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Now's the time to control biennial weeds

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Abstract
April is an excellent time to treat pastures and other non-tilled areas for biennial weeds. The biennial thistles (musk, bull, tall, etc.) are all classified as noxious weeds by the Iowa Noxious Weed Law, but musk thistle is by far the most invasive and troublesome of this group. In recent years, several biennials in the Apiacae (carrot) family have become much more prevalent across Iowa, including wild carrot, wild parsnip, and poison hemlock. Wild carrot and poison hemlock are on the Iowa noxious weed list.

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Weed Management

Now's the time to control biennial weeds

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April is an excellent time to treat pastures and other non-tilled areas for biennial weeds. The biennial thistles (musk, bull, tall, etc.) are all classified as noxious weeds by the Iowa Noxious Weed Law, but musk thistle is by far the most invasive and troublesome of this group. In recent years, several biennials in the *Apiacae* (carrot) family have become much more prevalent across Iowa, including wild carrot, wild parsnip, and poison hemlock. Wild carrot and poison hemlock are on the Iowa noxious weed list. Biennials have a two-year life cycle: in the first year a basal rosette (circular cluster of prostrate leaves) is produced, in the second year a central flowering stalk elongates, and the plant dies after seed maturation.

Management of biennials is a two-step process. The first involves controlling existing plants to prevent seed production. The second step requires identifying, and eliminating, factors that allow the biennials to become established.

Step 1: The most common method of controlling biennials is the use of herbicides. Biennials are much more susceptible while in the rosette stage, so fall or early spring herbicide applications are the preferred treatment. Herbicides used in pastures for biennial control are listed in Table 1. The optimum time for treatment of biennial weeds differs from that for most perennial or annual weeds found in pastures. Scattered plants can be controlled by severing the root below the crown with a spade or similar tool. Mowing is another effective tactic, but timing is critical. The first mowing should be done before flowers fully expand in order to prevent seed production. Biennials have dormant crown buds that often initiate growth after removal of the primary stalk; thus, a second mowing 3 to 4 weeks after the initial mowing often is required.

Step 2: Biennials are most commonly found in low-maintenance perennial grasses (pastures, roadsides, etc.). Biennial seedlings are relatively weak compared to the perennial sod; thus, they are at a competitive disadvantage during the establishment phase. Enhancing the vigor of the sod can greatly reduce biennial infestations; therefore, overseeding, proper fertility management, and avoiding overgrazing can greatly reduce biennial weed infestations.

The number one problem in managing biennials is delaying herbicide application until after the stem has initiated elongation (bolting). Biennials become much more tolerant to herbicides at this stage and frequently escape control. Pastures, roadsides, and other habitats with a history of biennial weed problems should be scouted in early April and control programs initiated before bolting begins.

Wild parsnip rosette. The mature plant has a 3–4 ft flower stalk with yellow flowers. All parts of the plant contain a toxin that causes a severe skin rash. ***(Bob Hartzler)***

Table 1. Herbicides for control of biennial weeds in pastures.

Herbicide	Biennial Thistles	Biennial Apiaceae	Grazing Restrictions[1]
1.5–2 lb 2,4-D LVE	G–E	G–E	7 days for dairy animals
2,4-D + dicamba	G–E	G–E	Rate dependent for dairy
Cimarron (metsulfuron)	G	P	None
Cimmarron Max (metsulfuron + 2,4-D + dicamba)	G–E	G–E	7 days for lactating dairy animals
Grazon P&D (picloram + 2,4-D)	E	E	7 days for lactating dairy animals
Forefront (aminopyralid + 2,4-D)	E	G	None
Milestone (aminopyralid)	E	P	None
Overdrive (dicamba + diflufenzopyr)	G–E	G–E	None
Redeem (triclopyr + clopyralid)	E	G–E	14 days for lactating dairy animals

[1]Some products may have restrictions regarding hay harvest or transferring animals from treated areas following application.

Bob Hartzler is a professor of agronomy with research and extension responsibilities in weed management.