

Giant Foxtail Management in Soybeans



Giant Foxtail Distribution and Biology

- Giant foxtail is a summer annual weed that is problematic throughout most parts of the U.S., especially in the northern and eastern corn belt. It has a round stem, hairy ligule and a very distinctive seedhead.



- Germination occurs in spring. The emergence period for giant foxtail is lengthy, and seeds can emerge from soil depths of less than one inch. Seeds set in late summer or early fall, and then the plant dies.
- Giant foxtail grows best in compacted soils with high levels of nitrogen and phosphorus but is adaptable to many soils and can tolerate drought.
- Giant foxtail seed production varies from 500 to 2,500 seeds per plant, averaging about 900 seeds per plant. The seed longevity for giant foxtail is very short. Many seeds germinate within the first year without being dormant. However, seed can lay dormant in the soil for a couple of years before germinating.

Herbicide Resistance in Giant Foxtail

- Giant foxtail has developed resistance to three herbicide sites of action: Group 1 (ACCase Inhibitors), Group 2 (ALS Inhibitors) and Group 5 (Photosystem II Inhibitors)
- Resistance to Group 1 herbicides (ACCase Inhibitors) was identified in Wisconsin, Iowa and Illinois as early as 1991.
- Resistance to Group 2 herbicides (ALS Inhibitors) has been identified in Minnesota, Wisconsin, Pennsylvania, Indiana, Michigan and Illinois.
- Resistance to Group 5 herbicides (Photosystem II Inhibitors) was identified in Maryland and Iowa.



John D. Byrd, Mississippi State University, bugwood.org


Management of Giant Foxtail in Soybeans

Follow the steps below to manage herbicide-resistant and susceptible giant foxtail populations in soybeans. Using cultural practices along with chemical control diversifies control and reduces the risk of developing herbicide resistance if resistance is not already present.

- 1. Start Clean!** Control existing vegetation with tillage or burndown herbicides. Use the proper residual chloroacetamide or dinitroaniline herbicide (group 15 or group 3) to provide residual control and prevent giant foxtail from emerging. Ensure there is no emergence of giant foxtail before planting.
- 2. Apply Postemergence Herbicides Early.** Applications should be timed to target plants when they are young (4 inches or less in height) to prevent the weed from becoming a bigger problem later in the season. If you have populations that are resistant to ACCase (group 1) or ALS (group 2) herbicides, your postemergence herbicide program will be reliant on glyphosate (group 9) or glufosinate (group 10). Add a group 15 herbicide with your postemergence herbicide to provide additional residual control during the growing season. Spray glufosinate on small weeds on a hot sunny day for best results.
- 3. Use Multiple Herbicide Sites of Action.** Both pre-emergence and post-emergence herbicide applications should contain multiple sites of action to diversify control and manage resistance development.
- 4. Scout 14 Days After Application.** Scouting two weeks after applying herbicide helps identify any additional weeds that may have emerged and allows time for follow-up applications to control late-season escapes that could contribute to the weed seed bank.
- 5. Eliminate Plants That Will Produce Seed.** To reduce giant foxtail problems in the future years, do not let escaped plants go to seed. Hand weed or treat with herbicides to reduce or eliminate seed production.
- 6. Pay Attention to Patches of Giant Foxtail That Appear More Difficult to Control.** You might have a resistance problem developing in your field. Look for mixtures of live and dead plants to provide early indications of resistance to herbicides developing in your field. Implement alternative strategies in these fields to deal with resistant populations before the infestation is allowed to spread.

For more information and links to additional resources, visit growiwm.org/take-action-home/.

Technical editing for this publication was led by Bill Johnson, Ph.D., Purdue University. The United Soybean Board and all Take Action partners neither recommend nor discourage the implementation of any advice contained herein and are not liable for the use or misuse of the information provided.

Brought to you by the soy checkoff. 
©2019 United Soybean Board
Updated April 2019 [58535-2-4/19]

