

Fall Herbicide Applications for Winter Annual Weed Control

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Winter annual weeds are a growing issue in Nebraska row crops. The increase in winter annual prevalence is likely, in part, due to:

- Reduced use of residual pre-emergence herbicides in glyphosate based cropping systems.
- A shift to total post-emergence herbicide programs, primarily based on glyphosate.
- An increase in the adoption of no-till practices.

There are numerous winter annual weed species present in Nebraska fields (Table 1). An excellent North Central Region publication on winter annual identification can be viewed at the following address: (<http://extension.missouri.edu/explorepdf/regpubs/ncr614.pdf>).

Winter annuals begin germination in early fall as temperatures cool, commonly from mid-September through November. They then overwinter and complete their life cycle by mid-summer. Most of the broadleaf species have a rosette growth habit when young. Because the seedlings are small and grow close to the ground, they are easily overlooked with a casual scouting. An excellent time to scout is during harvest. When you get out of the combine, take a moment and look at the soil for small germinating plants.

Since most producers have not been accustomed to controlling winter annuals, populations have flourished in recent years. If winter annuals have been allowed to go to seed for a number of years, the weed seedbank for those species have likely built to a point where scouting and herbicide control may be necessary each year.

Table 1. Common Winter Annual Species of Concern in Nebraska Row Crops.

Broadleaf Species	Grass Species
Catchweed bedstraw (<i>Galium aparine</i>)	Annual bluegrass (<i>Poa annua</i>)
Common chickweed (<i>Stellaria media</i>)	Carolina foxtail (<i>Alopecurus carolinianus</i>)
Corn speedwell (<i>Veronica arvensis</i>)	Downy brome (<i>Bromus tectorum</i>)
Dandelion* (<i>Taraxacum officinale</i>)	Foxtail barley* (<i>Hordeum jubatum</i>)
Field pennycress (<i>Thlaspi arvense</i>)	Little barley (<i>Hordeum pusillum</i>)
Field pansy (<i>Viola rafinesquii</i>)	Ryegrass, annual or Italian (<i>Lolium multiflorum</i>)
Henbit (<i>Lamium amplexicaule</i>)	
Horseweed/Marestail (<i>Conyza canadensis</i>)	
Prickly lettuce (<i>Lactuca serriola</i>)	
Purslane speedwell (<i>Veronica peregrin</i>)	
Shepherdspurse (<i>Capsella bursa-pastoris</i>)	
Pinnate tansymustard (<i>Descurainia pinnata</i>)	
Virginia pepperweed (<i>Lepidium virginicum</i>)	

* Species is actually a perennial, however its time of most robust growth often coincides with winter annual growth and development.

Know how. Know now.



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Advantages of controlling winter annual weeds in the fall include:

- Herbicides are highly effective at controlling younger, smaller weeds. Fall applications target the most vulnerable growth stage of winter annuals. Most of these weeds are much harder to control in the spring after over-wintering, in particular, dandelion, marestail, field pennycress, and henbit.
- If soil moisture is in short supply, stopping winter annual growth in the fall and reducing subsequent populations in the spring can reduce water loss due to weeds.
- Fall applications, especially those with a long lasting residual activity, can potentially reduce the spring work load and allow producers to start timely planting.
- Fall in Nebraska is typically warmer than spring, thus allowing herbicide to work better in controlling weeds

Table 2 lists a number of effective herbicide options labeled for fall applications. In general, these herbicide options are highly effective on a broad spectrum of broadleaf winter annuals. For example, according to the current Guide for Weed Management in Nebraska, every herbicide or herbicide combination listed in Table 2 will control henbit at 90% or better when fall applied. If there is a significant population of winter annual grass species such as downy brome or Carolina foxtail in a field, the addition of glyphosate is probably needed to enhance grass control. For specific herbicide efficacy ratings on individual weed species, refer to the current Guide for Weed Management in Nebraska or the interactive online herbicide tables on the UNL Weed Science website (<http://weedscience.unl.edu>).

Some residual herbicides will control summer annuals until mid-May or early June. This can eliminate the need for a pre-emergence herbicide application in the spring, and protect yields until a timely post-emergence application can be made. Canopy EX+Classic and Valor XLT performed particularly well in our soybean trials this past spring where we had henbit, pennycress, tansymustard and marestail in the fall, and sunflower, velvetleaf, lambsquarters and Palmer amaranth in the spring. Authority First, Authority MTZ, Basis, Extreme, Princep, Python, and Valor SX controlled some, but not all of the summer annual species. Depending on the weed pressure and species present in your field, they may also be effective options.

Making a fall herbicide application can be an effective way to add another herbicide mode of action to your weed control program and reduce the risk of developing glyphosate resistance in some species, particularly marestail. With the increased cost of input prices for 2009, this is an excellent time to consider using generic herbicides or alternatives to glyphosate to reduce herbicide costs.

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Table 2. Common herbicides and tankmixes to consider for fall applications to control winter annual weeds.

Herbicide (Rate(s)/acre)	Estimated Cost (\$/acre)	2009 crop options
2,4-D Ester (1 qt)	\$4.75	Corn or Soybean
Authority First + 2,4-D (3.2 oz + 1 pt)	\$19.00	Soybean
Authority MTZ + 2,4-D (14 oz + 1 pt)	\$19.00	Soybean
Autumn ¹ (0.3 oz)	\$6.90	Corn or Soybean
Banvel (0.5 pt)	\$3.75	Corn or Soybean
Basis + 2,4-D (0.5 oz + 1 pt)	\$11.88	Corn
Canopy Ex (2 oz)	\$13.00	Soybean
Classic ¹ (1.5 oz)	\$25.00	Soybean
Extreme (3 pt)	\$18.00	Soybean
Generic Glyphosate (32 oz)	\$10.50	Corn or Soybean
Glyphosate + 2,4-D (24 oz + 1 pt)	\$10.30	Corn or Soybean
Gramoxone Inteon (1 qt)	\$9.50	Corn or Soybean
Princep + 2,4-D (1 qt + 1 qt)	\$12.75	Corn
Rage D-Tech (16 oz)	\$7.75	Corn or Soybean
Roundup PowerMAX (22 oz)	\$14.27	Corn or Soybean
Valor XLT ¹ (3 oz)	\$11.44	Soybean
Valor SX ¹ (3 oz)	\$15.00	Corn or Soybean

¹ The addition of 2,4-D or glyphosate can enhance and broaden the spectrum of weeds controlled.

REMINDERS:

Fall application of atrazine, or any product that contains atrazine, is prohibited in an annual corn/soybean, sorghum/soybean, continuous corn, or continuous sorghum rotation in Nebraska. Fall atrazine applications are permitted in fallowed ground following wheat harvest.

If marestail/horseweed is present, do not rely solely on glyphosate for control. Glyphosate-resistant marestail was confirmed in Nebraska in 2006. Adding another mode of action (2,4-D, dicamba) will help control glyphosate-resistant marestail, and will also reduce the probability of developing other glyphosate-resistant winter annual weeds.

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