Noxious Weed Management

This brochure was created to increase awareness of Noxious Weeds, the importance of identification, the importance of a weed management program, and some methods of weed control based on local, state, and national research-based information.

How do I control weeds on my property?

1. Identify the weeds on your property.
2. Once a weed is identified, understand the life cycle of the weed:
   - winter or summer annual
   - biennial
   - simple or creeping perennial
3. Understand the types of controls:
   - Preventative
   - Biological
   - Cultural
   - Chemical
   - Mechanical
4. Develop a weed management plan:
   - planning saves money and increases effectiveness
   - include long term monitoring to address any reinfestations.
   - timing is a critical part of successful weed control. Regardless of which combination of control methods are used, implementing those control methods at the correct stage of weed development will increase the chances for successful weed control in the shortest period of time, with the least cost.

What are noxious weeds?

Noxious weeds are non-native plants that disrupt native vegetation because they have no natural controls and are able to adapt to varied conditions. As a result of the Colorado Noxious Weed Act, these weeds have been placed on three separate lists (weed names are color-coded corresponding to the list they are on):

- **List A plants:** Eliminated everywhere
- **List B plants:** Spread should be stopped
- **List C plants:** Control is recommended

Effective management occurs over time and requires repeated exposure to the recommended techniques and control methods. After years of investment in mitigating the weeds on your property, the plant will eventually be destroyed.

This brochure is not meant to be all inclusive or restrictive, but offers guidelines and recommendations. References for this guide are thanks to the following sources:

US Department of Agriculture
http://plants.usda.gov/java/factSheet

CO Dept. of Ag - Noxious Weed Management Program
https://www.colorado.gov/pacific/agricultural/nocioseweeds

CO Weed Management Association - Noxious Weed Info.
http://www.cwma.org

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Small Acreage Management Specialist
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kara.harders@colostate.edu

Weed Control Methods

**Preventive:** Prevention is the first and, perhaps, the most important step in a weed control program. In addition, prevention is probably the most cost-effective method of weed control. Methods include:

- maintaining healthy pastures
- using weed-free crop seed
- weed-free manure and hay
- clean harvesting and tillage equipment, as well as the elimination of weed infestations in areas bordering cropland, and in irrigation ditches and canals.

**Cultural:** Methods include, and are not limited to:

- Establishing and managing an adequate population of desirable vegetation to compete with the weeds;
- utilizing livestock (cattle, goats, sheep) when possible;
- mulching, burning; and even plastic weed barriers.

**Mechanical:** Methods include, and are not limited to:

- Hand-pull, hoe, mow and tillage.

**Biological:** Biological weed control involves the utilization of natural enemies for the control of specific weed species. Biological weed control is never 100% effective, and can take 5 to 10 years for success. However, this method can be successful especially when combined with other control methods.

**Chemical:** Always read the label before using any herbicide! Weed control with herbicides is an effective tool for many target weed species. However, there are several aspects to consider when choosing a chemical program. These include: ID of target weed; herbicide selection; timing of application; susceptible crops or plant species near control areas; the number of applications per year, and the number of years for treatment. Sprayer calibration methods can be obtained from your local Extension office.

Fact Sheet: Sprayer Calibration Fundamentals
https://extension.colostate.edu/topic-areas/agriculture/sprayer-calibration-fundamentals-5-003/

Always add a nonionic surfactant (@ 0.32 oz/gal (1qt/100 gal) unless noted.)
**Field Bindweed**  
*Cirsium arvense* (L.) Scop.  
*Canada thistle*

**Keys to Id**
- Purple flowers form in clusters of 1-5 per branch.
- Floral bracts are spineless.
- Small heads, vanilla scent.

**Identification**
- Lifecycle: Perennial
- Growth form: Perennial forb
- Flower: Flowerheads are purple and borne in clusters of 1-5 per branch. Heads are only about 3/4 in wide. June-Oct.
- Seeds/Fruit: One-seeded fruits (achenes) are straw or light brown, straight or slightly curved
- Leaves: Leaves are spiny, alternate, oblong or lance-shaped, with the base leaves stalkless and clasping, or extended down along the stem.
- Stems: Mature plants range from 2-4 ft tall.
- Roots: Two types of roots, horizontal and vertical. The horizontal roots produce numerous shoots, while vertical roots store water and nutrients in their many small branches.
- Seedling: Early spring growth appears as rosettes with spiny-tipped, wavy leaves.
- Other: The floral bracts are spineless.

**Control**
- Mech: Cutting, mowing, or pulling has a negligible effect unless the plants are cut below the surface in the early seedling stage.
- Bio: The bindweed gall mite, Aceria mahlerbae, and bindweed moth, Tyta luctuosa, are effective.

<table>
<thead>
<tr>
<th>HERBICIDE</th>
<th>RATE</th>
<th>TIMING</th>
</tr>
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<tbody>
<tr>
<td>Clarity +</td>
<td>1 qt/acre</td>
<td>Just after full-bloom and/or fall.</td>
</tr>
<tr>
<td>2,4-D Amine</td>
<td>1 oz/gal water</td>
<td>DO NOT apply near nor under trees/shrubs or where soils have rapid permeability.</td>
</tr>
<tr>
<td>(temp must be below 85°)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tordon 22K*</td>
<td>1 qt/acre</td>
<td>Just after full-bloom and/or fall.</td>
</tr>
<tr>
<td><em>Restricted Use</em></td>
<td>1 oz/gal water</td>
<td>DO NOT apply near nor under trees/shrubs or where soils have rapid permeability.</td>
</tr>
<tr>
<td>Chlorsulfuron</td>
<td>1.25 qt/acre added to Tordon</td>
<td>Apply at mid-flowering to late fall</td>
</tr>
<tr>
<td>(Telar)</td>
<td>1 oz/gal</td>
<td></td>
</tr>
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**Fringed Sage**  
*Artemisia frigida*  
*Matsutake*

**Keys to Id**
- Mat-like with silvery color until production of flower stalks
- Strong sage smell can be found
- Bitter tasting

**Identification**
- Lifecycle: Perennial
- Growth form: Forb
- Flower: Yellow
- Leaves: Soft, silver, often in clusters of 3 or 5
- Stems: up to 1.5 ft tall

**Control**
- Mech: Cutting, mowing, or pulling has a negligible effect unless the plants are cut below the surface in the early seedling stage.

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**Hoary Cress**  
*Cardaria draba*  
*White tops*

**Keys to Id**
- White flowers.
- Grows erect 10-24" in height
- Leaf is 3/4-4" long with blunt white hairs.

**Identification**
- Lifecycle: Perennial
- Growth form: Forb
- Flower: Numerous white flowers with four petals, plant has white, flat-topped appearance. May-June.
- Seeds/Fruit: Seed capsules are heart shaped, and contain two reddish-brown seeds.
- Leaves: Alternate, blue green, and lance-shaped. Lower leaves are stalked, while the upper leaves have two lobes clasping the stem.
- Stems: Mature plants reach 2 ft tall with erect stems
- Roots: Rhizomatous; 29-32 inches deep

**Control**
- Mech: Mowing several times before the plants bolt stresses it and allows for better chemical efficacy.
- Hand pull small infestation, removal ALL roots.
- Bio: none currently available in Colorado.

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<tr>
<td>Metsulfuron</td>
<td>1 oz/acre</td>
<td>Apply at the early bud growth stage; i.e. &quot;broad head&quot; growth stage. (Early Spring to Early Summer)</td>
</tr>
<tr>
<td>(Escort XP)</td>
<td></td>
<td></td>
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<td>Chlorsulfuron</td>
<td>1 oz/acre</td>
<td>Apply at the early bud growth stage; (Early Spring to Early Summer)</td>
</tr>
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<td></td>
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<tr>
<td>Imazapic (Plateau)</td>
<td>12 fl. oz.</td>
<td>Apply at late flower to post-flower growth stage. (Late Spring to Mid Summer)</td>
</tr>
<tr>
<td></td>
<td>2 pints/acre methylated seed oil concentrate</td>
<td></td>
</tr>
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</table>
**Diffuse knapweed**
Centaurea diffusa Lam

**Keys to Id**
- Floral bracts have yellow spines with teeth like a comb and a distinct terminal spine
- Flowers are white or lavender
- Seedlings have finely divided leaves

**Identification**
- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- Flowers: Broadly urn-shaped, 0.6-0.8 in tall, terminal solitary or in clusters of 2-3. Floral bracts are yellowish with a brownish margin, fringed on the sides, and terminating in a slender bristle or spine.
- The heads contain two types of flowers, ray flowers, and clover leaves with teeth like a comb and a distinct terminal spine. Spines with teeth like a comb and a distinct terminal spine.
- Stems: Upright, 4-24 in tall, highly branched, angled, with short, stiff hairs on the angles.
- Seedling: Finely divided leaves; covered by short hair

**Control**
- Mech: Sever the root below the soil surface. Mowing is most effective when plants are at full-bloom.
- Bio: Livestock, seedhead weevil (Lariniidae minitus), and the root weevil fly (Cyphocleonus achates)

**HERBICIDE** | **RATE** | **TIME**
--- | --- | ---
Aminopyralid (Milestone) | 5-7 oz/acre | Spring
2,4-D Amine (temp must be below 85°F) | 1 qt/acre | Spring/fall
Clopyralid + Triclopyr (Redeem R&P) | 1.5-2 pints/acre | Rosette to early bolt stage

**Russian knapweed**
Acroptilon repens (L.) De Candolle

**Keys to Id**
- Distinguished by the pointed papery tips of the floral bracts.
- The roots are dark brown and have scale leaves.

**Identification**
- Growth form: Perennial forb
- Flower: Heads are urn-shaped, solitary, and composed of disk flowers. Floral bracts are broad, ovoid, entire, and greenish at the base with papery, finely hairy edges. The petals are pink or purple.
- Seeds: Oval, grayish or ivory, with long white bristles (pappus) at the tip when young.
- Leaves: Alternate. Lower stem leaves are narrowly oblong to lance-shaped, and deeply lobed. The upper leaves are oblong, toothed, and become progressively smaller. Rosette leaves are lance-shaped, tapering at both ends, broadest at the tip.
- Stems: Mature plants are between 18-36 inches tall. The stems are erect, thin, stiff, branched, and when young are covered with soft, short, gray hair.
- Roots: Well-developed, recognizable by their black color and presence of small scale leaves.
- Seedling: The seed leaves are oval, with shallow toothed or smooth edges. The surface of the leaves looks grayish-green, but not hairy.

**Control**
- Mech: Mowing repeatedly before the plants bolt during the summer, then herbicide in the fall.
- Bio: Gall midge (Jaapiella ivanovichii), and the root weevil fly (Cyphocleonus achates)

**HERBICIDE** | **RATE** | **TIME**
--- | --- | ---
Aminopyralid (Milestone) | 4-6 ounces/acre | Bud and flowering stage to dormant plants in the fall.
Chlorsulfuron (Telar) | 1.3 oz/acre | 2/3 gr/gal water
Picloram (Tordon 222) | 1.5 qts/acre | Apply at mid-flowering to late fall

**Yellow toadflax**
Linaria vulgaris P. Miller

**Keys to Id**
- Yellow flowers that are like snapdragons with deep orange centers.
- Stems: Woody at the top.

**Identification**
- Lifecycle: Perennial
- Growth form: Forb
- Flower: Bright yellow and resemble snapdragons, singly on ends of branches, sharp thorns below.
- Seeds: Capsules are round-ovate, and two-celled. Seeds are brown or black, circular, and surrounded by a notched wing.
- Leaves: Soft, lance-shaped, and pale green. Mainly alternate; lower leaves appear to be opposite.
- Stems: Mature plants are 1-3 feet tall with 1-25 smooth erect floral stems covered with cottony hairs
- Roots: Deep taproot, long horizontal roots that can develop adventitious buds.
- Other: Closely related to Dalmatian toadflax (whose leaves are shorter, wider, and clasp the stem.)

**Control**
- Mech: Long term, persistent, hand pulling, or digging, can reduce occurrence in lieu of herbicide use.
- Bio: Calophasia lunula, a predatory noctuid moth, Eteobala intermedia, a root-boring moth and Mecinus janthinus, a stem boring weevil are currently available in Colorado.

**HERBICIDE** | **RATE** | **TIME**
--- | --- | ---
Picloram (Tordon 222) | 1.5 qts/acre | Apply at mid-flowering to late fall
Chlorsulfuron (Telar) | 1.25 oz/acre | Apply at mid-flowering to late fall (Aug thru Sept)

**Dalmatian toadflax**
Linaria dalmatica

**Keys to Id**
- Yellow flowers that are like snapdragons with deep orange centers.
- Thick, waxy, bluish heart-shaped leaves that wrap the stem.

**Identification**
- Lifecycle: Perennial
- Growth form: Forb
- Flower: Loose, elongate, bright yellow.
- Seeds: Fruit is egg-shaped capsules. Seeds are sharp, angular, and slightly winged.
- Leaves: Alternate, broad, clasping but crowded.
- Stems: Mature plants are up to 3 ft tall. A single toadflax plant contains from 1-25 vertical, floral stems, are thick-walled and semi-woody.
- Roots: May penetrate 3 ft into the soil. Horizontal roots may grow to several yards long, and can develop adventitious buds.
- Yellow toadflax is similar, but has more linear pointed leaves, and is generally a smaller plant.

**Control**
- Mech: Hand pulling, for many years after 1st detection, is recommended for eradication.
- Bio: Calophasia lunula, a predatory noctuid moth, Eteobala intermedia, a root-boring moth and Mecinus janthinus, a stem boring weevil are currently available in Colorado.

**HERBICIDE** | **RATE** | **TIME**
--- | --- | ---
Picloram (Tordon 222) | 4 pints/acre | Apply at spring flowering or in fall
Chlorsulfuron (Telar) | 2-3 oz/acre | Apply at spring flowering or in fall

**Picloram (Tordon 222)**
- Restricted
**Chlorsulfuron (Telar)**
- Restricted
**2,4-D + Dicamba (Rangelstar)**
- Pre-bloom to flower stage (retreatment is essential)
Leafy spurge
Euphorbia esula L.

**Keys to Id**
- Flowers are yellowish-green and have a pair of heart shape yellow-green bracts below each inconspicuous flower.
- The entire plant contains white, milky latex.

**Identification**
- Lifecycle: Perennial
- Growth form: Forb
- Flower: Numerous small clusters of small yellowish-green enclosed by paired heart-shaped yellow-green bracts. May-July.
- Seeds: Oblong, grayish to purple, in a capsule.
- Leaves: Alternate, narrow (1/4” wide), 1-2.5” long.
- Stems: Erect and unbranched (except at flower), can reach 3 ft tall
- Roots: Extensive lateral root system.
- Seedling: Rosettes of spotted and diffuse knapweed having the same appearance. Leaves are narrow and about 0.2 inches long, shiny, yellowish-green to gray-green.

**Control**
- Mowing will reduce seed production, repeat every 2 to 4 weeks during the growing season.
- Bio: Both sheep and goats can be effective grazers.
- Flea beetles (Phyllostreta spp.), are effective especially when combined with grazing and/or herbicides.

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<td>Picloram</td>
<td>1 oz/gal water</td>
<td>Spring, just after full-bloom and/or fall.</td>
</tr>
<tr>
<td>Imazapic</td>
<td>0.4 oz/gal water</td>
<td>Fall only treatment prior to hard freeze.</td>
</tr>
<tr>
<td>2,4-D Amine</td>
<td>2-3 qts/acre</td>
<td>Early spring and fall. Prevent seed formation.</td>
</tr>
</tbody>
</table>

**Spotted knapweed**
Centaurea maculosa L.

**Keys to Id**
- Floral bracts have black tips, with spines of equal length.
- Flowers are pink to purple, but rarely white.
- Leaves are pinnately divided.

**Identification**
- Lifecycle: Biennial or short-lived perennial
- Growth form: Forb
- Flower: Flowering heads are solitary at the ends of branches. The floral bracts are stiff and tipped with a dark comb-like fringe. The flowers are pinkish-purple or rarely cream colored.
- Seeds: Have a tuft of persistent bristles.
- Leaves: Alternate rosette leaves are up to 6 in long, and deeply lobed. The principal stem leaves are pinnately divided, have smooth margins, and become smaller toward the top of the shoot.
- Stems: Mature plants are 1-3 ft tall, single stemmed
- Roots: Spotted knapweed has a stout taproot.
- Seedling: Rosettes of spotted and diffuse knapweed are nearly indistinguishable. Leaves are narrow and 1-2 times pinnately divided

**Control**
- Mech: sever the root below the soil surface. Mowing is most effective when plants are at full-bloom.
- Bio: Seed head and Root weevils (Larinus minutus and Cyphocleonus achates) are effective on large infestations.

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<tr>
<td>Aminopyralid</td>
<td>2-7 ounces/acre</td>
<td>Spring at rosette to early bolt stage and/or in the fall to rosettes.</td>
</tr>
<tr>
<td>Clopyralid</td>
<td>0.5 gr./gal water</td>
<td>Apply to spring/bolt rosettes - before flowering stalk lengths.</td>
</tr>
<tr>
<td>Cleftopralid + Aminopyralid</td>
<td>2-3 qts/acre</td>
<td>Early spring and fall. Prevents seed formation.</td>
</tr>
</tbody>
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**Musk thistle**
Carduus nutans L.

**Keys to Id**
- Broad, spine-tipped bracts located under the flower.
- Flowering heads are terminal, solitary, and usually nodding.
- Grows up to 6 feet tall

**Identification**
- Lifecycle: Biennial, or sometimes winter annual
- Growth form: Forb
- Flower: Heads are terminal, solitary, 1 1/2-3 in wide, and usually nodding. Deep rose, violet or purple, occasionally white. Flowers are subtended by broad, spine-tipped bracts. May-July.
- Seeds/Fruit: One-seeded oblong fruit (achene) about 0.2 inches long, shiny, yellowish-brown with a plume (pappus) of white hair-like bristles.
- Leaves: Alternate, dark green, deeply lobed, and spiny margined. The leaves extend onto the stem giving a winged appearance. Basal rosettes are well developed, leaves elliptical to lanceolate, 6-14 in, smooth to densely hairy.
- Stems: Mature plants can grow as tall as 6 ft. It can appear solitary or with several stems from one base, and is highly branched above.
- Roots: Fleshy taproot

**Control**
- Mech: Hand pull/dig is not effective. Instead, mow in spring before seed-set and combine with chemi- cal treatments.
- Bio: none currently available in Colorado.

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<td>Aminopyralid</td>
<td>5 ft. oz./acre</td>
<td>Spring rosette to early bolting or in the fall to rosettes.</td>
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<tr>
<td>Cleftopralid</td>
<td>0.5 gr./gal water</td>
<td>Apply to spring/bolt rosettes - before flowering stalk lengths.</td>
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<tr>
<td>Cleftopralid + Aminopyralid</td>
<td>1 oz. product/acre</td>
<td>Apply in spring and fall to rosettes.</td>
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**Perennial Pepperweed**
Lepidium latifolium L.

**Keys to ID**
- Dense clusters of white flowers.
- Leaves and stem - covered with waxy layer.

**Identification**
- Lifecycle: Perennial, member of the mustard family.
- Growth form: Forb
- Flower: White; packed in dense clusters near the ends of branches. May-Aug.
- Fruit: Nearly round, very small and sparsely hairy.
- Leaves: Alternate, lance-shaped, may be toothed, bright-green to gray-green, basal leaves are larger than the upper leaves.
- Stems: Mature plants are 1-3 ft tall.
- Roots: Deep-seeded roots.
- Other: The leaves and stem are covered with a waxy layer.
- Exotics: Do not have clasping bases, unlike Hoary cress leaves with clasping bases.

**Control**
- Mech: Hand pull/dig is not effective. Instead, mow in spring before seed-set and combine with chemi- cal treatments.
- Bio: none currently available in Colorado.

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<tr>
<td>Chlorsulfuron</td>
<td>1 oz / acre</td>
<td>Gelling from to late flowerv stage.</td>
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<tr>
<td>Metsulfuron</td>
<td>0.5 gr./gal water</td>
<td>Gelling from to late flowerv stage.</td>
</tr>
<tr>
<td>Imazapyr</td>
<td>12 fl. oz./acre</td>
<td>Flower to late flowerv stage.</td>
</tr>
<tr>
<td>Chlorsulfuron</td>
<td>1 oz. product/acre</td>
<td>Spring from rosette through early flower stage.</td>
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<tr>
<td>Metsulfuron</td>
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<td>Spring from rosette through early flowerv stage.</td>
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**Chlorsulfuron**
(Telar)

**Metsulfuron**
(Escort XP)

**Imazapyr**
(Plateau)

**Chlorsulfuron**
(Telar)

**Metsulfuron**
(Escort XP)

**Imazapyr**
(Plateau)
Bull thistle
Cirsium vulgare (Savi) Tenore

**Keys to ID**
- Leaves are prickly-hairy above and cottony below.
- Heads cobwebby-pubescent
- Flowers are composite and purple

**Identification**
- Lifecycle: Biennial
- Growth form: Forb/herb
- Flower: Flowers are 1.5-2 in wide and clustered at the ends of branches. The flower bracts are somewhat tapered and covered with spines (Whitson et al. 1996).
- Seeds/Fruit: Seeds are capped with a circle of plume-like white hairs.
- Leaves: Leaves are alternate. Bull are the only thistles in Colorado that are prickly hairy on the top surface of the leaves. They are cottony-hairy on the undersides.
- Stems: In mature plants the leaves extend down, clasping the stem and are divided into segments (i.e. strongly decurrent).

**Control**
- Mech: sever the root below the soil surface
- Bio: Urophora stylata, a fly predator, can be used to help control this thistle.

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**Locoweed (White Point, Woolly, Spotted)**
Oxytropis sericea or Oxytropis lamberti

Abnormal behavior of poisoned animals has been described. This "locoed" behavior results from locoweed-induced neurologic damage. Most of the time, animals become depressed and lethargic. Although some of the toxic effects resolve after animals are removed from infested areas, the neurologic damage may be permanent. Three varieties are present in Park county, including, Woolley loco, White Loco, and Spotted Loco.

**Keys to ID**
- Flowers are white or purple with a pointed keel (pea-like) and borne on a leafless stalk.
- Leaves: Opposite, pinnate, and covered with silvery hairs.
- Seed pods are erect, stalkless, with a short beak that splits open to release numerous smooth brown seeds.

**Control**
- Cultural:
  - Reduce grazing pressure in pastures to maintain healthy desirable species.
  - Defer grazing from locoweed-infested sites in the spring when locoweed is green and growing.
- Mech:
  - Hand pull, dig, grub to remove all parts of plant, especially seed.
  - Wear protective clothing, plant is toxic to humans in addition to livestock.
- Chem: Vegetative/early bloom in spring

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<tr>
<th>HERBICIDE</th>
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<td>Picloram + 2,4-D (Grazon P&amp;D)</td>
<td>2 qt./acre 0.625 lbs ai/ac</td>
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**Scentless Chamomile**

*Matricaria perforate*

**Keys to Id**
- Flowers have a yellow center disk, with white petals around.
- Odorless when crushed.
- Leaves are alternate, finely divided.

**Identification**
- Lifecycle: Annual, biennial or short-lived perennial.
- Growth form: Forb
- Flower: White, ½ inch daisy like flowers that are solitary on each stem.
- Seed: Continually produces flowers and seed all season. One flower head can produce 300 seeds.
- Leaves: Alternate, finely divided and fernlike.
- Stems: 6 in. to 3 feet tall; numerous branches.
- Roots: Large and fibrous.
- Seedling: Seedlings emerging in spring can produce a dense mat, outcompeting other species.

**Control**
- Mech: Hand pulling small populations; frequent, shallow tillage in non-native areas. Mowing is not effective. Prevent seed production. Combine efforts with chemical options for effective control.
- Bio: Nothing available in Colorado.

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<td>Apply when plant is in rosette or bolting growth stage.</td>
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</tr>
<tr>
<td>Aminopyralid</td>
<td>7 ft oz/ac</td>
<td>Apply when plant is in rosette growth stage.</td>
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**Oxeye Daisy**

*Chrysanthemum leucanthemum L.*

**Keys to Id**
- Creeping perennial;
- Daisy-like; grows 10 inches to 2 feet tall.
- White ray flower on yellow disk; 2” diameter.

**Identification**
- Lifecycle: Perennial, short-lived
- Growth form: Forb
- Flower: Heads are solitary at the ends of branches. Heads are white ray flowers & yellow disk flowers.
- Seeds/Fruit: Fruits have about 10 ribs.
- Leaves: Alternately arranged leaves become progressively smaller upward along the stem. Basal and lower stem leaves are 2-5”long, spoon-shaped. Stems: Mature plants are 10-24” in tall with erect, smooth to sparsely hairy stems.
- Roots: Shallow, branched rhizomes.
- Other: Oxeye daisy is easily confused with the ornamental Shasta daisy which has a rock ball and is a more robust plant with larger flowers.

**Control**
- Mech: Hand pull or dig when soil is moist and infestations are small, be sure to pull up all roots.
- Bio: Goats or sheep can be effective. There are no biological controls currently available.

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<td>Methylsulfuron</td>
<td>1 oz/acre</td>
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**Houndstongue**

*Cynoglossum officinale*

**Keys to Id**
- Panicles of reddish-purple petals and 5 soft, hairy sepals.
- Velcro-like seeds with 4 nutlets.

**Identification**
- Lifecycle: Biennial
- Growth form: Forb
- Flower: Flowers are reddish-purple, with five petals, arranged in panicles in the upper leaf axils.
- Seeds/Fruit: The fruit is composed of four prickly nutlets each about 1/3 inch long
- Leaves: Alternate, 1-12 inches long, 1-3 inches wide, rough, hairy, and lacking teeth or lobes. Basal leaves are elliptical and tapered at the base.
- Stems: Produces a single flowering stem. Stem is erect, stout, heavy, 1.5-3 ft tall, branched above.
- Roots: Thick, black, woody taproot.
- Seedling: Forms a rosette in the first year

**Control**
- Mech: Cut or pull, and remove entire root crown when seedlings emerge in spring. Cut or pull, and remove entire root crown when seedlings emerge in spring. Cuts or pull, and remove entire root crown when seedlings emerge in spring.
- Bio: none currently available in Colorado.

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<td>Methylsulfuron</td>
<td>2 oz / acre</td>
<td>Apply in spring rosette to early bud growth stage.</td>
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<tr>
<td>Picloram + 2,4-D</td>
<td>4 pints / acre</td>
<td>Apply in spring rosette stage.</td>
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**Backyard Weed Control Tips**

Weeds (or undesirable vegetation) are a concern anytime they compete with the desired vegetation of your landscape or garden area. Weeds are opportunistic and will occupy any space that they can readily invade. Know that tolerating a few weeds can allow a healthy, functioning, attractive sustainable system.

Proper management, whether it be healthy turfgrass, adequate native plantings, or adequate mulch depth, can help to severely limit the impact that invasive and weed plants have.

The best weed control is prevention!

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**Some Additional Resources:**

- CMG Garden Notes #351, Weed Management [http://cmg.colostate.edu/Gardennotes/351.pdf](http://cmg.colostate.edu/Gardennotes/351.pdf)
- CSU Ext, Preparation of small spray quantities [https://extension.colostate.edu/docs/pubs/garden/07615.pdf](https://extension.colostate.edu/docs/pubs/garden/07615.pdf)
- CSU Ext, Weed Management for small rural acreages [https://extension.colostate.edu/docs/pubs/natres/03106.pdf](https://extension.colostate.edu/docs/pubs/natres/03106.pdf)
- CSU Ext, Yard and Garden Publications [http://extension.colostate.edu/topic-areas/yard-garden/?target=publications](http://extension.colostate.edu/topic-areas/yard-garden/?target=publications)
- Utah State University Extension - Yard and Garden [http://extension.usu.edu/yardandgarden/](http://extension.usu.edu/yardandgarden/)
- Teller-Park Noxious Weed Program Marisa Neuzil 719-472-3671
- Teller County Extension Mark Platten
- CSU Ext. Yard and Garden Publications [http://extension.colostate.edu/topic-areas/yard-garden/?target=publications](http://extension.colostate.edu/topic-areas/yard-garden/?target=publications)