



Screening of Herbicide-Resistant Weeds in Oklahoma

Misha R. Manuchehri

Small Grains Extension Weed Specialist

Todd A. Baughman

Weed Scientist

Why should I be concerned about herbicide-resistant weeds?

Herbicide resistance is an increasing concern in Oklahoma crop production. Resistant weeds naturally exist in the Oklahoma landscape. However, we select for resistant populations with the continual use of a single herbicide or single mode of action. Given enough time and herbicide applications, resistant weeds will develop and can quickly take over a field. This is especially true in no-till or mono-crop systems, where herbicides or the same herbicides are the primary tool used for weed management. Herbicide-resistant weed populations limit effective herbicide options, complicate weed management decisions, and often increase weed management costs.

Why should I submit a sample?

The only way to know for sure if resistance is developing in your field is to test the suspected weeds. Early detection of herbicide-resistant weeds is an important step in designing an effective weed management program to prevent the development and spread of the resistant weed. Screening of potentially resistant weeds is provided by the Oklahoma Cooperative Extension Service, the Oklahoma Wheat Commission and the National Institute of Food and Agriculture, U.S. Department of Agriculture (award number 2014-70008-22570), making it a FREE service to any producer in Oklahoma.

Which weeds are of greatest concern?

Pigweed species, Italian ryegrass, cheat, maretail/horseweed, kochia, giant ragweed and Johnsongrass are some of the weeds most likely to develop resistance to commonly used herbicides in Oklahoma crops. However, because of the diversity of crop production in Oklahoma, there are many other weeds that may be of concern.

What happens after I submit a sample?

After a sample is received at OSU, the seed will be grown in greenhouse facilities. Depending on the weed species, the crop from which the sample was collected and herbicide use history, the sample will be screened with one or several herbicides. Approximately three weeks after treatment, treated plant

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samples will be compared to nontreated and known-susceptible check samples to determine if resistance is present. Once the sample has been evaluated, the results will be summarized and returned to the producer who submitted the sample.

How do I collect and submit a sample?

- Seed should be collected from fields sprayed during the current cropping season. Avoid collecting seed from field edges or areas not treated. Contact your local OCES County agricultural educator for assistance in seed collection.
- If possible, collect seeds from at least five mature plants. Maturity can usually be determined by how easily the seed will shatter from the seedhead. It also is important to collect enough seed for greenhouse testing—enough to fill half of a small coffee cup will provide plenty of seed for testing. Place seeds in a paper bag or large envelope for mailing.
- Each weed species should be submitted as a separate sample. Likewise, samples from multiple fields should be submitted separately.
- Complete the information form included with this fact sheet, and submit it with your seed sample. Seed samples and information should be sent to:

The local county Extension office

or

Misha Manuchehri
Dept. of Plant and Soil Sciences
Oklahoma State University
371 Ag Hall
Stillwater, OK 74078

If you have any questions, please contact your county OCES agricultural educator or Misha Manuchehri, OSU Small Grains Extension Weed Specialist, at (405) 744-9588 or misha.manuchehri@okstate.edu for more information.

Sample Submission Form

Please provide as much information as possible. Screening results will be shared with OCES county and area personnel unless otherwise requested. Information and data collected with the exception of personal information may be used for research purposes and OCES reports.

Grower information

Name: _____
 Address: _____
 City: _____, OK Zip: _____
 County: _____
 Phone: _____ Email: _____

Field information and history

Weed species submitted: _____
 Herbicide(s) that you suspect the weed is resistant to: _____
 Location (legal description, nearest intersection, GPS coordinates, etc.): _____

<i>Year & crop grown</i> (List most recent crop first)	<i>Tillage practices</i> (conventional, no-till, etc.)	<i>Herbicides applied</i>
Year: Crop:		PREEMERGENCE: POSTEMERGENCE:
Year: Crop:		PREEMERGENCE: POSTEMERGENCE:
Year: Crop:		PREEMERGENCE: POSTEMERGENCE:
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