

Management Guide for Velvetleaf

Monsanto is committed to providing the information and product recommendations necessary to minimize the risk of developing weed resistance. The information below is targeted at increasing awareness of important weeds and helping preserve glyphosate efficacy.

Velvetleaf Biology

- Velvetleaf originated in either China or India, and arrived in North America sometime around 1700.
- Velvetleaf, also known as buttonweed or butterprint, is an annual weed with a strongly developed taproot and stem.
- Leaves are large, heart-shaped and pointed with a soft, velvety, hairy surface, which can reduce herbicide uptake.
- Velvetleaf is negatively impacted by crop competition. However late emerging velvetleaf is capable of producing viable seeds.
- Velvetleaf is a prolific producer of seeds and these seeds can remain viable and dormant in the soil for many years.¹
- In soybean fields, 2.5 to 5 velvetleaf plants per 10 square feet can cause yield losses of 25 to 40 percent.¹

Weed Environment

- ✓ Velvetleaf is found principally in row crops but may also be a problem in gardens and disturbed habitats.
- ✓ Leaves of velvetleaf plants drop toward the stem in the late afternoon, making herbicide coverage more difficult. Early daytime herbicide applications are generally most effective.
- ✓ Velvetleaf germinates relatively early in the growing season and has concise germination events.
- ✓ No known cases of resistance to glyphosate herbicides have been confirmed.²

¹ www.wssa.net

² Heap, I. The International Survey of Herbicide Resistant Weeds. Online. Internet. July 06, 2005. Available www.weedscience.com

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Treatment Recommendations¹

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[®] 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 containing atrazine such as Harness[®] Xtra or Degree[®] Xtra at the recommended rate. Atrazine is an effective preemergence product – consider adding more atrazine to premixes for heavy velvetleaf infestations.
- ✓ Or apply a preemergence residual herbicide containing atrazine at the recommended rate tank mixed with Roundup WeatherMAX[®] at a minimum of 22 oz/A in-crop before velvetleaf exceeds 4 inches in height.
- ✓ Follow with a postemergence in-crop application of Roundup WeatherMAX at a minimum of 22 oz/A for additional velvetleaf flushes before they exceed 4 inches in height.
- ✓ Tank mix other herbicides such as 2,4-D or dicamba (Clarity[®], Banvel[®], Marksman[®] or Distinct[®]) with Roundup WeatherMAX if necessary for enhanced postemergence velvetleaf control.

Roundup Ready Soybeans

- ✓ Scout fields before and after each burndown and in-crop application.
- ✓ Start clean with a burndown herbicide or tillage. Tank mix with 2,4-D to control existing weeds and tough-to-control weeds such as velvetleaf.
- ✓ If you have dense stands of velvetleaf, use one of many available residual herbicides such as flumetsulam (Python[®]), cloransulam (FirstRate[®]) or alachlor (INTRRO[®]).
- ✓ In-crop, apply Roundup WeatherMAX at a minimum of 22 oz/A before velvetleaf exceeds 4 inches in height.
- ✓ If an additional flush of velvetleaf occurs, observe maximum annual application rates.
- ✓ Roundup WeatherMAX may be tank mixed with other herbicides such as cloransulam (FirstRate) if additional postemergence velvetleaf control is needed.

Minimize the Risk of Weed Resistance

- **Start clean and control weeds early.**
- **Use Roundup Ready Technology as your foundation.**
- **Add other herbicides and cultural practices where appropriate as part of the Roundup Ready Cropping System.**
- **Use the right rate at the right time.**
- **Control weeds throughout the season and reduce the weed seed bank.**

Report incidences of repeated non-performance of any Monsanto branded herbicide to your local Monsanto retailer or call 1-800-ROUNDUP.

This is not a product label. Always read and follow label directions for all products used in tank mixtures. Always predetermine the compatibility of tank mixtures by mixing small proportional quantities in advance. Monsanto has not tested all recommended tank mix product formulations for compatibility or performance.

¹This fact sheet is issued to clearly describe use recommendations permitted under FIFRA Section 2(ee) as not being inconsistent with product labeling, or is issued to highlight an approved use from the product labeling. It is a violation of federal law to use any registered pesticide product in a manner inconsistent with its labeling. Read and follow all precautions and use instructions contained within the labeling. The applicable labeling for all products must be in the possession of the user at the time of application. Some recommended pesticide products are not registered in all states. Check with the product manufacturer or your dealer for products registered in your state. The distribution, sale or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited.

These recommendations are for all states except Texas.

ALWAYS READ AND FOLLOW LABEL DIRECTIONS: Roundup Ready[®] crops contain genes that confer tolerance to glyphosate, the active ingredient in Roundup[®] agricultural herbicides. Roundup agricultural herbicides will kill crops that are not tolerant to glyphosate. Harness[®] brands, Degree Xtra[®], and INTRRO[®] are restricted use pesticides and are not registered in all states. The distribution, sale or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local Monsanto dealer or Monsanto representative for the product registration in your state. Harness[®], Degree XTRA[®], INTRRO[®], Roundup[®], Roundup Ready[®] and Roundup WeatherMAX[®] are registered trademarks of Monsanto Technology LLC. All other trademarks are the property of their respective owners.

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