

Barnyardgrass Management in Soybeans



Barnyardgrass Distribution and Biology

- Barnyardgrass (*Echinochloa crus-galli*) is a summer annual weed commonly found throughout the Midwestern and Southern soybean-producing areas.
- Jungle rice (*Echinochloa colona*), an awnless form, also called awnless barnyardgrass, is the most prevalent barnyardgrass species in the mid-South.



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- Both species can be more difficult to control than other summer annual grass weeds because of greater natural tolerance to postemergence herbicides and prolonged emergence.
- Differentiating barnyardgrass (*Echinochloa* spp.) from other grasses in both the seedling and mature stages is relatively simple. Barnyardgrass is one of the few grass weeds that does not have a ligule (hairs or membranes) at the leaf collar.
- This weed is also more tolerant of saturated soils and flooded conditions than most summer annual grass weeds that infest soybeans.



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- Barnyardgrass germinates from early spring to early summer and can mature in as little as 42 days. It flowers from June–October and produces seeds in the fall — as many as 40,000 seeds per plant.

Herbicide Resistance in Barnyardgrass

- Herbicide-resistant barnyardgrass is widespread in rice-growing regions of the United States. Soybean is also a major crop in these areas.
- Resistance to propanil (group 7), fenoxaprop (group 1) and quinclorac (group 4) has been well-documented in Louisiana and other Southern states.
- Many resistant populations are known to have resistance to more than one of the herbicide sites of action mentioned above.
- Glyphosate-resistant jungle rice (awnless barnyardgrass) has been confirmed in Mississippi and Tennessee.
- Researchers are now investigating glyphosate-resistant jungle rice populations for clethodim resistance.



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Management of Barnyardgrass in Soybeans

Follow the steps below to manage barnyardgrass populations in soybeans. Best management practices include the following:

- 1. Start Clean!** Control existing barnyardgrass plants with tillage or burndown herbicides prior to crop emergence. Use an appropriate residual chloroacetamide (group 15) or dinitroaniline herbicide (group 3) to provide several weeks of residual control and build flexibility into the postemergence application window.
- 2. Apply Postemergence Herbicides Early.** Applying herbicides when plants are small (4 inches or less in height) will reduce the risk of plants surviving treatment. For populations resistant to ACCase (group 1) or ALS (group 2) herbicides, postemergence herbicide programs should include 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. Apply higher rates of glufosinate to small weeds on a hot sunny day for best results, and follow with a second application as necessary where control is incomplete.
- 3. Use Multiple Herbicide Sites of Action.** Both preemergence and postemergence herbicide applications should contain multiple sites of action, where possible, to improve control and slow the development of herbicide resistance.
- 4. Scout 14 Days After the Initial Postemergence 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 barnyardgrass problems in 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 Barnyardgrass That Appear More Difficult to Control.** You might have a resistance problem developing in your field. Look for mixtures of live and dead plants that are early indications of resistance. Implement alternative strategies in these fields to deal with resistant populations before the infestation increases and spreads.

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

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