Using XtendiMax® herbicide with VaporGrip® Technology, a Restricted Use Pesticide, in XtendFlex® Soybeans

The Roundup Ready® Xtend Crop System has expanded to include XtendFlex® soybeans and in-crop applications of the dicamba herbicide product XtendiMax® herbicide with VaporGrip® Technology, a restricted use pesticide, which must be used with VaporGrip® Xtra Agent (or an equivalent Volatility Reduction Adjuvant (VRA). XtendFlex soybeans are tolerant to dicamba, glyphosate, and glufosinate. The herbicide resistance combination of XtendFlex soybeans gives farmers greater flexibility for managing tough-to-control weeds such as waterhemp, Palmer amaranth, and marestail, including those with PPO-inhibitor and glyphosate resistance. When needed, a glufosinate herbicide can be used during the growing season to help manage weeds resistant to glyphosate.

Residual control should be accomplished with the application of herbicides with effective sites of action tank-mixed with XtendiMax herbicide with VaporGrip Technology (for approved tank-mix products and nozzles, please visit www.XtendiMaxApplicationRequirements.com). Plant-back restrictions apply to crops that are not tolerant to dicamba by genetics or by herbicide-resistant traits. Repeated use of herbicides with the same site of action may lead to selection for resistant weeds; therefore, it is important to use the labeled herbicide rates to help maximize weed control and include other herbicides with different sites of action. Integrated weed management principles that should be followed include:

- The scouting of fields before and after herbicide applications.
- The use of broad-spectrum soil-applied residual herbicide(s).
- The use of sequential herbicide applications with multiple, effective sites of action.
- The use of appropriate herbicides and product rates for respective weed species at sizes present.
- The use of crop rotation, where possible, can help manage weeds because different herbicides with different sites of action can be used.
- The use of non-chemical weed control practices such as tillage, cultivation, cover crops, and row spacing.

Research trials conducted in Illinois, Indiana, Minnesota, Missouri, and Tennessee demonstrated the benefit of planting XtendFlex soybeans and the use of XtendiMax herbicide with VaporGrip Technology. The trials were comprised of PRE (at planting), Early POST (14 to 21 days after PRE), and Mid-POST (14 days after early POST) applications. Weed control ratings were recorded 14 days after the Early POST application and 28 days after the Mid-POST application.

The herbicides used in the trials consisted of:

- PRE/At planting:
  - » flumioxazin (2 oz wt/acre)
  - » Warrant® Herbicide (48 fl oz/acre) + metribuzin (0.33 lb wt/acre)
  - » XtendiMax® herbicide with VaporGrip® Technology, a restricted use pesticide (22 fl oz/acre) + Warrant Herbicide (48 fl oz/acre) + drift reduction adjuvant (DRA) (0.5% v/v)
  - » XtendiMax herbicide with VaporGrip Technology (22 fl oz/acre) + flumioxazin (2 oz wt/acre) + DRA (0.5% v/v)
- Early POST:
  - » Reflex® herbicide (16 fl oz/acre)
  - » Warrant Herbicide (48 fl oz/acre)
  - » XtendiMax herbicide with VaporGrip Technology (22 fl oz/acre) + Roundup PowerMAX® herbicide (32 fl oz/acre) + DRA (0.5% v/v)
- Mid POST:

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- » Cobra® herbicide (10 fl oz/acre)
- » Warrant® Ultra herbicide (50 fl oz/acre)
- » Liberty® herbicide (32 fl oz/acre) + Ammonium sulfate (AMS) (2.5% v/v)

The average percent of waterhemp control was significantly greater in XtendFlex® soybeans when tank mixes included XtendiMax® herbicide with VaporGrip Technology, a restricted use pesticide, compared to when only PPO-inhibiting herbicides were used in PRE, Early Post, and Mid-POST applications (Figure 1).

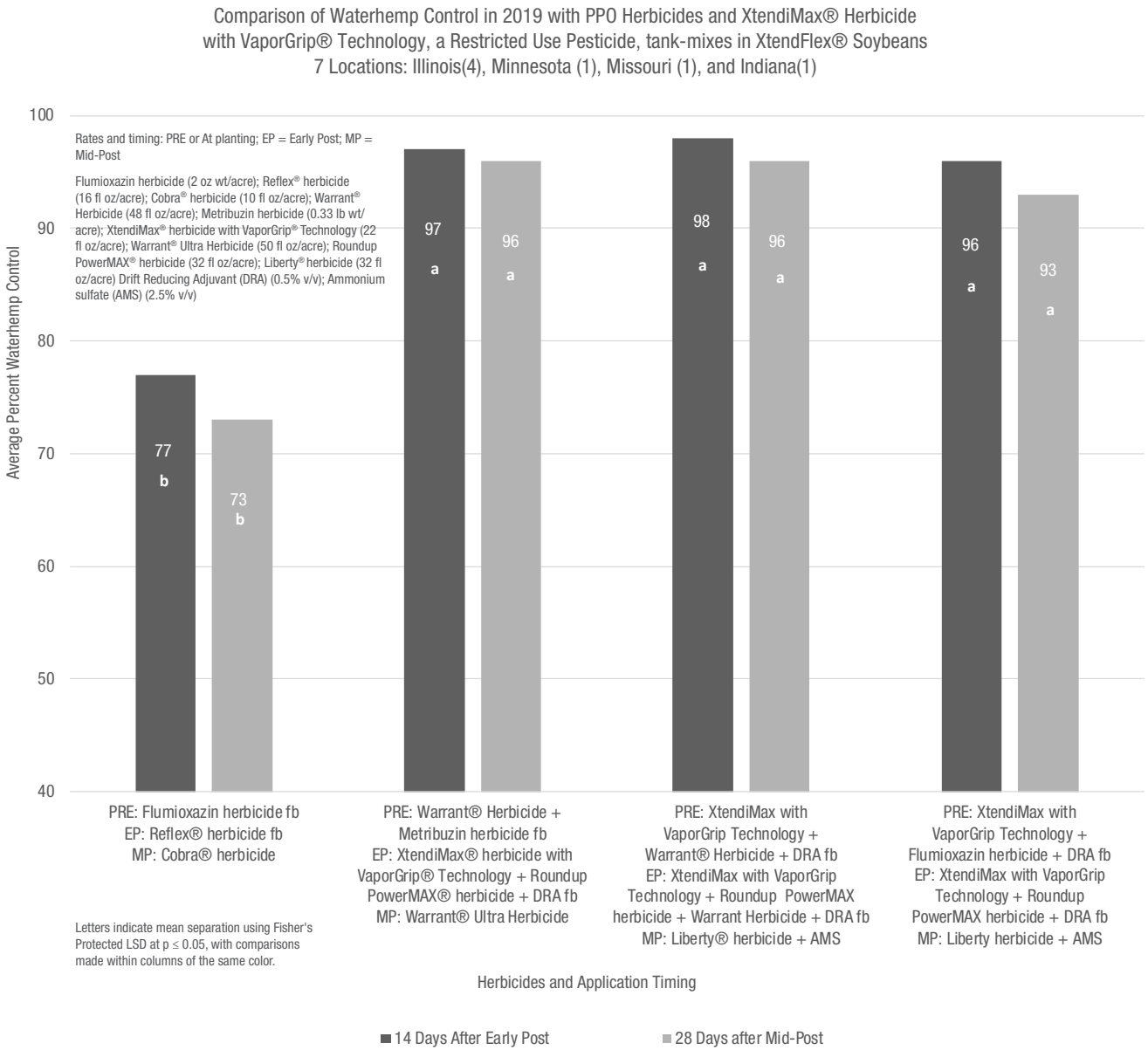

Figure1. Comparison of waterhemp control in 2019 using PPO herbicides PRE, Early POST (EP), and Mid-POST (MP) and with tank mixes of XtendiMax® herbicide with VaporGrip® Technology, a restricted use pesticide, in XtendFlex® soybeans at 7 locations - Illinois (4), Minnesota (1), Missouri (1), Indiana (1).

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The average percent of Palmer amaranth control 14 days after Early POST and 28 days after Mid-POST was significantly greater in XtendFlex® soybeans when tank mixes included XtendiMax® herbicide with VaporGrip® Technology compared to when only PPO-inhibiting herbicides were used in PRE, Early POST, and Mid-POST applications (Figure 2).

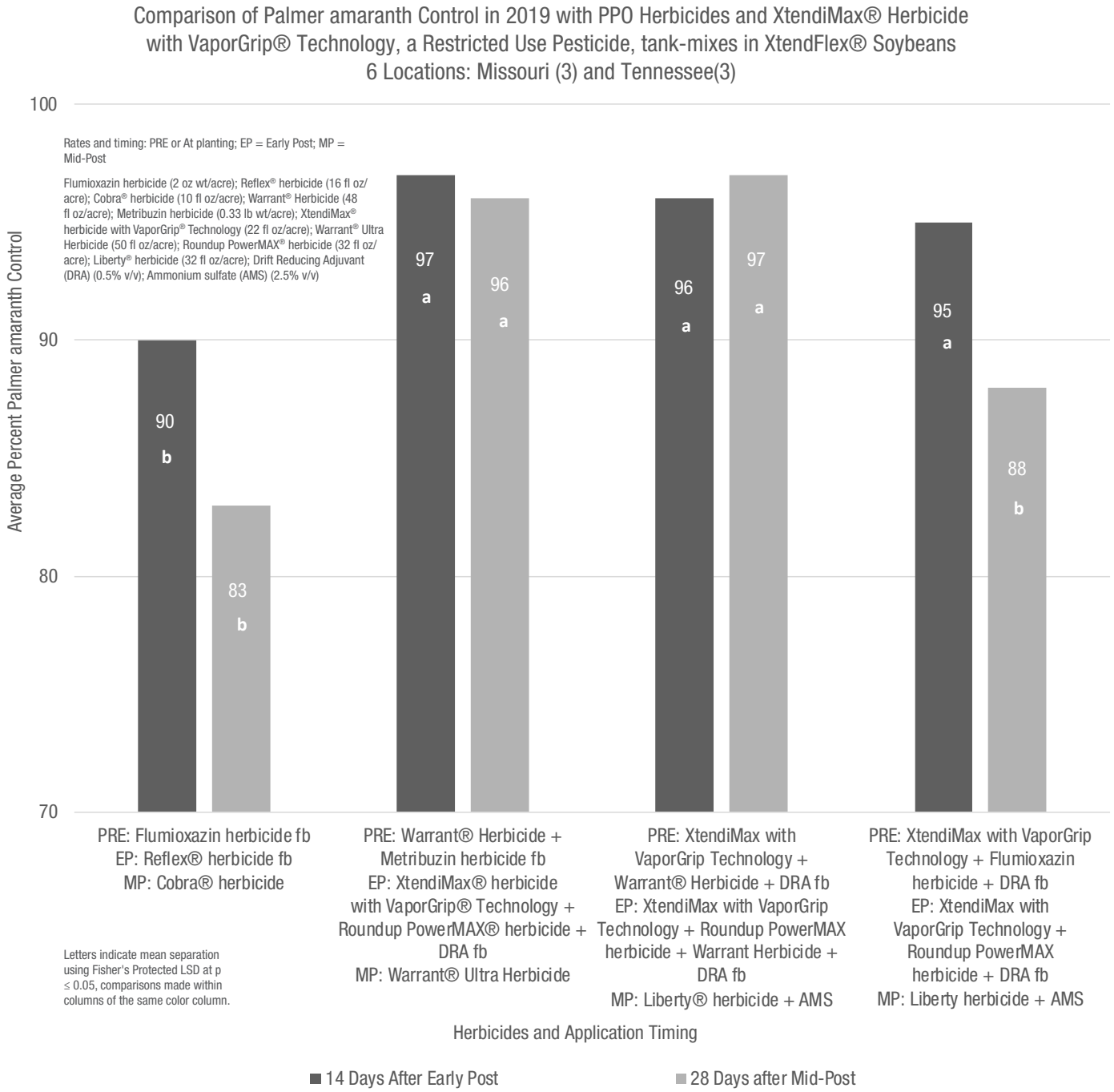

Figure 2. Comparison of Palmer amaranth control in 2019 using PPO herbicides PRE, Early Post (EP), and Mid-Post (MP) and with tank mixes of XtendiMax® herbicide with VaporGrip® Technolog, a restricted use pesticide, in XtendFlex® soybeans at 6 locations – Tennessee (3), Missouri (3).

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Applicators of XtendiMax® herbicide with VaporGrip® Technology, a restricted use pesticide, MUST review the label and follow state regulations for application. Additional information can be found at www.XtendiMaxApplicationRequirements.com.

Legal Statements

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XtendiMax® herbicide with VaporGrip® Technology is part of the Roundup Ready® Xtend Crop System, is a restricted use pesticide and must be used with VaporGrip® Xtra Agent (or an equivalent volatility reduction adjuvant). For approved tank-mix products (including VRAs and DRAs), nozzles and other important label information visit XtendiMaxApplicationRequirements.com.

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. NOT ALL formulations of dicamba, glyphosate or glufosinate are approved for in-crop use with products with XtendFlex® Technology. 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 products 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.

Products with XtendFlex® Technology contains genes that confer tolerance to glyphosate, glufosinate and dicamba. Glyphosate will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Glufosinate will kill crops that are not tolerant to glufosinate. Contact your seed brand dealer or refer to the Bayer Technology Use Guide for recommended weed control programs.

XtendiMax® is a restricted use pesticide. Not all products are registered in all states and may be subject to use restrictions. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local dealer or representative for the product registration status in your state. Roundup PowerMAX®, Roundup Ready 2 Xtend®, Roundup Ready 2 Yield®, Roundup Ready®, VaporGrip®, Warrant®, XtendFlex® and XtendiMax® are registered trademarks of Bayer Group. Reflex® is a registered trademark of a Syngenta group company. Liberty® and LibertyLink® and the Water Droplet Design® are trademarks of BASF Corporation. Cobra® is a registered trademark of Valent U.S.A. Corporation. All other trademarks are the property of their respective owners. For additional product information call toll-free 1-866-99-BAYER (1-866-992-2937) or visit our website at www.BayerCropScience.us. Bayer CropScience LP, 800 North Lindbergh Boulevard, St. Louis, MO 63167. ©2021 Bayer Group. All rights reserved. 4003_S7

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