



## Burndown and Early Season Weed Control—North

### What You'll Learn...

- A significant portion of yield is at risk if early-emerging weeds are allowed to compete with crops during the first 4 weeks after planting.
- Burndown herbicide applications are an essential part of weed management in corn and soybean.
- Environmental conditions affect herbicide performance, weed susceptibility to herbicides, and crop development.
- Additional information on the importance of Burndown and Early Season Weed Control can be found in the [Considerations for Burndown and Early Season Weed Management](#) Spotlight on <http://roundupreadyPLUS.com>

### What is at Stake?

If left uncontrolled, weeds can cause reduced yield potential, crop quality loss, harvest difficulties, and cause future weed management issues due to weed seed production. The use of herbicides presents growers with an attractive return on investment as well. Annual herbicide sales in the U.S. are estimated at approximately \$7 billion annually and return approximately \$26 billion because of higher yield and better quality products.<sup>1</sup>

### Weed Identification

Weeds emerging prior to or at planting are the most competitive with corn and soybean.<sup>2</sup> The timing and intensity of weed emergence determines which species will be the most competitive with the crop. Knowledge of when weed species are likely to emerge is important in planning effective weed control programs. The relative emergence sequence of several common weeds is provided in Table 1 below.

**Table 1. Relative emergence sequence of common weeds.**

Winter annuals	Prior to planting	Around planting	After planting
Marestail	Kochia	Common ragweed	Waterhemp spp.
Biennial thistles	Russian thistle	Wild buckwheat	Black nightshade
Field pennycress	Common lambsquarters	Velvetleaf	Large crabgrass
Shepherd's purse	Giant ragweed	Foxtail spp.	Wild proso millet
White cockle	Smartweed spp.	Pigweed spp.	Fall panicum
	Common sunflower	Cocklebur	Jerusalem artichoke
	Hairy nightshade	Field sandbur	Marestail
	Dandelion	Canada thistle	
	Foxtail barley	Yellow nutsedge	

Source: Buhler, D. D., Hartzler, R.G., Forcella, F., and Gunsolus, J.L. 1997. Relative Emergence Sequence for Weeds of Corn and Soybeans. Pest Management Fact Sheet 9. Iowa State University.



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### Treatment Recommendations

Fields should be scouted and weeds controlled throughout the season. The timing of a herbicide application should take into consideration the protection of yield potential, correct herbicide use rate for weed size, and environmental conditions.

Weed management tactics for tough-to-control weeds such as marehail, giant ragweed, kochia, lambsquarters, *Amaranthus* species, and others can be found at <http://www.roundupreadyPLUS.com>.

#### Sources:

<sup>1</sup> The value of herbicides in U.S. crop production—2005 update. Executive Summary. Crop Life Foundation. <http://www.croplifefoundation.org>.

<sup>2</sup> Hartzler, R. 2003. Is your weed management program reducing your economic return? Iowa State University Weed Science. <http://www.weeds.iastate.edu>

<sup>3</sup> Pocock, J. 2011. 5 tips for corn weed management | Start with a clean field – then control weeds early as they reach 4 inches. Corn and Soybean Digest. Web sources verified 02/09/2015.

### Minimize the Risk of Weed Resistance

- Integrated weed management principles should be applied. Multiple sites-of-action with overlapping weed spectrums should be used in rotation, sequences, or mixtures.
- The full recommended herbicide rate and proper application timing should be used for the hardest-to-control weed species in the field.
- Fields should be scouted after herbicide application to ensure control has been achieved. Avoid allowing weeds to reproduce by seed or to proliferate vegetatively.
- The field should be monitored and equipment cleaned between sites.

**Table 2. Recommendations for Roundup WeatherMAX® or Roundup PowerMAX® tank mixtures.**

CORN		SOYBEANS	
Practice	Products <sup>3</sup>	Practice	Products <sup>3</sup>
Corn Burndown	dicamba or 2,4-D	Soybean Burndown	Gramoxone® SL, dicamba or 2,4-D
Corn Preplant or PRE <sup>1</sup>	Harness® Brands, Degree Xtra®, TripleFLEX® II Herbicide	Soybean Preplant or PRE	Warrant® Herbicide, Rowel™ Herbicide, Rowel™ FX Herbicide, Fierce®, Fierce XLT, Valor®, Valor® XLT, Authority® Assist, Authority® First, Authority® MAXX, Authority® MTZ, Authority® XL, or metribuzin
Corn POST	IMPACT®, Calisto®, or other POST herbicides	Soybean POST 1 <sup>2</sup>	Warrant® Herbicide
		Soybean POST 2	Warrant® Herbicide + Cobra® or fomesafen

Always refer to product labels for use rates, application guidelines, and rotational crop restrictions. <sup>1</sup> PRE herbicides may also include other herbicides based on local weeds and preferences. Tank mix Select® or Select Max® if volunteer corn is present. <sup>3</sup> Crop and weed specific recommendations <http://www.roundupreadyPLUS.com>.

THIS DOCUMENT IS INTENDED TO PROVIDE INFORMATION ABOUT THIS WEED AND GUIDELINES FOR CONTROL. AS A TOUGH-TO-CONTROL WEED, KNOWLEDGE ABOUT THE BIOLOGY AND WEED CONTROL PROGRAMS WILL HELP IN THEIR MANAGEMENT.

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.** Harness®, Rowel™ Herbicide, Rowel™ FX Herbicide, TripleFLEX® Herbicide, TripleFLEX® II Herbicide and Warrant® Herbicide are not registered in all states. Harness®, Rowel™ Herbicide, Rowel™ FX Herbicide, TripleFLEX® Herbicide, TripleFLEX® II Herbicide and Warrant® Herbicide may be subject to use restrictions in some states. Degree Xtra® is a restricted use pesticide and is not 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 Monsanto dealer or representative for the product registration status in your state. **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. Degree Xtra®, Harness®, Roundup PowerMAX®, Roundup Ready PLUS®, Roundup Technology®, Roundup WeatherMAX®, Rowel™, TripleFLEX® and Warrant® are registered trademarks of Monsanto Technology LLC. Leaf Design® is a registered trademark of Monsanto Company. Authority® is a trademark of FMC Corporation. Cobra®, Gangster® 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. Impact® is a registered trademark of Amvac Chemical Corporation. All other trademarks are the property of their respective owners. ©2015 Monsanto Company. 140102061101 021315AMH