

## Who is involved?

Larry Buss, Farmer, Harrison Project Lead,  
President of Harrison/Crawford County  
Corn Growers Association  
Greg Christiansen, Ag Lender, Midstates  
Bank, NA  
David Cooper, Farmer, Harrison County  
Extension Council  
Todd Cohrs, Ag Lender, FCSA Financial Officer  
Mike Dickinson, Harrison County Farm  
Bureau Vice President  
Matt Handbury, Heartland COOP Agronomist  
Carter Oliver, Harrison County Director, ISU  
Extension and Outreach  
Jacque Pohl, Iowa State Program Coordinator  
Jason Sporrer, Agriland FS Agronomist  
John Swalwell, Asgrow/Dekalb Agronomist  
Pat Warmbier, USDA FSA County  
Executive Director  
Brent Wiersma, Business Representative,  
BASF  
Mike Witt, Iowa State Field Agronomist

## Managing Resistance

To reduce the spread and development of herbicide resistance, the use of diverse weed management programs are essential, including timely applications of herbicide mixtures containing multiple, effective mechanisms of action in addition to cultural and mechanical techniques where feasible. Due to high seed production in many weed species, all efforts to reduce and prevent seed production by resistant individuals will be highly beneficial.

## Resistance screening

Waterhemp, giant ragweed, and Palmer amaranth populations from Harrison County fields were collected and screened for resistance to commonly used herbicides. All 9 populations tested were resistant to Roundup (glyphosate), while 6 of 9 waterhemp populations were resistant to Cobra (lactofen). Of two Palmer amaranth populations tested, two were resistant to Roundup and one was resistant to Callisto (mesotrione). All three giant ragweed populations were resistant to Roundup, with one population resistant to Callisto. These results clearly show that herbicide resistant weeds are common in Harrison County and will continue to spread.



Weed seeds were grown in a greenhouse and treated with common herbicides to identify resistant populations.

## Iowa Pest Resistance Management Program

The Iowa Pest Resistance Management Program (IPRMP) is an effort involving all members of Iowa's agricultural sector to slow the development of resistance to management practices in weeds, insects, and pathogens. Pest adaptation to chemical, genetic, and agronomic management practices is occurring at a much faster rate than new technologies are being developed. By slowing the development of resistance, valuable pest management technologies can be preserved, helping to protect long-term farm profitability.



### LEARN MORE

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## Harrison County Pest Resistance Project



## July 9, 2019 Field Day

Come see results of the 2019 field trials, which will include diverse herbicide systems on both till and no-till sites. A comparison of treatments for frog-eye leaf spot is also planned.

Location: Immediately northeast of the intersection of Niagara Trail and 262nd Street, which is about 1.5 to 2 miles southwest of downtown Logan.





About the Project

The Harrison County Pest Resistance Project is an effort to address the growing challenge posed by resistant pests. Since pests spread easily by wind, water, wildlife and equipment, resistance management is the responsibility of everyone involved in agriculture. A team of farmers, agronomists, crop advisers, researchers, bankers, agribusiness professionals, seed and herbicide company professionals and landowners is working to increase collaboration, spread awareness, and find solutions to resistance issues to ensure that pest resistance management is an integral part of all agricultural business decisions. While the project began with a focus on waterhemp, marestalk, giant ragweed, and palmer amaranth, the team decided to expand and address disease resistance as well. This project is one of several resistance management projects being implemented across Iowa as part of the Iowa Pest Resistance Management Program.

Field Trials

Field trials were conducted in 2018 to allow side-by-side comparisons of 10 comprehensive weed management programs in four cooperator’s fields. Trials were conducted in 3 soybean fields (two no-till, one with tillage) and one cornfield. Herbicide programs were designed to demonstrate “Good,” “Better,” and “Best” herbicide programs in terms of managing weeds and resistance. All programs involved two passes, and ranged from tillage followed by Liberty (glufosinate), to a pre-mix consisting of three herbicides modes of action (MOAs) followed by Liberty plus Outlook (dimethenamid), for a total of four unique MOAs for the season. Visit [protectiowacrops.org](http://protectiowacrops.org) for more detail.



Harrison County 2018 Field Day

	Herbicide Resistance
Waterhemp	Roundup, Cobra
Palmer Amaranth	Roundup, Callisto
Giant Ragweed	Roundup, Callisto
Note: Populations deemed resistant if <80% control or through molecular testing.	

Field Days

Two field days were hosted in 2018: one in June and one in July. A corn weed management field day took place June 18th southwest of Modale. Participants had the opportunity to observe the progress of field trials. They could also learn how to identify Palmer amaranth, as this site was the first case of Palmer amaranth in Iowa. The July field day was held at a no-till soybean field southwest of Logan, again featuring ten weed management programs. These replicated treatments allowed attendees to compare differences in weed management between treatments containing residual preemergence herbicides vs. no residual, and the effects of post-emergence residual applications. A video of the field day can be viewed at [protectiowacrops.org](http://protectiowacrops.org).

On August 2nd, a group of researchers and representatives from the United States Environmental Protection Agency (EPA) and the United States Department of Agriculture (USDA) heard from the Harrison County Pest Resistance Project Team regarding its efforts to share information on local weed resistance in the county. The team hosted the EPA and USDA personnel on a tour of the no-till soybean field. The Harrison team recognizes that the EPA and USDA are also part of the overall agricultural community that must be engaged to fully deal with pest resistance management.



Field infested with giant ragweed