

Controlling Winter Annual Weeds

Lowell Sandell, Mark Bernards and Stevan Knezevic

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Winter annual weed biology

Winter annuals germinate in the fall (September and October) and early spring (March and April). Most complete their life cycle by mid-summer. Many producers are not accustomed to scouting for winter annual weeds in the fall. They are busy with harvest and think that the growing season is over when harvest is complete. However, fall is the best time to scout for winter annual weeds, and it is often the best time to control them. Scouting for winter annuals requires walking a field. Winter annuals are typically very small, and many have a rosette habit and can be hidden by crop residue in the fall and early spring. They are easy to overlook with a casual “drive by” scouting of a field.

Correctly identifying a winter annual species is the first step in planning an effective control strategy. Table 1 lists some of the more common winter annual species encountered in Nebraska. An excellent North Central Region Publication on winter annual weed identification is “Early Spring Weeds of No-till Crop Production.” It may be ordered from the University of Missouri Extension, or viewed free of charge at: <http://extension.missouri.edu/explorepdf/regpubs/ncr614.pdf>.

Table 1. Common winter annual species of concern in Nebraska row crops.

Broadleaf Species	Grass Species
Catchweed bedstraw (<i>Galium aparine</i>) Common chickweed (<i>Stellaria media</i>) Corn speedwell (<i>Veronica arvensis</i>) Dandelion* (<i>Taraxacum officinale</i>) Field pennycress (<i>Thlaspi arvense</i>) Field pansy (<i>Viola rafinesquii</i>) Henbit (<i>Lamium amplexicaule</i>) Horseweed/Marestail (<i>Conyza canadensis</i>) Prickly lettuce (<i>Lactuca scariola</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>)	Annual bluegrass (<i>Poa annua</i>) Carolina foxtail (<i>Alopecurus carolinianus</i>) Downy brome (<i>Bromus tectorum</i>) Foxtail barley* (<i>Hordeum jubatum</i>) Little barley (<i>Hordeum pusillum</i>) Ryegrass, annual or Italian (<i>Lolium multiflorum</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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Control in corn and soybeans

Fall is often the optimal time for winter annual weed control, however utilizing tank mixtures pre-plant or pre-emergence can also be effective. As producers plant corn earlier, applications to control winter annuals at pre-emergence or even early post-emergence timings have become more common. In many instances producers are attempting to accomplish burndown and pre-emergence in one pass. Depending on the time of planting, some winter annuals will have flowered or even produced seed. Even though combining a burndown and pre-emergence application into one pass can be viewed as efficient time management, there are other costs associated with winter annual growth to or beyond flowering, including inefficient soil water use, nutrient tie up, and no reduction in the weed seed bank.

In corn, tank mixtures containing atrazine and 2,4-D or glyphosate are effective on common winter annuals such as henbit, field pennycress, shepherdspurse, and marestail. The chloroacetamide active ingredients (metolachlor, acetochlor, dimethenamid, etc) do not have foliar activity, so selecting one of these products with an atrazine premix (Bicep II Magnum, Breakfree ATZ, Cinch ATZ, Harness Xtra, etc.) or the addition of atrazine is necessary. Atrazine activity can be increased with the addition of COC +UAN, as long as the tank mix partners allow these adjuvants and the corn has not emerged. Products containing isoxaflutole (Balance Flexx, Corvus, Balance Pro) or ALS inhibiting herbicides like Steadfast or Basis do have foliar activity on winter annual weeds, however the addition of atrazine and 2,4-D or glyphosate is beneficial to broaden the spectrum of control.

2,4-D is effective against many winter annual species, but it can cause crop injury if used inappropriately and if environmental conditions are unfavorable. If 2,4-D (1 pt/ac) is used pre-plant producers should observe the 7 day interval between application and planting. If producers are attempting to control winter annuals early-post (spike to 8" corn), rates up to 1 pt/ac can be used. When the corn is taller than 8", the 2,4-D rate should be reduced to 0.5 pt/ac and drop nozzles used to avoid stalk brittleness and other injury.

In soybeans, ALS inhibiting herbicides such as Pursuit, Classic (Canopy, Envive or Enlite), Valor or Authority products in combination with 2,4-D or glyphosate, are effective on the these winter annual species. Be sure to observe the 7 day interval between application and planting if 2,4-D (1 pt/ac) is used. Producers should also be aggressive about marestail control. Producers should not rely solely on glyphosate for marestail control, since resistant populations have been identified in Nebraska. Marestail is relatively easy to control pre-plant, but effective post-emergence control options are very limited, especially in soybeans.

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