

5-23-2008

Timeliness Critical to Protect Corn Yields

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., "Timeliness Critical to Protect Corn Yields" (2008). *Integrated Crop Management News*. 923.
<http://lib.dr.iastate.edu/cropnews/923>

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 Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user.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/>.

Timeliness Critical to Protect Corn Yields

Abstract

Weeds likely are emerging with corn in many fields due to the lack of a preemergence herbicide. Whether this was planned or due to weather constraints, it is critical to control weeds early in order to protect yields. The term **critical period** is used to define how long weeds can be allowed to compete with the crop before yields are impacted. To obtain maximum yields, weeds must be controlled before the critical period is reached. The difficulty in relying on total post programs is the variability in the critical period, making it impossible to predict the optimum time for postemergence herbicide application.

Keywords

Agronomy

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences

IOWA STATE UNIVERSITY
Extension and Outreach
Crops Knowledgebase



Search	Search
--------	--------

[Home](#)

Mailing Lists

Subscribe to ICM News updates and receive email alerts when new information is posted.

Your Email address *

subscribe	unsubscribe
-----------	-------------

Timeliness Critical to Protect Corn Yields

ICM News

May 23, 2008

By Bob Hartzler, Department of Agronomy

Weeds likely are emerging with corn in many fields due to the lack of a preemergence herbicide. Whether this was planned or due to weather constraints, it is critical to control weeds early in order to protect yields.

The term **critical period** is used to define how long weeds can be allowed to compete with the crop before yields are impacted. To obtain maximum yields, weeds must be controlled before the critical period is reached. The difficulty in relying on total post programs is the variability in the critical period, making it impossible to predict the optimum time for postemergence herbicide application.

The critical period is influenced by many factors, including: weed density, relative time of emergence of weeds and corn, weed species and cultural and environmental factors.

A multi-state project evaluated the effect of time of weed removal in glyphosate resistant corn. In the 35 experiments, the average yield loss was 2 percent when the initial glyphosate application was made to 2.5 inch weeds (Table 1).

Table 1. Effect of early-season competition on corn yields. (Gower et al. 2003. Weed Technol.)

Weed height at application (inches)	% corn yield loss		
	Average	Least competitive environments	Most competitive environments
2.5	2	0	13
5	4	0	14
7.5	9	0	24

Delaying the application until weeds were 5 inches tall doubled the yield loss. The variability in the critical period can be seen by looking at the yield response at the sites with the least and most competitive environments.

At sites with low levels of competition, corn yield loss was not affected when application was delayed until weeds were 7.5 inches.

At the other end of the spectrum, corn yields were reduced 13 percent when weeds were only 2.5 inches at locations with high weed competition.

Due to our inability to accurately predict the critical period, it is wise to act conservatively when determining when to apply postemergence herbicides. Weed density is probably the most important factor influencing the critical period, and fields with heavy infestations should be treated as quickly as possible after weed emergence.

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



Category: Crop Production

Tags: yields Corn

Author:



Bob Hartzler *Professor*

Bob Hartzler is a Professor of Agronomy and an Extension Weed Specialist. Hartzler conducts research on weed biology and how it impacts the efficacy of weed management programs in corn and soybean. He also teaches undergraduate classes in weed science and weed iden...

[Site Index](#) [Site map](#) [Policies](#)

