



Warrant® Herbicide for Residual Weed Control in Soybeans

What You'll Learn...

- Warrant® Herbicide is a unique formulation that provides effective residual weed control, improved crop safety, and application flexibility in soybeans.
- The herbicide can be applied preplant, at-planting, preemergence, and postemergence in soybeans.
- The product provides application flexibility that can be used in a program of overlapping residual herbicides to help provide season-long weed control in soybeans.

Warrant® Herbicide

Warrant Herbicide provides residual weed control of annual grasses and small-seeded broadleaves, including foxtails, lambsquarters, nightshade, waterhemp, Palmer amaranth and other pigweed species (Table 1). The product will not provide control of emerged weeds at the time of application, but can be applied in a tank mixture with products that provide postemergence control of weeds, such as Roundup® brand glyphosate-only agricultural herbicides.

Acetochlor is the active ingredient in Warrant Herbicide, which belongs to the chloroacetamide chemical family (group 15 site of action). The product is a water-based formulation made by the micro-encapsulation of acetochlor. The formulation provides improved crop safety potential with preemergence and postemergence applications. Micro-encapsulation also provides for a gradual release of acetochlor over time, beginning with

Table 1. Annual grass and broadleaf weeds controlled by Warrant® Herbicide.

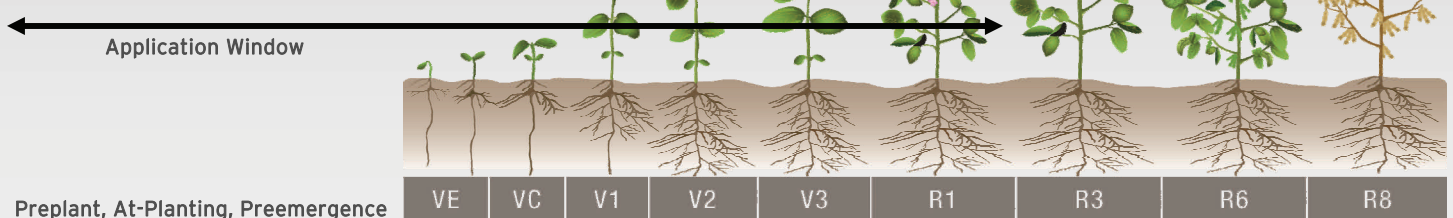
| | | |
|------------------------|-----------------------|-----------------|
| Barnyardgrass | Red Rice | Henbit |
| Crabgrass | Sandbur* | Lambsquarters |
| Crowfootgrass | Shattercane* | Nightshade |
| Prairie Cupgrass | Broadleaf Signalgrass | Palmer Amaranth |
| Foxtail species | Red Sprangletop | Pigweed species |
| Goosegrass | Volunteer Wheat* | Purslane |
| Seedling Johnsongrass* | Witchgrass | Florida Pusley |
| Foxtail Millet* | Florida Beggarweed* | Prickly Sida* |
| Wild Oat* | Carpetweed | Smartweed* |
| Fall Panicum | Galinsoga | Starbur* |
| Texas Panicum* | Cutleaf Groundcherry* | Waterhemp |

* Denotes reduced competition. Consult the label for specific use information.

exposure to soil moisture. Rainfall or irrigation is required to move the herbicide into the weed germination zone. The amount of rainfall or irrigation required depends on existing soil moisture, soil type and organic matter, but 1/2 inch is normally adequate. The micro-encapsulated formulation helps to extend the length of effective residual weed control for up to 30 days.

Warrant Herbicide can be applied from early preplant up to the R2 growth stage in soybeans (Figure 1). This flexibility allows for overlapping residual herbicide applications up through soybean canopy closure to help prevent weed emergence and provide season-long weed control.

Figure 1. Warrant® Herbicide can be applied within a wider window that includes early preplant, at-planting, preemergence, and postemergence (up to the R2 growth stage in soybeans). The R2 growth stage is full flowering, when there is an open flower at one of the two uppermost nodes.





Warrant® Herbicide for Residual Weed Control in Soybeans (continued)

Application Guidelines

Warrant® Herbicide can be applied at rates between 3 and 4 pints/acre depending on soil type, organic matter, and anticipated weed pressure. The most common use rate is 3 pints/acre. Two applications of the product can be made in the same season, with no more than 8 pints/acre applied per year.

Warrant Herbicide can be used alone or tank mixed with other residual herbicides, including Authority® brand herbicides, fomesafen, pendimethalin, and metribuzin, when applied preplant, at-planting, or preemergence in soybeans. It can also be tank mixed with Gramoxone® brand herbicides or Roundup® brand glyphosate-only agricultural herbicides for control of emerged weeds.

Warrant Herbicide can be applied postemergence in soybeans for residual weed control with excellent crop safety (Figure 2). The optimum timing of application is before soybeans reach the V3 growth stage to help maximize soil contact, reduce crop interference, and receive the greatest benefit from the residual weed control. Directed applications after the V5 growth stage of soybeans help to increase soil coverage and canopy penetration. The herbicide can be tank mixed with other products registered for soybeans, including Authority brand herbicides, Assure®, Basagran®, Classic®, Cobra®, FirstRate®, Flexstar®, Fusilade®, metribuzin, Poast®, Pursuit®, Raptor®, Reflex®, and Select Max® for additional preemergence and postemergence weed control. Warrant Herbicide can also be tank mixed with a Roundup brand glyphosate-only agricultural herbicide in glyphosate-tolerant soybeans for preemergence and postemergence weed control (Figure 3).



Figure 2. Crop safety differences 7 days after postemergence applications to soybeans in the V3 growth stage. Warrant Herbicide (left) compared to an EC formulation of a chloroacetamide herbicide (right) applied at labeled use rates.



Figure 3. Control of common waterhemp from a one pass tank mix of Warrant Herbicide (3 pints/acre) plus Roundup PowerMAX® (40 fluid ounces/acre) applied postemergence at the V2 to V3 stage of soybeans (left) compared to untreated check (right).

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

Roundup Technology® includes Monsanto's glyphosate-based herbicide technologies. **Individual results may vary**, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Some of the products discussed herein are restricted use pesticides and may not be registered in all states. Warrant® Herbicide is not registered in all states. Warrant® Herbicide may be subject to use restrictions in some 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 Monsanto dealer or representative for the product registration status in your state. Roundup Ready® crops contain genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand agricultural herbicides. Roundup® brand agricultural herbicides will kill crops that are not tolerant to glyphosate. **Tank mixtures:** The applicable labeling for each product must be in the possession of the user at the time of application. Follow applicable use instructions, including application rates, precautions and restrictions of each product used in the tank mixture. Monsanto has not tested all tank mix product formulations for compatibility or performance other than specifically listed by brand name. Always predetermine the compatibility of tank mixtures by mixing small proportional quantities in advance. Roundup PowerMAX®, Roundup Ready PLUS®, Roundup Ready®, Roundup Technology®, Roundup® and Warrant® are registered trademarks of Monsanto Technology LLC. Flexstar®, Gramoxone® and Reflex® are registered trademarks of a Syngenta group company. Authority® is a trademark of FMC Corporation. Cobra® and Select Max® are registered trademarks of Valent U.S.A. Corporation. All other trademarks are the property of their respective owners. ©2015 Monsanto Company. 111110013212 110115TED