

Control of Lambsquarters in Corn and Soybeans

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Common lambsquarters biology

- Lambsquarters is one of the most problematic weeds in the North Central region. It can germinate from mid-April through June. It is one of the first summer annuals to emerge in the spring and can be present before crops are planted.
- Corn yield losses as high as 44% and soybean yield losses as high as 40% can occur with season-long interference.
- Lambsquarters is difficult to control with postemergence herbicides when more than 4 to 6 inches tall. Studies have shown that control can be reduced in cool, wet, or dry environments. Under these conditions, lambsquarters can develop a thicker layer of waxes on the leaf surface, which may interfere with herbicide uptake.
- Triazine-resistant biotypes are wide spread, and ALS-resistant biotypes have been identified in Ohio and Michigan. Lambsquarters populations with reduced sensitivity to glyphosate have also developed in response to repeated use of glyphosate in Roundup Ready crops.

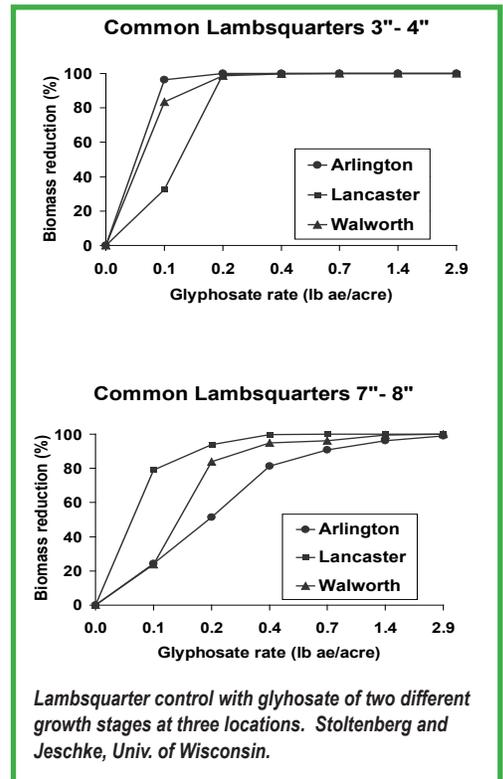


Control of lambsquarters with POST applications of glyphosate

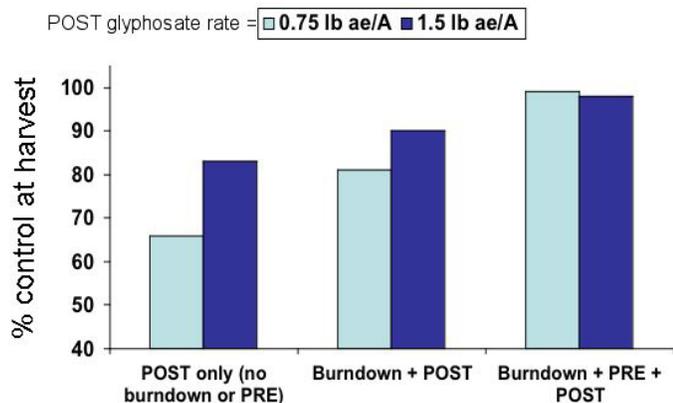
- Postemergence applications of glyphosate can be inconsistent for control of lambsquarters. Control varies with the size and age of plants, and is also affected by environmental conditions. Control is more variable when the plants have more than 8 nodes and are more than 6 inches tall.
- In soybeans, only a few POST herbicides control lambsquarters.

Using PRE herbicides to control lambsquarters

- Lambsquarter is effectively controlled with most PRE herbicides. There is a far greater number of PRE soybean herbicides that are effective on lambsquarters than POST herbicides.
- PRE herbicides reduce early-season competition from lambsquarters and other weeds, and result in smaller weeds at time of POST treatments.
- Control of lambsquarters in Roundup Ready soybeans is much more consistent with a combination of PRE herbicides and POST glyphosate application, compared to just POST applications of glyphosate.



Control of lambsquarters in Roundup Ready soybeans



Results represent the average of 5 sites in IN and OH, using lambsquarters populations with reduced sensitivity to glyphosate. Burndown = glyphosate + 2,4-D ester. PRE = Gangster.



Response of two lambsquarters populations to glyphosate at 14 days after application.

The following herbicides have activity on lambsquarters. Preemergence herbicides are more consistently effective than postemergence herbicides. See "Weed Control Guide for Ohio and Indiana" for more information on herbicide effectiveness.

Timing	Corn	Soybean
PRE	Atrazine*, Balance Pro, acetochlor + atrazine*, alachlor + atrazine*, Callisto, dimethenamid-p + atrazine*, Hornet*, Lexar, Lorox, Lumax, metolachlor + atrazine*, s-metolachlor + atrazine*, pendimethalin, Python*, Radius, simazine*, SureStart	Authority First/Sonic, Authority MTZ, Canopy DF/EX*, Command, Enlite, Envive, FirstRate*, Gangster, Lorox, metribuzin*, pendimethalin, Pursuit*, Python*, Scepter*, Spartan, trifluralin, Valor, Valor XLT
POST	2,4-D, atrazine*, bromoxynil, Callisto, Celebrity Plus, dicamba, Distinct, Equip, glyphosate, Halex GT, Impact, Laddok*, Laudis, Liberty, Lightning*, NorthStar, Resolve*, Shotgun, Status, Yukon	Extreme, Glyphosate, Harmony GT*, Raptor*, Synchrony STS*

*Reported Resistance in Indiana and/or Ohio to triazines and ALS inhibitors.

Key points for controlling lambsquarters in soybeans and corn

- Do not plant into existing stands of lambsquarters. Start weedfree at the time of planting by using tillage or a preplant herbicide treatment of 2,4-D ester plus either glyphosate or Gramoxone. In corn, a combination of 2,4-D plus atrazine will also control existing plants.
- Apply PRE herbicide(s) for control of lambsquarters, which can provide season-long control. PRE herbicides reduce early-season weed density and the rate of weed growth, creating more flexibility in the POST application window.
- Apply POST treatments when lambsquarters are less than 6" and have less than 6 nodes.
- In Roundup Ready crops, use a rate of 1.1 to 1.5 lb ae/A of glyphosate in POST applications. Use a rate of 1.5 lb ae/A where lambsquarters are more than 6" tall.
- In fields with a history of poor lambsquarters control with glyphosate, follow these additional guidelines: 1) use a glyphosate rate of 1.5 lb ae/A in the first POST application; and 2) make a second POST application 3 weeks after the first application, using a glyphosate rate of 0.75 lb ae/A.

Note on glyphosate rates. Glyphosate rates are shown here as "lbs ae/A", or "pounds of acid equivalent per acre". The rate of "1.1 lb ae/A" corresponds to: Roundup WEATHERMAX/PowerMAX - 33 oz/A; Touchdown Total/Duramax - 36 oz/A; all glyphosate products containing 3 lbs glyphosate acid per gallon - 48 oz/A. See Table 23 in the "Weed Control Guide for Ohio and Indiana" for more information.

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