²)	1	1	0

Table 2. Efficacy in the industrial weed control study

Treatment	Rate, oz/a	Timing	Kochia			Woollyleaf bursage		
			2 MA-C ¹	5 MA-C	7 MA-C	2 MA-C	5 MA-C	7 MA-C
Glyphosate	64	Early Fall	0	0	0	0	0	0
NIS	0.25%	Early Fall						
Plainview SC	48	Early Fall	100	90	84	100	100	100
Glyphosate	64	Early Fall						
Nonionic surfactant	0.25%	Early Fall						
Plainview SC	64	Early Fall	100	90	88	100	100	100
Glyphosate	64	Early Fall						
Nonionic surfactant	0.25%	Early Fall						
Krovar DF	128	Early Fall	100	100	100	53	60	57
Glyphosate	2.5	Early Fall						
Nonionic surfactant	0.25%	Early Fall						
Esplanade	5	Early Fall	100	84	79	100	100	100
Method 240 SL	12	Early Fall						
Glyphosate	2.5	Early Fall						
Nonionic surfactant	0.25%	Early Fall						
Glyphosate	2.5	Late Fall	0	0	0	0	0	0
Nonionic surfactant	0.25%	Late Fall						
Plainview SC	48	Late Fall	100	85	81	100	100	100
Glyphosate	64	Late Fall						
Nonionic surfactant	0.25%	Late Fall						
Plainview SC	64	Late Fall	100	91	90	100	100	100
Glyphosate	64	Late Fall						
Nonionic surfactant	0.25%	Late Fall						
Krovar DF	128	Late Fall	100	100	100	50	60	60
Glyphosate	2.5	Late Fall						
Nonionic surfactant	0.25%	Late Fall						
Esplanade	5	Late Fall	100	68	63	100	100	100
Method 240 SL	12	Late Fall						
Glyphosate	2.5	Late Fall						
Nonionic surfactant	0.25%	Late Fall						
Glyphosate	2.5	Early Spring	0	0	0	0	0	0
Nonionic surfactant	0.25%	Early Spring						
Plainview SC	48	Early Spring	98	68	63	100	100	100
Glyphosate	64	Early Spring						
Nonionic surfactant	0.25%	Early Spring						
Plainview SC	64	Early Spring	100	78	70	100	100	100
Glyphosate	64	Early Spring						
Nonionic surfactant	0.25%	Early Spring						
Krovar DF	128	Early Spring	100	100	100	53	58	55
Glyphosate	2.5	Early Spring						
Nonionic surfactant	0.25%	Early Spring						
Esplanade	5	Early Spring	100	63	55	100	100	100
Method 240 SL	12	Early Spring						
Glyphosate	2.5	Early Spring						
Nonionic surfactant	0.25%	Early Spring						
LSD (0.05)			2	12	14	6	4	3

¹ MA-C = months after the early spring applications.



Figure 1. Glyphosate at 64 oz/a applied late fall. Photo taken 232 days after application.



Figure 2. Plainview at 48 oz/a plus glyphosate 64 oz/a applied late fall. Photo taken 232 days after application.



Figure 3. Plainview at 64 oz/a plus glyphosate 64 oz/a applied late fall. Photo taken 232 days after application.



Figure 4. Krovar 128 oz/a plus glyphosate 64 oz/a applied late fall. Photo taken 232 days after application.



Figure 5. Esplanade at 5 oz/a plus Method 12 oz/a and glyphosate 64 oz/a applied late fall. Photo taken 232 days after application.