

Waterhemp Species

WEED BIOLOGY

- Although native to the U.S., waterhemp was not considered a major agronomic problem until the 1980's—reduced tillage systems, herbicide-resistant biotypes, and simplified weed management programs contributed to its increased prevalence.
- While most common in the Midwest, waterhemp may also be found from Texas to Maine. Historically, waterhemp is divided into two species—common waterhemp and tall waterhemp.
- Waterhemp seedlings are typically hairless with waxy or glossy leaves. Once they become established, they have a rapid growth rate relative to other weeds—50 to 70% greater, in fact, than that of many other annual species.¹
- Tall waterhemp has a smooth, erect stem that can grow to more than 8' tall and has small, green flowers. Common waterhemp also has smooth leaves and stems, but does not grow as tall. Its stem color can range from yellowish-green to red to reddish-purple.
- Waterhemp is readily transported when equipment is moved from field to field.

¹ Iowa State University (ISU): 2004 Weed Science Society of America—North America Weed Management Plant Species Workshop.

² Bensch, C. N., Horak, M. J., and Peterson, D. E. 2003. Interference of redroot pigweed (*Amaranthus retroflexus*), Palmer amaranth (*A. palmeri*), and common waterhemp (*A. rudis*) in soybean. *Weed Sci.* 51(1):37-43.

³ Steckel, L. E. and Sprague, C. L. 2004. Common waterhemp (*Amaranthus rudis*) interference in corn. *Weed Sci.* 52(3):359-364.

⁴ Heap, I. The International Survey of Herbicide Resistant Weeds. Online. Internet. April 15, 2011. Available [www. weedscience.com](http://www.weedscience.com).

⁵ Stachler, Jeff. "Preemergence Herbicides in Conventional Sugarbeet." *North Dakota State University Crop & Pest Report* 12 May 2011: 7.

This document is intended to provide information about this weed and guidelines for control. As a tough-to-control weed, knowledge about the biology and weed control programs will help in their management.



WEED ENVIRONMENT

- The native habitat for waterhemp is flood plains and other wet, low-lying areas. However, the weed is also well adapted to conservation tillage and no-till.
- Waterhemp can germinate over a relatively long time period and grow rapidly, making its management programs challenging.
- Waterhemp's architecture and waxy, narrow leaves reduce herbicide interception, making herbicide uptake challenging.
- When common waterhemp is allowed to compete with soybeans during the growing season, it can cause yield losses as great as 56% when at densities of 1 plant per square foot.² Likewise, common waterhemp at a population of 25 plants per square foot can cause up to 74% yield loss in corn.³
- Widespread resistance to herbicide chemistries, including triazines, ALS, PPO inhibiting herbicides, and glyphosate, has been documented.
- Glyphosate resistance is confirmed in common waterhemp in Minnesota, Illinois, Kansas, and Missouri, and North Dakota.^{4,5}

TREATMENT RECOMMENDATIONS

Scout fields and control weeds throughout the season. Proper application timing protects yields, ensures correct use rate for weed size, and considers the impact of environmental conditions on performance.

ROUNDUP READY® AND GENUITY® ROUNDUP READY 2 YIELD® SOYBEANS

- Scout fields before and after each burndown and in-crop application.
- Start clean with a burndown herbicide or tillage. Tank-mix Roundup® agricultural herbicides with dicamba or 2,4-D to control existing weeds. (Consult label for plant back timing.)
- Apply a residual herbicide containing flumioxazin (Valor®, Valor® XLT, Gangster®) or sulfentrazone (Authority® First, Authority® Assist, Authority® XL, Authority MTZ®).
- In-crop, apply Roundup PowerMAX® at a minimum of 22 oz/A before waterhemp exceeds 4" in height.
- Roundup PowerMAX® may be tank-mixed with other herbicides, including lactofen (Cobra®) or fomesafen (Flexstar®), if additional postemergence waterhemp control is needed. Acetochlor (Warrant™ Herbicide) applied postemergence can provide residual control.

ROUNDUP READY® CORN 2†

- Start clean with a burndown herbicide or tillage. Early-season weed control is critical in corn to maximize yield potential.
- Apply a preemergence residual herbicide, such as TripleFLEX™ or other residual herbicides, at the recommended rate.
- Or, apply a preemergence residual herbicide containing atrazine (Harness® Xtra, Degree® Xtra) at the recommended rate, tank-mixed with Roundup PowerMAX® at a minimum of 22 oz/A in-crop before waterhemp exceeds 4" in height.
- Follow both programs with a postemergence in-crop application of Roundup PowerMAX® at a minimum of 22 oz/A for additional waterhemp flushes before they exceed 4" in height.
- Tank-mix other herbicides, such as 2,4-D, dicamba (Clarity®, Banvel®, Distinct®, Status®), or topramezone (Impact®) with Roundup PowerMAX® if necessary for enhanced postemergence waterhemp control.

† Includes corn with Roundup Ready® 2 Technology.

ROUNDUP READY® AND GENUITY® ROUNDUP READY® FLEX COTTON

- Start clean with a burndown herbicide or tillage. Tank-mix Roundup PowerMAX® with dicamba or 2,4-D. (Consult label for plant back timing.)
- A preemergence residual herbicide containing pendimethalin (Prowl® H2O), fomesafen (Reflex®), or flumioxazin (Valor®, Valor® XLT, Gangster®) should be applied.
- In-crop, apply Roundup PowerMAX® at a minimum of 22 oz/A before waterhemp exceeds 4" in height.
- Tank-mixing acetochlor (Warrant™ Herbicide), metolachlor (Dual II Magnum®), or pyriithiobac (Staple®) with Roundup PowerMAX® can provide additional residual control.



MINIMIZE THE RISK OF WEED RESISTANCE

- *Apply integrated weed management principles. Use multiple modes-of-action with overlapping weed spectrums in rotation, sequences, or mixtures.*
- *Use the full recommended herbicide rate and proper application timing for the hardest-to-control weed species in the field.*
- *Scout fields after herbicide application to ensure control has been achieved. Avoid allowing weeds to reproduce by seed or to proliferate vegetatively.*
- *Monitor site and clean equipment between sites.*

RATE YOUR RISK, KNOW YOUR OPTIONS. WWW.WEEDTOOL.COM

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