

7-3-2008

Improving glyphosate performance in Roundup Ready soybean

Robert G. Hartzler

Iowa State University, hartzler@iastate.edu

Follow this and additional works at: <http://lib.dr.iastate.edu/cropnews>

 Part of the [Agricultural Science Commons](#), [Agriculture Commons](#), and the [Agronomy and Crop Sciences Commons](#)

Recommended Citation

Hartzler, Robert G., "Improving glyphosate performance in Roundup Ready soybean" (2008). *Integrated Crop Management News*. 805. <http://lib.dr.iastate.edu/cropnews/805>

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit <https://crops.extension.iastate.edu/>.

Improving glyphosate performance in Roundup Ready soybean

Abstract

Although glyphosate resistant weeds have been documented in states surrounding Iowa, at this time our only confirmed glyphosate-resistant species is horseweed/marestail (*Conyza canadensis*). However, over the past decade we have selected for a weed spectrum that possesses a higher level of tolerance than was present at the start of the Roundup Ready era of weed management. Because of this, glyphosate control failures are more common now than they were ten years ago.

Keywords

Agronomy

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences

[Subscribe to Crop News](#)



Archives

[2015](#)[2014](#)[2013](#)[2012](#)[2011](#)[2010](#)[2009](#)[2008](#)[Previous Years](#)

ISU Crop Resources

[Extension Field Agronomists](#)[Crop & Soils Info](#)[Pesticide Applicator Training](#)[Agronomy Extension](#)[Entomology Extension](#)[Plant Pathology Extension](#)[Ag and Biosystems Engineering Extension](#)[Agribusiness Education Program](#)[Iowa Grain Quality Initiative](#)[College of Agriculture and Life Sciences](#)[ISU Extension](#)

Integrated Crop Management NEWS

 PRINT STORY
 EMAIL STORY
 ADD TO DELICIOUS
 ATOM FEED
 FOLLOW ON TWITTER

Improving glyphosate performance in Roundup Ready soybean

By Bob Hartzler, Department of Agronomy

Although glyphosate resistant weeds have been documented in states surrounding Iowa, at this time our only confirmed glyphosate-resistant species is horseweed/marestail (*Conyza canadensis*). However, over the past decade we have selected for a weed spectrum that possesses a higher level of tolerance than was present at the start of the Roundup Ready era of weed management. Because of this, glyphosate control failures are more common now than they were ten years ago.

There are several ways to reduce performance issues when using glyphosate for postemergence weed control. The most important is to apply the herbicide in a timely fashion. The majority of control failures are at least partially caused by spraying weeds that exceed four inches in height. Lambsquarter, waterhemp, horseweed and giant ragweed are species where timeliness is especially critical in obtaining consistent results.

The second factor resulting in inconsistent results is too low of rate. Base the rate on the most difficult to control weed in the field. The third factor, and least understood, is the influence of environmental conditions on herbicide efficacy. Light, temperature, soil moisture, relative humidity and numerous other factors all interact to influence the susceptibility of a plant to any herbicide. Lambsquarter is particularly responsive to environmental conditions, and under certain conditions becomes almost immune to postemergence applications. Timely application to small weeds greatly reduces the impact of the environment on weed response to postemergence herbicides.

Persons who have experienced inconsistent results in the past typically are interested in additional materials to add to the tank to minimize problems. The types of additives recommended for use with glyphosate varies among products, although all glyphosate products recommend the use of AMS or other nitrogen sources. A variety of AMS alternatives (water conditioners) are marketed for use with glyphosate, but many do not provide enough active ingredient to reduce the antagonistic effects of salts present in the carrier. The specific recommendations for surfactants vary among glyphosate products and should be followed. The use of surfactants with 'fully loaded' formulations has not consistently overcome problems associated with spraying large weeds or weather-related issues.

In certain situations addition of a second herbicide to glyphosate may improve weed control. There should be a specific purpose for adding a second product to the tank rather than arbitrarily adding something in the hope of improving performance. Control of big giant ragweed can be improved with the addition of an ALS herbicide (cloransulam – First Rate/Amplify; clorimuron – Classic) or a PPO inhibitor (Flexstar, Phoenix, Cobra). Addition of Harmony GT or a PPO inhibitor has been shown to improve the consistency of wild buckwheat control. Cloransulam, chlorimuron or a PPO inhibitor can improve the control of annual

morningglories. There are no products for use in soybean that will consistently improve the performance of glyphosate on lambsquarter and waterhemp.

In summary, glyphosate remains the most effective herbicide we have to control weeds in soybean and corn. However, consistent results can only be obtained through good management of the product. Proper rate selection and timing of application are the most important steps.

Bob Hartzler is a professor of weed science with extension, teaching and research responsibilities.

This article was published originally on 7/3/2008 The information contained within the article may or may not be up to date depending on when you are accessing the information.

Links to this material are strongly encouraged. This article may be republished without further permission if it is published as written and includes credit to the author, Integrated Crop Management News and Iowa State University Extension. Prior permission from the author is required if this article is republished in any other manner.