

The ultimate goal of controlling wild carrot, regardless of the method, should be to prevent seed production. A dense population of wild carrot can cause severe yield losses in corn and soybeans. Some wild carrot populations in Ohio are resistant to 2,4-D.

Wheat Stubble. Mow the wheat stubble before early August. Apply glyphosate (1.1 to 1.5 lbs. ae/A) or glyphosate + 2,4-D (0.75 lb. ae/A + 0.5 lb. ai/A) in October. This fall application is targeted at the plants that will flower and produce seed the following year.

Fall/preplant control. Wild carrot is most effectively controlled by fall application of glyphosate + 2,4-D (0.75 lb. ae/A + 0.5 lb. ai/A) or combinations of glyphosate or 2,4-D plus an ALS-inhibiting herbicide (Autumn Super, Resolve, etc.). Apply from early October into mid-November. For best results in spring, apply glyphosate plus 2,4-D (0.75 to 1.5 lbs. ae/A + 0.5 lb. ai/A) as an early preplant treatment soon after the plants begin to green up. Tillage is the most effective tool for control of wild carrot in the spring.

Corn. Wild carrot can be controlled or suppressed with postemergence corn herbicides. The most effective postemergence treatments include atrazine (2 lbs. ai/A), halosulfuron (1 to 1.3 oz./A), Yukon, or Accent Q. These should be applied with COC or MSO. Application of any of these herbicides with dicamba will generally improve control, and the addition of 28% nitrogen may increase effectiveness. Any postemergence treatment containing at least 1.5 pounds active ingredient/A of atrazine will provide fair to good control. Glyphosate (1.1 lbs. ae/A—glyphosate-resistant corn) will suppress or control wild carrot.

Soybeans. Most effective control in spring results from preplant application of glyphosate plus 2,4-D ester plus a chlorimuron-containing product. Follow fall or spring preplant treatments with a postemergence application of Classic (0.75 oz./A) or Synchrony XP (0.75 oz./A). Use COC or MSO with Classic and Synchrony to maximize control. Other effective postemergence options include mixtures of glyphosate with dicamba (Xtend soybeans) or 2,4-D (Enlist soybeans).

Cressleaf Groundsel/ Butterweed

Cressleaf groundsel is a winter annual weed that has become more prevalent in pastures and agronomic crop ground over the past decade. The small seeds produced by this weed allow it to thrive in reduced and no-till systems as well as poorly established pastures. Cressleaf groundsel emerges as a rosette in the fall then bolts, flowers, and produces seed in the spring. Basal rosette leaves are deep pinnate serrations with roundly lobed leaf margins.

The presence of this weed in pastures and hay fields is of greatest concern due to its toxicity to

livestock when ingested. Leaves, flowers, and seeds of cressleaf groundsel contain alkaloids that will cause chronic liver damage in livestock (seneciosis). Symptoms of seneciosis are loss of appetite, sluggish depressed behavioral patterns, and in extreme cases aimless walking without regard to fences or structures. Although cressleaf groundsel is not as toxic as many of its relatives in the *Packera* genus, livestock producers encountering this weed in pastures or hay should take steps to avoid feeding and ingestion by animals.

Fall prior to corn or soybeans. Apply from early October to mid-November. Effective treatments include the following:

- Combinations of 2,4-D plus either glyphosate, metribuzin, dicamba, paraquat, simazine (corn only), metribuzin, Canopy/Cloak DF/EX (soybeans only), or a product containing tribenuron and/or rimsulfuron (Basis, Express, Audit, Nimble, etc.). Maximum rate of rimsulfuron products is reduced prior to soybeans.
- Combinations of paraquat with metribuzin or simazine (corn only).

Spring burndown—corn and soybeans. For corn, combinations of 2,4-D plus glyphosate, paraquat or Acuron/Lexar/Stalwart 3W are effective. Paraquat treatments are most effective when applied with atrazine. For soybeans, combinations of 2,4-D plus glyphosate, paraquat, and/or Canopy/Cloak DF/EX are effective. Paraquat treatments are most effective when applied with metribuzin. Control of cressleaf groundsel in spring can be challenging when herbicides are applied to large plants under cool weather conditions. These conditions may result in substantial injury and necrosis of leaves, followed by regrowth from live buds on the plant. A follow up herbicide application may be required in these situations.

Wheat. Spring application of 2,4-D after full tiller is effective.

Pastures/grass hay. Small plants in rosette stage can be controlled with mixtures or premixes containing 2,4-D, or a combination of 2,4-D and dicamba, applied to rosettes in the fall or early spring prior to bolting. The goal should control when plants are small, so that they do not get to a size that grazing or harvest in hay becomes a problem. Plants that are larger, or bolting, are more difficult to control. Producers should be aware that applications of these herbicides will also kill favorable broadleaves (legumes) that are present in pastures.

Legume hay. Apply herbicides in fall or early spring when plants are in the small rosette stage. Herbicide options are limited to Pursuit or Raptor, and the combination of one of these with 2,4-DB (Butyrac).