



## Roundup Ready<sup>®</sup> Xtend Crop System Benefits and Weed Management Recommendations





»» It's the System that Makes the Difference



# Key Reasons Demand for Roundup Ready® Xtend Crop System Expected to More than Double in 2018

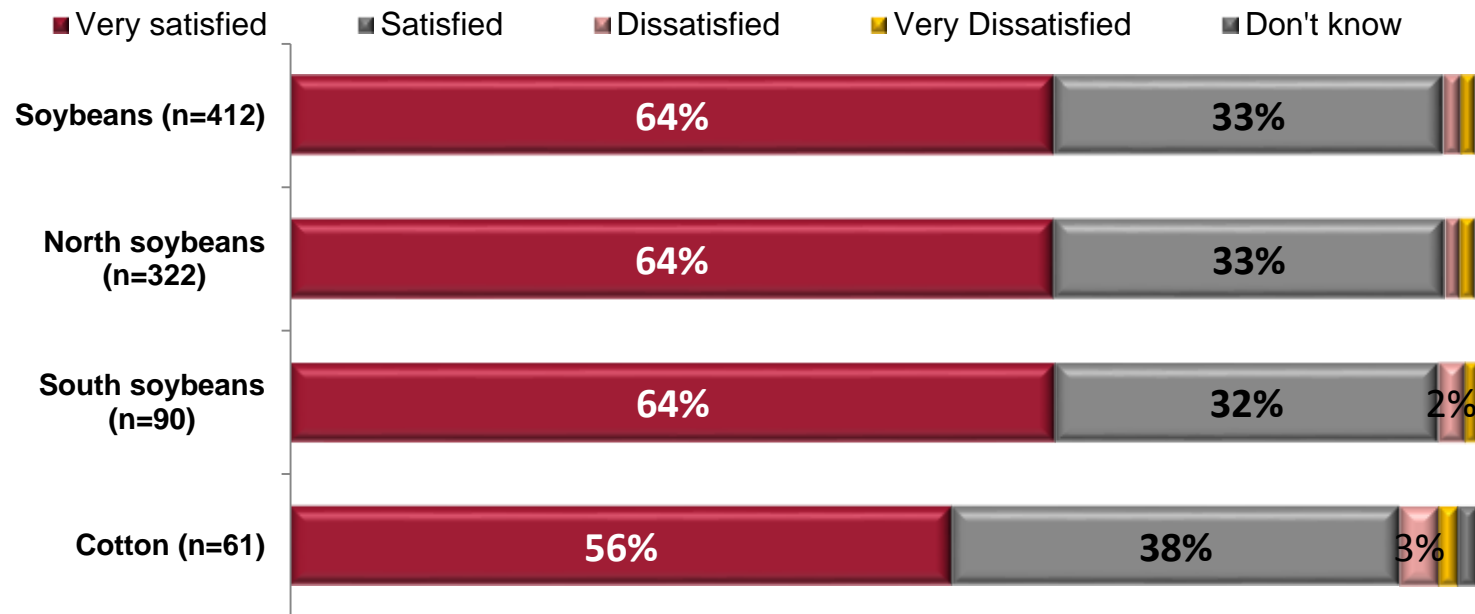
- **Industry leading genetics** in Roundup Ready 2 Xtend® soybeans and cotton with XtendFlex® Technology
- **Provides more weed control** and added value than any other weed control system on the market
- **Spray with confidence** utilizing XtendiMax® herbicide with VaporGrip® Technology
  - Proprietary VaporGrip® Technology designed to significantly reduce volatility
  - Enhanced application requirements and label to support successful use of XtendiMax® with VaporGrip® Technology, a restricted use pesticide
  - Expert recommendations and incentives through Roundup Ready PLUS® Crop Management Solutions

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.

XtendiMax<sup>®</sup> herbicide with VaporGrip<sup>®</sup> Technology, a restricted use pesticide

# 97% of soybean growers surveyed who applied XtendiMax<sup>®</sup> with VaporGrip<sup>®</sup> Technology in 2017 were satisfied with weed control

## Satisfaction With Weed Control



XtendiMax<sup>®</sup> with VaporGrip<sup>®</sup> Technology Grower Survey – August 2017

All growers surveyed were required to have 50+ acres of Roundup Ready 2 Xtend<sup>®</sup> soybeans or cotton with XtendFlex<sup>®</sup> Technology and treat at least some acres with XtendiMax<sup>®</sup> with VaporGrip<sup>®</sup> Technology to qualify



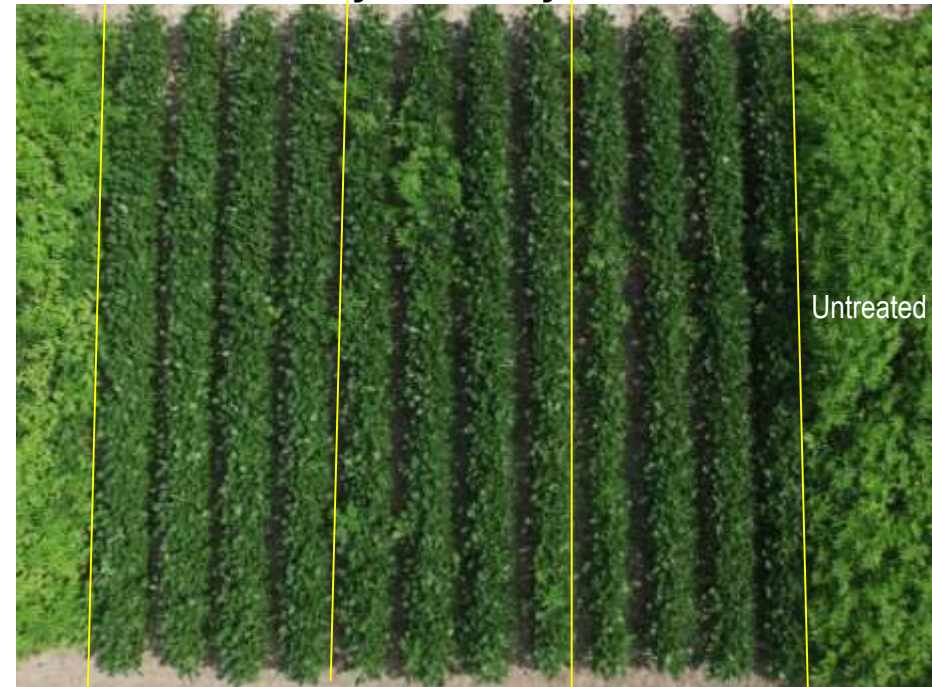
# System comparisons: Weed Control at Canopy (7-13-17)

Roundup Ready 2 Xtend® soybeans



- |   |   |   |
|---|---|---|
| <p><b>PRE- Rowel®<br/>Herbicide 2oz<br/>Fb POST<br/>XtendiMax® with<br/>VaporGrip®<br/>Technology 22oz +<br/>Roundup<br/>PowerMAX®<br/>herbicide 32oz</b></p> | <p><b>PRE – Rowel®<br/>Herbicide 2oz +<br/>XtendiMax® with<br/>VaporGrip® Technology<br/>22oz<br/>Fb POST<br/>XtendiMax® with<br/>VaporGrip® Technology<br/>22oz + Roundup<br/>PowerMAX® herbicide<br/>32oz</b></p> | <p><b>PRE – Rowel® Herbicide<br/>2oz + XtendiMax® with<br/>VaporGrip® Technology<br/>22oz<br/>Fb POST<br/>XtendiMax® with<br/>VaporGrip® Technology<br/>22oz + Roundup<br/>PowerMAX® Herbicide<br/>32oz + Warrant®<br/>Herbicide 48oz</b></p> |
|---|---|---|

LibertyLink® soybeans



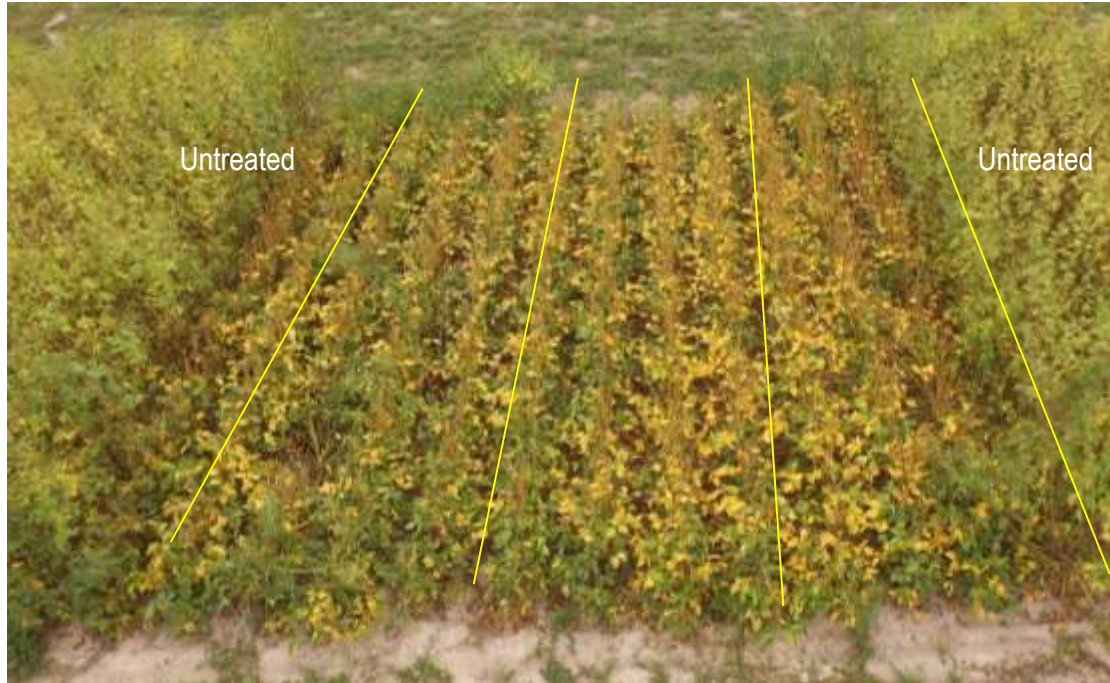
- |   |   |  |
|---|---|--|
| <p><b>PRE – Valor® SX<br/>herbicide 2oz<br/>Fb POST<br/>Liberty® herbicide<br/>29oz</b></p> | <p><b>PRE – Authority®<br/>MAXX herbicide<br/>6.4oz<br/>fb POST<br/>Liberty® herbicide<br/>29oz</b></p> | <p><b>PRE - Authority®<br/>MAXX herbicide 6.4oz<br/>fb POST<br/>Liberty® herbicide<br/>29oz<br/>+ Zidua® herbicide<br/>2oz</b></p> |
|---|---|--|

SIU Research Farm – Belleville, IL. Planting date 6/1/17



# System comparisons: Pre-Harvest Weed Control (9-21-17)

## Roundup Ready 2 Xtend® soybeans



PRE- Rowel®  
Herbicide 2oz  
Fb POST  
XtendiMax® with  
VaporGrip®  
Technology 22oz +  
Roundup  
PowerMAX®  
herbicide 32oz

PRE – Rowel®  
Herbicide 2oz +  
XtendiMax® with  
VaporGrip® Technology  
22oz  
Fb POST  
XtendiMax® with  
VaporGrip® Technology  
22oz + Roundup  
PowerMAX® herbicide  
32oz

PRE – Rowel® Herbicide  
2oz + XtendiMax® with  
VaporGrip® Technology  
22oz  
Fb POST  
XtendiMax® with  
VaporGrip® Technology  
22oz + Roundup  
PowerMAX® Herbicide  
32oz + Warrant®  
Herbicide 48oz

## LibertyLink® soybeans



PRE – Valor® SX  
herbicide 2oz  
Fb POST  
Liberty® herbicide  
29oz

PRE – Authority®  
MAXX herbicide  
6.4oz  
fb POST  
Liberty® herbicide  
29oz

PRE - Authority®  
MAXX herbicide 6.4oz  
fb POST  
Liberty® herbicide  
29oz  
+ Zidua® herbicide  
2oz

SIU Research Farm – Belleville, IL. Planting date 6/1/17

# Plant for Yield. Plan for Profit.

## Roundup Ready® Xtend Crop System vs LibertyLink® System

<u>2017 Trial Results</u>	
<i>Step 1:</i>	
<b>5.7 Bu/A</b>	<b>Yield Advantage<sup>1</sup></b> <i>(Genetics + Weed Control)</i>
<b>x \$9.75 /Bu</b>	<b>Commodity Price</b>
<hr/>	<hr/>
<b>~\$55.00 /A</b>	<b>Revenue</b>
<i>Step 2:</i>	
<b>- \$13.00 /A</b>	<b>System Cost Difference<sup>2</sup></b> <i>(Seed + Herbicide)</i>
<hr/>	<hr/>
<b>~\$42.00 /A</b>	<b>Average Profit Advantage</b>

**5.7 Bu/A average advantage vs. LibertyLink® in 2017 herbicide system trials**

- ✓ 13 locations
  - Monsanto Systems Trials
  - 3<sup>rd</sup> Party Trials
  - University Trials

### Historical Performance

**5.4 Bu/A average advantage vs. LibertyLink® in 2015 & 2016 herbicide system trials**

- ✓ 2015 & 2016 Monsanto System Trials
  - 14 locations in 2015
  - 19 locations in 2016

<sup>1</sup> Source: 2017 Monsanto Systems Trials (27 locations in 2017 reporting yield data). Significant at  $P \leq 0.05$  LSD of 1.6 Bu. Data as of November 13, 2017. Roundup Ready® Xtend Crop System data = Roundup Ready 2 Xtend® soybeans treated with dicamba, glyphosate and various residual herbicides. LibertyLink® system data = LibertyLink® soybeans treated with Liberty® herbicide and various residual herbicides. 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.

<sup>2</sup> Based on estimated Suggested Retail Price herbicide and seed costs minus calculated incentives from Roundup Ready PLUS® Crop Management Solutions Cash Incentives and LibertyLink incentives. Visit [www.roundupreadyplus.com/soybean-profitability-calculator](http://www.roundupreadyplus.com/soybean-profitability-calculator)





# »» Regional Weed Management Recommendations For the Roundup Ready® Xtend Crop System





# 2018 East Texas/Oklahoma\* Weed Management Recommendations Cotton with XtendFlex® Technology



Herbicide Practice	Herbicide Recommendation
<b>Before Planting</b>	
<p><b>Pre-Plant 30 Days before planting</b></p>	<p>Roundup PowerMAX® Herbicide (32 oz) (west of hwy 77) +</p> <ul style="list-style-type: none"> <li>• Warrant® Ultra Herbicide (50 oz) (east of Hwy 77 in TX; east of Hwy 75 in OK) <b>or</b></li> <li>• Valor® SX Herbicide (2 oz)</li> </ul>
<b>POST</b>	
<p><b>POST 1 (&lt; 4" weeds and 10 Days after Planting)</b></p>	<p>Roundup PowerMAX® Herbicide (32 oz) + XtendiMax® herbicide with VaporGrip® Technology (22 oz) + Warrant® Herbicide (3 pt) + labeled DRA</p>
<p><b>POST 2 45 Days after planting</b></p>	<p>Roundup PowerMAX® Herbicide (32 oz) + XtendiMax® herbicide with VaporGrip® Technology (22 oz) + labeled DRA <b>or</b> Liberty® Herbicide (32 oz)</p>
<p><b>LAY-BY HOODED SPRAYER</b></p>	<p>Diuron (1.5 pt) + Roundup PowerMAX® Herbicide (32 oz) <b>or</b> MSMA (2 lbs ai)</p>

# Important Notices

- **XtendiMax® herbicide with VaporGrip® Technology is part of the Roundup Ready® Xtend Crop System and is a restricted use pesticide for retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.** ALWAYS READ AND FOLLOW DIRECTIONS FOR USE ON PESTICIDE LABELING. 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 cotton with XtendFlex® Technology may not be approved in all states and may be subject to use restrictions in some states. Check with your local Monsanto 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](http://XtendiMaxApplicationRequirements.com)

**Monsanto Company is a member of Excellence Through Stewardship® (ETS).** Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. This product has been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship.

**ALWAYS READ AND FOLLOW DIRECTIONS FOR USE ON PESTICIDE LABELING.** 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 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.

**Roundup Ready 2 Xtend® soybeans contains 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. Glufosinate will kill crops that are not tolerant to glufosinate. Contact your Monsanto dealer or refer to Monsanto's Technology Use Guide for recommended weed control programs.

All technologies and brands referenced may not yet be registered in all states. Check with your Monsanto representative for the registration status in your state.

**Roundup Technology®** includes Monsanto's glyphosate-based herbicide technologies.

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**Always read and follow IRM, where applicable, grain marketing and all other stewardship practices and pesticide label directions.** Warrant® Herbicide and Warrant® Ultra Herbicide are not 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 Monsanto dealer or representative for the product registration status in your state. Roundup PowerMAX®, Roundup Ready 2 Xtend®, Roundup Ready PLUS®, Roundup Technology®, VaporGrip®, Warrant®, XtendFlex® and XtendiMax® are registered trademarks of Monsanto Technology LLC. Liberty® and LibertyLink® are registered trademarks of Bayer. Direx® is a registered trademark of E.I. Du Pont de Nemours and Company. Caparol® and Gramoxone® are registered trademarks of a Syngenta group company. Cobra®, Fierce® and Valor® are registered trademarks of Valent U.S.A. Corporation. Some of the product(s) discussed herein are restricted use pesticide(s) and may not be registered in all states. 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 product representative for the product registration status in your state. All other trademarks are the property of their respective owners. ©2018 Monsanto Company All Rights Reserved.