Concerns about Herbicide Resistant Weeds in Iowa

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Abstract
While the evolution of herbicide resistance in weeds is not a new issue, and Iowa has long had weeds with resistance to herbicides, there have not been any field-scale problems with resistance to glyphosate or PPO inhibitor herbicides identified. Iowa State University Weed Science has always recommended that growers utilize a diverse weed management program and not focus on one herbicide that is applied repeatedly.

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Concerns about Herbicide Resistant Weeds in Iowa

By Mike Owen, Department of Agronomy

While the evolution of herbicide resistance in weeds is not a new issue, and Iowa has long had weeds with resistance to herbicides, there have not been any field-scale problems with resistance to glyphosate or PPO inhibitor herbicides identified, Iowa State University Weed Science has always recommended that growers utilize a diverse weed management program and not focus on one herbicide that is applied repeatedly.

Despite these recommendations, ISU Weed Scientists have received numerous calls during the past few years about difficulties controlling weeds with specific herbicides. In order to investigate these problems, approximately 15 demonstrations were established this spring in grower fields to determine the responses of common waterhemp and giant ragweed to commonly used herbicides. The fields were selected because of grower complaints and alleged failure of herbicides to control the specific weeds in these fields.

Early results from these in-field demonstrations are now available and it is clear that the herbicide resistance weed situation in Iowa has changed. Our preliminary results suggest that Iowa has populations of common waterhemp that are resistant to PPO inhibitor herbicides. We have also identified populations of giant ragweed that appear to have evolved resistance to glyphosate. At this time, we have not documented how widely spread these problems have become or the specific details about the alleged resistance. Research to better describe the weed resistance is underway.

It is important to reinforce that these data are preliminary and further research must be done to fully understand the evolved herbicide resistance in these weed populations. However, the preliminary data are sufficiently robust to indicate that Iowa has a building problem of evolved resistance to herbicides in several important weed species. Recognize that the herbicide does not cause the evolution of resistance in weeds, but rather the management decision to use a specific herbicide and how that herbicide is used facilitates the selection for the resistant weeds. As ISU Weed Science has suggested for many years, it is not if herbicide resistant weeds will evolve in Iowa; it is when the resistant weed populations will be recognized. The when is now and growers must change the strategies that have been used historically to control weed, or face the inevitability that herbicide resistant weeds will become a more serious economic issue.

More information about weed management, protecting crop yields, and herbicide resistance on the ISU Weed Science Webpage (www.weeds.iastate.edu) .

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