



Kochia Burndown Comparison in Nebraska

Trial Objective

- This trial compared burndown control of glyphosate-resistant kochia using XtendiMax[®] herbicide with VaporGrip[®] Technology plus Roundup PowerMAX[®] herbicide, Enlist One[®] herbicide with Colex-D[®] Technology plus Roundup PowerMAX[®] herbicide, or Enlist Duo[®] herbicide with Colex-D[®] Technology.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Application Date	Kochia Height at Application	Nozzle	Spray Volume (gallons/acre)
Gothenburg, NE	Silty loam	Soybean	Conventional	5/15/19	4 inches	TTI 110015	15

- This trial was placed in an area that was planted to corn because kochia pressure was extremely high. Treatment 2, 5, and 6 are not labeled for corn and are meant for demonstration of kochia control prior to soybeans.
- Plots were 10 feet wide by 30 feet long, and each treatment was replicated three times.

Table 1. Herbicide treatments and use rate per acre.

Treatment	Herbicide	Use Rate per Acre
1	XtendiMax [®] herbicide with VaporGrip [®] Technology* Roundup PowerMAX [®] herbicide	22 fl oz 32 fl oz
2**	XtendiMax with VaporGrip Technology Roundup PowerMAX herbicide	44 fl oz 32 fl oz
3	Enlist One [®] Herbicide with Colex-D [®] Technology Roundup PowerMAX herbicide	24 fl oz 32 fl oz
4	Enlist One [®] Herbicide with Colex-D [®] Technology Roundup PowerMAX herbicide	32 fl oz 32 fl oz
5**	Enlist Duo [®] Herbicide with Colex-D [®] Technology	64 fl oz
6**	Enlist Duo [®] herbicide with Colex-D [®] Technology	76 fl oz

*All treatments containing XtendiMax[®] herbicide with VaporGrip[®] Technology included INTACT[™] drift-reduction agent at 0.5% v/v.
**Treatment 2, 5, and 6 are not labeled treatments for corn and are meant to demonstrate kochia control in soybeans.

Table 2. Rainfall

Date	Rainfall (Inches)	Date	Rainfall (Inches)
5/16	0.13	5/27	2.1
5/17	0.78	5/28	0.2
5/20	0.4	6/8	1.66
5/21	1.8	6/11	0.25
5/23	0.58	6/13	0.22



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Understanding the Results

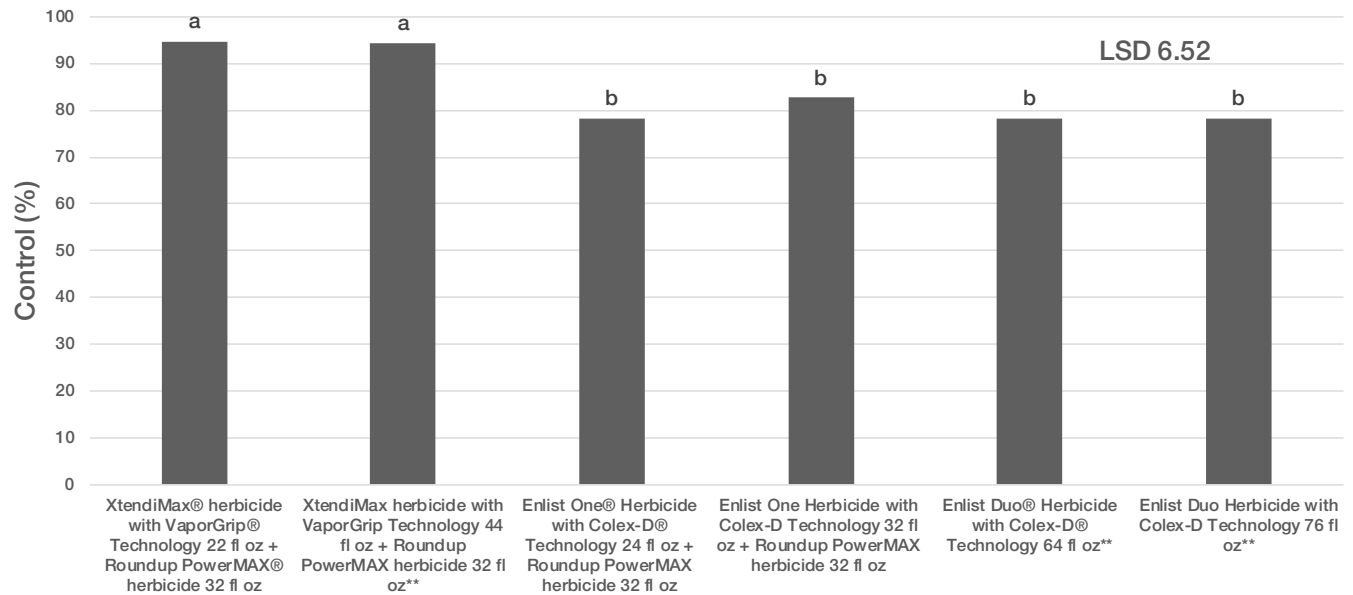


Figure 1. Kochia control 14 days after the application. Different letters above the bars indicate significant differences (p -value <0.001)*All treatments containing XtendiMax® herbicide with VaporGrip® Technology included INTACT™ drift-reduction agent at 0.5% v/v. Treatment 2, 5, and 6 are not labeled treatments for corn, they are meant to demonstrate kochia control in soybeans.

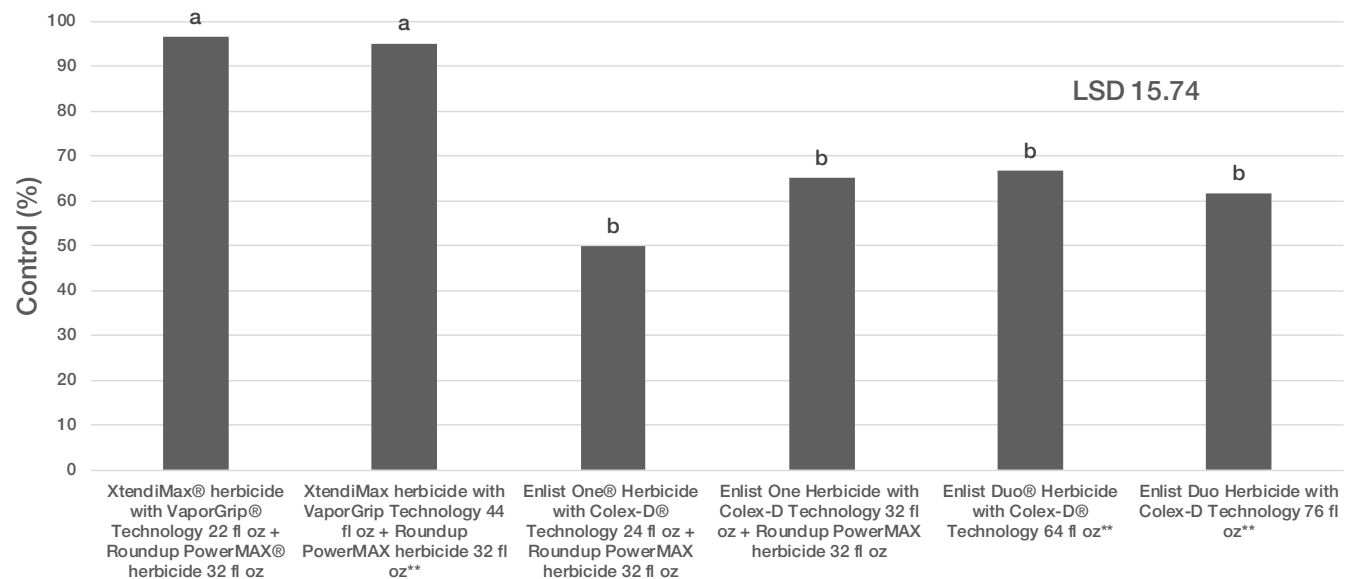


Figure 2. Kochia control 28 days after the application. Different letters above the bars indicate significant differences. *All treatments containing XtendiMax® herbicide with VaporGrip® Technology included INTACT™ drift-reduction agent at 0.5% v/v. Treatment 2, 5, and 6 are not labeled treatments for corn, they are meant to demonstrate kochia control in soybeans.



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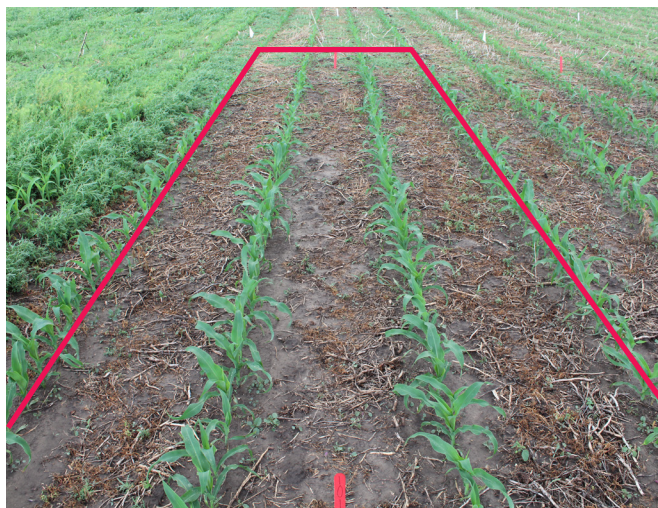


Figure 3. Weed control resulting from XtendiMax[®] herbicide with VaporGrip[®] Technology at 22 fl oz/acre plus Roundup PowerMAX[®] herbicide at 32 fl oz/acre with INTACT[™] drift-reduction agent at 0.5% v/v 24 days after application.



Figure 4. Close-up of the plot in Figure 3: XtendiMax[®] herbicide with VaporGrip[®] Technology at 22 fl oz/acre plus Roundup PowerMAX[®] herbicide at 32 fl oz/acre with INTACT[™] drift-reduction agent at 0.5% v/v at 24 days after application. This photo highlights the foliar and residual control of kochia as compared to Figure 6 and Figure 8.



Figure 5. Weed control resulting from Enlist One[®] Herbicide with Colex-D[®] Technology at 32 fl oz/acre plus Roundup PowerMAX[®] herbicide at 32 fl oz/acre 24 days after application.



Figure 6. Close-up of the plot in Figure 5: Enlist One[®] Herbicide with Colex-D[®] Technology at 32 fl oz/acre plus Roundup PowerMAX[®] herbicide at 32 fl oz/acre at 24 days after application. This photo highlights lower post emergence control and higher weed emergence due to lack of soil activity compared to Figure 4.



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Figure 7. Weed control resulting from Enlist Duo® Herbicide with Colex-D® Technology at 76 fl oz/ acre 24 days after application. This is not a labeled treatment for corn, it is meant to demonstrate kochia control in soybeans.



Figure 8. Close-up of the plot in Figure 7: Enlist Duo® Herbicide with Colex-D® Technology at 76 fl oz/acre at 24 days after application. This is not a labeled treatment for corn, it is meant to demonstrate kochia control in soybeans.

- At 14 days after application, kochia control was 94% for both treatments containing XtendiMax® herbicide with VaporGrip® Technology. Control did not exceed 82% using Enlist One® Herbicide with Colex-D® Technology or 78% using Enlist Duo® Herbicide with Colex-D® Technology for this trial (Figure 1).
- At 28 days after application, kochia control exceeded 95% for both treatments containing XtendiMax herbicide with VaporGrip Technology. Control with Enlist One® Herbicide with Colex-D® Technology and Enlist Duo® Herbicide with Colex-D® Technology did not exceed 66% (Figure 2) for this trial.
- For this trial, kochia control was significantly ($p < 0.001$) greater at both application rates of XtendiMax herbicide with VaporGrip Technology than in the treatments with Enlist One® Herbicide with Colex-D® Technology and Enlist Duo® Herbicide with Colex-D® Technology.

Key Learnings

- Kochia is an early emerging weed that can present challenges for burndown prior to planting corn and soybeans.
- XtendiMax® herbicide with VaporGrip® Technology plus Roundup PowerMAX® herbicide provided significantly greater control of kochia when compared to Enlist One® Herbicide with Colex-D® Technology or Enlist Duo® Herbicide with Colex-D® Technology at this location in these conditions.
- The ability to use dicamba for burndown prior to soybean emergence in Roundup Ready 2 Xtend® soybeans provides an advantage for kochia control.



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Legal Statements

The information discussed in this report is from a single site, replicated demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

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XtendiMax® herbicide with VaporGrip® Technology is part of the Roundup Ready® Xtend Crop System and is a restricted use pesticide. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. It is a violation of federal and state law to use any pesticide product other than in accordance with its labeling. XtendiMax® herbicide with VaporGrip® Technology and products with XtendFlex® Technology may not be approved in all states and may be subject to use restrictions in some states. Check with your local product dealer or representative or U.S. EPA and your state pesticide regulatory agency for the product registration status and additional restrictions in your state. For approved tank-mix products and nozzles visit XtendiMaxApplicationRequirements.com.

NOT ALL formulations of dicamba or glyphosate are approved for in-crop use with Roundup Ready 2 Xtend® soybeans. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR SUCH USE IN THE STATE OF APPLICATION. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for in-crop use with Roundup Ready 2 Xtend® soybeans or cotton with XtendFlex® Technology.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

Roundup Ready 2 Xtend® soybeans contain genes that confer tolerance to glyphosate and dicamba. Glyphosate will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Contact your seed brand dealer or refer to the Monsanto Technology Use Guide for recommended weed control programs.

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