Wild caraway
Identification and Management

The key to effective control of Wild caraway is eliminating seed production by cutting or pulling plants before seed set. Herbicides should also be applied in rosette stage or before seed set. Later in the season, cut seed heads to prevent seeds from maturing. Try to minimize disturbance caused by these control measures; restore and maintain native vegetation in such areas. Details on the back of this sheet can help to create a management plan compatible with your site ecology.

Wild caraway is designated as a “List B” species in the Colorado Noxious Weed Act. It is required to be either eradicated, contained, or suppressed depending on the local infestations. For more information visit www.colorado.gov/ag/csd and click on the Noxious Weed Management Program. Or call the State Weed Coordinator at the Colorado Department of Agriculture, Conservation Services Division, 303-239-4100.

Key ID Points
1. First year rosettes have carrot-like leaves and slender tuber.
2. Mature plants have hallowed stems & small white or pink flowers in umbrella-like clusters.

Habitats for Wild caraway include: mountain meadows, hayfields, irrigation ditches, roadsides, and disturbed areas. The plant prefers full sun and well drained soils. Wild caraway was originally planted as spice crop, but escaped and has proven to be extremely invasive.
**CULTURAL**
Wild caraway plants are sensitive to root disturbance and could be eliminated by tilling, although such practices are not likely to be suitable for natural areas. Best preventive practices include the elimination of seed production, and maintaining healthy native communities.

**BIOLOGICAL**
There is not any biocontrol species available to control Wild caraway. Biocontrol takes many years of research and development. For more information, contact the Colorado Department of Agriculture’s Insectary in Palisade, Colorado at 970-464-7916.

**MECHANICAL**
Hand-pulling of bolting stalks is effective at preventing seed production, but at maturity the seed heads are extremely fragile and shatter easily. At this stage, a plastic bag can be carefully placed over the mature plant, and closed tightly around the stem while hand-pulling. Carefully done, this method can remove seed without accidentally spreading it. Collected seed should be disposed of in landfill-bound garbage or thoroughly burned. This plant’s response to repeated mowing is to stay short (mowing height) and bloom.

### HERBICIDES
**NOTE:** The following are recommendations for herbicides that can be applied to range and pastures. Rates are approximate and based on equipment with an output of 30 gallons per acre. Always read, understand, and follow the label directions. The herbicide label is the LAW!

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Application Timing</th>
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<tbody>
<tr>
<td>Ainospyralid + Metsulfuron (Opersight)</td>
<td>2.5-3 oz. product/acre + 0.25% non-ionic surfactant</td>
<td>Apply at bolting to bud growth stages. (Spring to early summer; or fall rosettes) Not permitted for use in the San Luis Valley. See the label AND supplemental label regarding specific grazed or feed forage pre-cautions and restrictions. This is a treatment option for roadsides and non-crop; not recommended for forage producers.</td>
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<tr>
<td>Metsulfuron (Escort XP) + 2,4-D</td>
<td>1 oz. product/acre + 1 qt. 2,4-D/acre + 0.25 % v/v non-ionic surfactant</td>
<td>Apply at bolting to bud growth stages. (Spring to early summer, especially for hay producers; fall rosettes, but will likely need to treat again in the spring) May stunt grass growth.</td>
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<tr>
<td>2,4-D</td>
<td>2 qts./acre + 0.25 % v/v non-ionic surfactant</td>
<td>Apply at rosette to bud growth stages. This may require several years of treatment. (Spring to early summer, especially for hay producers; fall rosettes, but will likely need to treat again in the spring)</td>
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Additional herbicide recommendations for other species can be found at: [www.colorado.gov/agconservation/CSUHerbicideRecommendations.pdf](http://www.colorado.gov/agconservation/CSUHerbicideRecommendations.pdf)