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## Reviton and Vida with Tank Mixtures for Fallow Weed Control

*R.S. Currie and P.W. Geier*

### Summary

Reviton (tiafenacil) and Vida (pyraflufen) are two novel herbicides that are being investigated to control herbicide-resistant weeds in fallow. Reviton was generally more effective at controlling glyphosate-resistant kochia than Vida. Kochia control with Vida improved with the addition of 2,4-D. However, no treatment evaluated provided more than 90% kochia control during this study.

### Introduction

Glyphosate-resistant kochia has become a major weed infesting fallow and crops in the Great Plains. Consequently, evaluation of new and existing herbicides for control of this species is needed. The objective of this research was to evaluate Reviton and Vida alone and in tank mixtures for kochia control in fallow.

### Experimental Procedures

An experiment compared Reviton and Vida, each tank mixed with glyphosate and/or 2,4-D, for kochia control in fallow. All herbicides were applied using a tractor-mounted, compressed CO<sub>2</sub> sprayer delivering 19.4 gpa at 4.1 mph and 30 psi (Table 1). Soil at Garden City was a Beeler silt loam with 2.2% organic matter and pH of 7.9. Plots were 10 by 30 feet and arranged in a randomized complete block replicated four times. Visual weed control was determined on May 5, May 12, May 20, and May 26, 2022. These dates were 7, 14, 22, and 28 days after treatment (DAT), respectively.

### Results and Discussion

Glyphosate alone provided no kochia control at any rating date (Table 2). The addition of Vida increased kochia control 38 to 58% compared to glyphosate alone, whereas Reviton increased control 54 to 89%. The addition of 2,4-D increased kochia control with Vida but not with Reviton. Generally, Reviton was more effective on kochia than Vida regardless of tank mix partner. However, no treatment provided as much as 90% kochia control, and control began to decline after 22 DAT.

### Acknowledgments

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*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 plant information for the fallow experiment**

| <b>Application timing</b>       | <b>Early postemergence</b> |
|---------------------------------|----------------------------|
| Application date                | April 28, 2022             |
| Air temperature, °F             | 72                         |
| Relative humidity, %            | 65                         |
| Soil temperature, °F            | 60                         |
| Wind speed, mph                 | 7 to 10                    |
| Wind direction                  | Southwest                  |
| Soil moisture                   | Dry                        |
| Kochia                          |                            |
| Height, inches                  | 0.5 to 1.5                 |
| Density, plants/ft <sup>2</sup> | 10                         |

**Table 2. Kochia control with Reviton and Vida in fallow**

| Treatment            | Rate | 7 DAT <sup>1</sup> | 14 DAT | 22 DAT | 28 DAT |
|----------------------|------|--------------------|--------|--------|--------|
|                      | oz/a | % Visual           |        |        |        |
| Vida                 | 2.0  | 38                 | 48     | 58     | 50     |
| Glyphosate           | 24   |                    |        |        |        |
| Ammonium sulfate     | 2.0% |                    |        |        |        |
| Glyphosate           | 24   | 0                  | 0      | 0      | 0      |
| Ammonium sulfate     | 2.0% |                    |        |        |        |
| Vida                 | 2.0  | 53                 | 58     | 73     | 63     |
| 2,4-D amine          | 16   |                    |        |        |        |
| Crop oil concentrate | 1.0% |                    |        |        |        |
| Ammonium sulfate     | 2.0% |                    |        |        |        |
| Vida                 | 2.0  | 50                 | 70     | 80     | 68     |
| Glyphosate           | 24   |                    |        |        |        |
| 2,4-D amine          | 16   |                    |        |        |        |
| Ammonium sulfate     | 2.0% |                    |        |        |        |
| Reviton              | 2.0  | 65                 | 75     | 84     | 79     |
| Crop oil concentrate | 1.0% |                    |        |        |        |
| Ammonium sulfate     | 2.0% |                    |        |        |        |
| Reviton              | 1.0  | 70                 | 78     | 85     | 75     |
| 2,4-D amine          | 16   |                    |        |        |        |
| Crop oil concentrate | 1.0% |                    |        |        |        |
| Ammonium sulfate     | 2.0% |                    |        |        |        |
| Reviton              | 1.0  | 73                 | 79     | 89     | 86     |
| Glyphosate           | 24   |                    |        |        |        |
| Crop oil concentrate | 1.0% |                    |        |        |        |
| Ammonium sulfate     | 2.0% |                    |        |        |        |
| Reviton              | 1.0  | 63                 | 75     | 84     | 78     |
| Glyphosate           | 24   |                    |        |        |        |
| 2,4-D amine          | 16   |                    |        |        |        |
| Ammonium sulfate     | 2.0% |                    |        |        |        |
| LSD (0.05)           |      | 9                  | 7      | 8      | 9      |

<sup>1</sup> DAT = days after treatment.