



MANAGING WEED RESISTANCE IN SOYBEAN WITH RESIDUAL HERBICIDES

TRIAL OVERVIEW

- As weed resistance to site of action (SOA) Groups 2, 9, and 14 increases, controlling emerged weeds in soybean fields has become increasingly challenging.
- Overlapping or layering residuals such as Rowel® Herbicide followed by Warrant® Herbicide or Warrant® Ultra Herbicide, can help control broadleaf weeds such as waterhemp prior to weed emergence.

RESEARCH OBJECTIVE

- This replicated study was established to evaluate weed control and soybean injury from various herbicide systems with different levels of residual control in the POST application.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Rushmore, MN	Silty Clay Loam	NA	Conventional	05/19/2016	10/01/2016	NA	140,000

SITE NOTES:

- Weed pressure at this location primarily consisted of glyphosate-resistant waterhemp as well as common lambsquarters.
- Rowel® Herbicide was applied PRE at 3 oz/acre at planting for all treatments.
- Roundup PowerMAX® herbicide was applied POST at 32 oz/ac on June 18, 2016 for all treatments.
- The following treatments were applied:
 - Treatment 1: Rowel® Herbicide (3 oz/acre) applied PRE, followed by Roundup PowerMAX® herbicide (32 oz/acre) applied POST.
 - Treatment 2: Rowel® Herbicide (3 oz/acre) applied PRE, followed by Roundup PowerMAX® herbicide (32 oz/acre) and Warrant® Herbicide (64 oz/acre) applied POST at the V2 growth stage.
 - Treatment 3: Rowel® Herbicide (3 oz/acre) applied PRE, followed by Roundup PowerMAX® herbicide (32 oz/acre) and Warrant® Ultra Herbicide (48 oz/acre) applied POST at the V2 growth stage.

UNDERSTANDING THE RESULTS

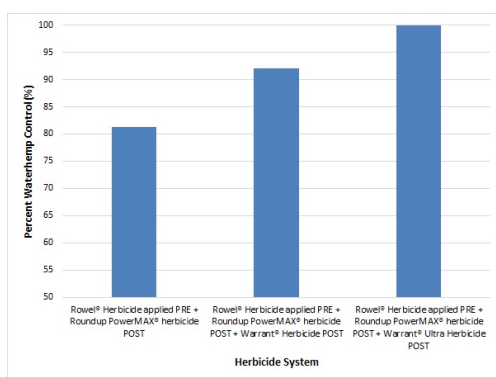


Figure 1. The percent of waterhemp controlled at harvest.

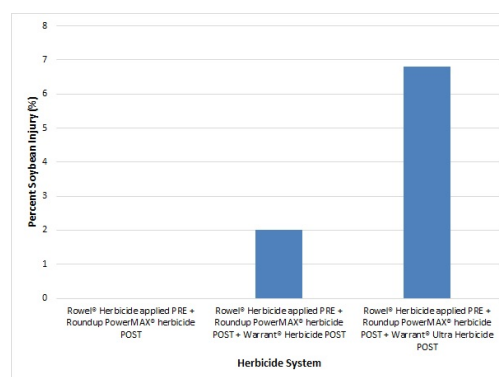


Figure 2. The percent of injury to soybean plants 14 days after POST application.

- When Warrant® Herbicide or Warrant® Ultra Herbicide was added to the initial treatment of Rowel Herbicide (3 oz/acre) applied PRE, followed by Roundup PowerMAX® herbicide (32 oz/acre) applied POST, waterhemp control was increased compared to no additional residual.
- Including an application of Warrant® Ultra Herbicide provided greater waterhemp control than an application of Warrant® Herbicide.

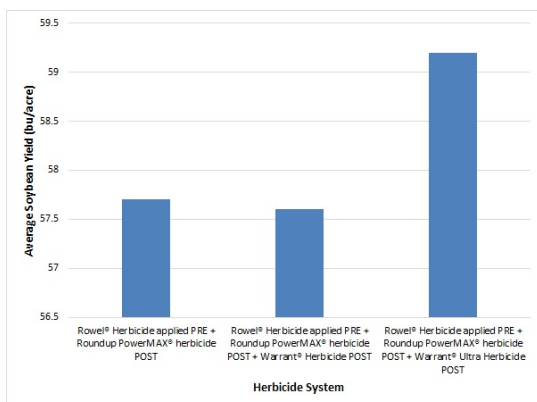


Figure 3. Average soybean yield.

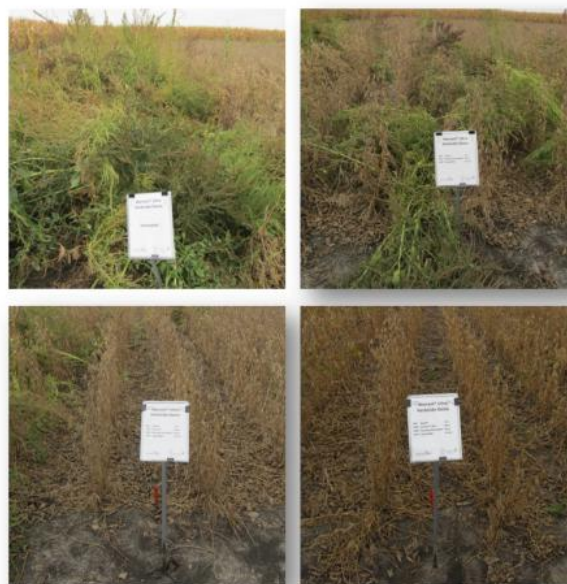


Figure 4. Untreated plot with heavy waterhemp pressure (top left), no additional residual applied (top right), base treatment plus Warrant® Herbicide applied POST (bottom left), and base treatment plus Warrant® Ultra Herbicide applied POST (bottom right).

- Although soybean injury was slightly increased when adding Warrant® Herbicide or Warrant® Ultra Herbicide to the base treatment, treatment 3 with Warrant® Ultra Herbicide provided the best waterhemp control and resulted in the highest soybean yield.

WHAT DOES THIS MEAN FOR YOUR FARM?

- Warrant® Ultra Herbicide, a premix of a Group 14 and 15 herbicides, is a flexible option for both residual and POST applications for waterhemp control in soybeans.
- Overlapping or layering residuals such as Rowel® Herbicide followed by Warrant® Herbicide or Warrant® Ultra Herbicide, can help control broadleaf weeds such as waterhemp prior to weed emergence.
- Warrant® Ultra Herbicide causes minimal soybean injury when tank-mixed with Roundup PowerMAX® herbicide without any other adjuvants. However, consider the addition of a methylated seed oil (MSO) or high surfactant oil concentrate (HSOC) when spraying emerged glyphosate-resistant weeds with Warrant® Ultra Herbicide + Roundup PowerMAX® herbicide.
- Visit www.RoundupReadyPLUS.com to learn more about potential incentives up to \$6.00 per acre when utilizing Warrant® Herbicide or Warrant® Ultra Herbicide to overlap residuals in a crop management solution.

LEGAL STATEMENT

For additional agronomic information, please contact your local brand representative. Developed in partnership with Technology, Development & Agronomy by Monsanto.

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