

Boulder County Weed Management Contacts:

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Boulder County Weed Management Guide 2010



Hitchcock, A.S. (rev. A. Chase). 1950. *Manual of the grasses of the United States*. USDA Miscellaneous Publication No. 200. Washington, DC. 1950

Colorado
State
University

Extension



Common mullein (*Verbascum thapsus*)

Common mullein is a biennial that reproduces only by seed. Mullein seeds can survive in the soil for more than 80 years. The leaves are a yellow green color and very hairy/fuzzy. The first year's growth is a rosette followed by a spike that carries yellow flowers the second year. The brown spikes become very obvious in the winter and provide seeds for wildlife.

Common mullein is on the state C list and is considered a nuisance weed in Boulder County.

Control in the rosette stage is hoeing when very young and small, hand pulling, undercutting and removal or spraying. Control in the second flowering stage is removal of the spike stem prior to seed set or spraying. Since the seeds have such a long survival time in the soil, persistence is important. When using an herbicide, it is very important to add a high quality surfactant to the spray mix allowing the herbicide to penetrate the hairs on the leaf surface. Herbicides should be applied in the rosette stage or prior to flowering. There are no biological controls for mullein.

Herbicides:

Escort

Telar

Milestone

Myrtle spurge (*Euphorbia myrsinites*)

Myrtle spurge and its relative cypress spurge are simple perennials that reproduce by seed and plant parts.

These two former xeric landscape plants were removed from sale and placed on the state weeds list. Myrtle spurge has flattened green gray leaves along the stem and produces a milky latex that is harmful to people and animals. The leaf arrangement of the stem gives the plant another name, donkey tail spurge.

Myrtle spurge is on the state A list and work continues to eradicate it.

Due to its low growth, mowing is not effective control. Hand pulling and digging are effective but care must be taken to wear protective clothing and avoid contact with the latex. There are no biological control agents. Herbicides are effective for control. They should be applied prior to seed production. Herbicides will work best with a surfactant to assist in penetration of the waxy leaf surface.

Herbicides:
2,4-D plus a surfactant

Boulder County Weed Management Reference Guide

This booklet was compiled by Boulder County Parks and Open Space Weeds Division and CSU Extension

Contents

Introduction to Colorado Weed Law
Boulder County Weed list
Boulder County Weeds with Management

Oxeye daisy (*Chrysanthemum leucanthemum*)

Oxeye daisy is an escaped perennial that spreads both by seed and underground rhizomes. Oxeye daisy generally appears similar to the cultivated Shasta daisy but is less robust and with smaller flowers and foliage. Shasta daisies tend to grow in more of a clump shape while Oxeye daisies are more spreading in growth.

Oxeye daisy is on the state B list and is on the Boulder County weed management plan.

Mowing/cutting if timed properly and performed several times can limit seed production. Hand pulling and digging are very effective. Be sure to bag any plants that have seeds. There are no biological controls available. Spraying prior to flowering and seed production is effective.

Herbicides:
Escort
Telar

Dalmation and yellow toadflax (*Linaria genistifolia* and *vulgaris*)

Both of the toadflaxes are escaped perennials from the snapdragon family. Dalmation prefers dry, rocky foothill areas while yellow tends to prefer cooler, moister sites. Dalmation toadflax has multiple stems and leaves that clasp the stem. Flowers are yellow with orange throats. Yellow toadflax also known as “butter and eggs” with flower colors being more yellow with white and narrow leaves that do not clasp the stem.

Both toadflaxes are on the state B list and the Boulder County Weed Management list

Mowing and grazing are of very limited use in controlling toadflaxes. Hand pulling over multiple years may help control of small infestations. There is one biological control for Dalmation but none for yellow toadflax. The stem-boring weevil *Mecinus janthinus* is of some help depending on the area. Herbicides are effective in control if applied in the fall.

Herbicides:

Dalmation toadflax (with a methylated seed oil and silicone)

Telar

Plateau

Yellow toadflax

Tank mix of Tordon (restricted use), Telar and Overdrive

Colorado Weed Law

The Colorado State Noxious Weed Act separates 71 noxious weeds into 3 categories or lists, A, B and C.

- List A species must be eradicated. Fortunately, most of the A listed species are not currently in the state. The A listed species have the potential to cause serious problems in the state

- List B species must be eradicated, managed or controlled. Eradication in most counties is not practical due to the wide spread nature

- List C species must be managed and controlled. These weeds are well established in the state.

Each county in their weed management plan defines how they will address B and C listed species. Depending on how wide spread a B or C listed weed may be in the county, the county may work toward eradication. A listed species are governed by the state and must be eradicated.

Boulder County Noxious Weed Management Plan includes eradication of all 18 A listed species. Of the 18 A listed species the following A listed weeds are known to be present in Boulder County.

Mediterranean sage

Orange hawkweed

Purple loosestrife

Yellow starthistle

Cypress spurge

Myrtle spurge

Dyer's woad

Rush skeletonweed

The Management Plan calls for management and control of 9 of the 40 B listed weeds. The 9 B listed weeds are

Canada thistle
Diffuse knapweed
Musk thistle
Scotch thistle
Yellow toadflax

Dalmation toadflax
Leafy spurge
Russian knapweed
Spotted knapweed

Biennial thistles – Bull, Musk, Scotch (*Cirsium vulgare*, *Carduus nutans*, *Onopordum acanthium*)

All of these thistles are biennials and only spread by seed. They can grow anywhere from 3 (Bull) to 12' (Scotch) tall. They spend the first year as a rosette and bloom the second year. The flower colors range from reddish purple to darker purple and are 1-2" in size. The foliage tends to be spiny on all three. Visual characteristic differences between the three involve the bracts below the flowers, leaf shape, size and color. Control methods are the same for all three. Seeds can survive in the soil for 10 years.

They are all on the state B list and Boulder County Weed Management list.

Hand pulling and digging can be effective just make sure to wear gloves. Mowing can be effective to prevent seed production. Bag any seed stalks that have the potential to have viable seed. Under cutting is also effective either in the first or second year before seed production. There is one wide spread weevil that was released for control. Unfortunately, it also attacks native thistles. It is no longer available for release as it is widely spread. Herbicides are also effective in either the rosette stage or pre bloom stage.

Herbicides:
Tordon (restricted use)
Transline
Milestone
Curtail
Redeem
Telar

Canada thistle (*Cirsium arvense*)

Canada thistle is an aggressive perennial with an extensive root system. It spreads both by seed and rhizomes. It germinates in the spring as a small prickly plant growing to 2-4' during the summer. The flowers are small ½", diameter white to lavender color. There will be multiple plants in an area as the root system enlarges. There are multiple flowers per stem.

Canada thistle is on the state B list and Boulder County Weed Management list.

Hand pulling and digging can be counter productive with Canada thistle as this only serves to stimulate the plant to grow. Mowing can be effective to keep it from going to seed and stress it. Mowing it at higher levels to prevent seed production several times during the year are effective. There are no biological controls that have proven to be effective. Mowing during the year followed by a fall herbicide application has been shown to be the most effective.

Herbicides:

Tordon (restricted use)

Transline

Milestone

Curtail

Redeem

Telar

Dicamba

2,4-D

Weed Management

General weed information

Weeds are plants that have been introduced either on purpose or accidentally from other areas of the world. They have the ability to adapt to our climate and growing conditions and have no natural predators here. Understanding a weed's growth cycle will aid landowners in managing their weeds. Some basic information follows.

Annuals (either summer or winter) are plants that complete their lifecycle in one calendar year. They can germinate at various times of the year thus the names summer or winter. Winter annuals generally germinate in the fall and over winter or germinate in very early spring. They are producing seed by early summer. Summer annuals germinate in late spring or early summer and are producing seed in late summer and fall. Annuals only reproduce by seed.

Biennials complete their lifecycle in 2 years. They germinate in the first year and quite often produce a rosette that over winters. The second year they flower and produce seed. Biennials also only reproduce by seed.

Perennials are plants that live longer than 3 years. There are simple perennials such as dandelions that only reproduce by seed. There are also complex perennials that reproduce by seed and also by other vegetative methods such as rhizomes (underground stems) and stolons (above ground stems) or other plant parts. A rosette is a cluster of leaves that is low growing, rounded and is the first year's growth of biennials.

With any infestation of weeds, the earlier that it is detected and action taken to eradicate, control or manage, the more successful the landowner will be. It is important to on a regular basis walk the property looking for new plants and invasives. The longer an infestation avoids detection, the more seed and the root system is established making management and control more time consuming and expensive. When working on an infestation, it is best to use as many of the control methods as possible. The more methods you use, the better success you will have.

Prevention is the first key to weed management. Only purchase seed from reputable dealers. Do not drive your equipment and vehicles in infested areas without cleaning your equipment and vehicles prior to leaving the infested site. Prior to allowing a contractor onto your property make sure that he has adequately cleaned all equipment prior to entering your property. If you are using hay or straw as mulch, use only weed free hay or straw.

Cultural control is keeping existing vegetation healthy so that it can compete with weeds. Good land management and stewardship will help maintain healthy stands of native plants.

Mechanical control is using physical methods to disrupt growth and control weeds. This may consist of mowing, hand pulling, hoeing, light tillage or digging. Keeping the annuals and biennial from going to seed by mowing or pulling limits the number of new plants you have each

Leafy spurge (*Euphorbia esula*)

Leafy spurge is a perennial that spreads by both seeds and its extensive roots. Leafy spurge seeds can survive in the soil for 8 years and are exploded/projected from the plant. It comes up in the spring with narrow light green leaves and grows to 1 to 2 feet tall. It produces yellow green “flowers” in late spring. If the stems or leaves are broken, it produces a milky sap/latex. This latex can be irritating or damaging to humans and animals.

Leafy spurge is on the state B list and also on the Boulder County weed management list.

Leafy spurge control is best accomplished by using multiple methods. Mowing, hand pulling (be sure to wear protective clothing) and digging can be used to help limit seed production and stress infestations. Grazing is limited to sheep and goats, as the latex does not affect them. There are several species of flea beetles (*Apthona ssp.*) that can be useful in reducing stands. They appear to be very site dependant so results will vary. There are several herbicides that can be used if applied prior to seed set.

Herbicides:

2,4-D plus dicamba (for suppression)

Tordon (restricted use)

Plateau (must be obtained from county weed coordinator)

Paramount

Herbicides:

Transline

Redeem

Curtail

Tordon (restricted use)

year. Mowing performed several times prevents the plants from producing a second flower and seed stalk. Mow higher the first time so that the weeds don't produce the second set of flowers below where you can mow.

Biological controls consist of using natural enemies to control or limit weeds spread. Prior to use of biological agents, testing must be completed to ensure that the agent does not affect native species. There are limited biological agents available. Biological agents do not eliminate weeds, as that is their food supply. They are also slower in their actions as it takes time to get a sufficient population established to have an effect. Biological controls may also be limited in where they will survive. Another biological control is animals grazing. Again this will not eliminate the weed but can be used in conjunction with other control methods. Insect biological controls can be obtained from the Colorado Department of Agriculture's "Request-a-bug" website.

Chemical controls consist use of chemical use to alter growth or kill plants. Chemicals are considered to be "organic" or "synthetic". "Organic" only kill the above ground vegetative growth but do not translocate to the root systems. Therefore, you will need to reapply them as you see new above ground growth. "Synthetic" chemicals will not only kill or stunt the above ground growth but will also translocate (move) into the root system killing them too. Whether the chemical is "organic" or "synthetic" it is important to read and follow the label instructions for application rate, mixing, application conditions, what weeds it is effective on, potential damage to desirable plants, personal protective equipment and disposal. **The label is the law.** Proper timing is also important. Time your spray applications to

be the most effective. Restricted use pesticides require the purchaser and applicator to have a license issued by the Colorado Department of Agriculture.

Diffuse and spotted knapweed (*Acosta diffusa* and *Centaurea maculosa*)

Diffuse knapweed is normally a biennial that reproduces only by seed. Spotted knapweed is a short-lived perennial that spreads by seed. The seeds for both can survive for 3 years in the soil. The first year's growth is a rosette with flowers produced the second year. Diffuse produces a 1-2' tall stem with multiple flowers that after flowering may break off and become tumbleweed. Spotted produces a rosette at the base of the previous years growth in the fall or spring and does not usually become a tumbleweed. The flowers are small and usually white but may be lavender in color for diffuse and pink-purple for spotted. The difference between the two is that the bracts under the flowers in spotted have spots where diffuse does not.

Diffuse and spotted knapweeds are on the state B and A list respectively and Boulder County's weed management list.

First year control is by pulling or undercutting and removing the rosette or spraying with an herbicide. Second year control is pulling or undercutting the plant, spraying the plant prior to flowering, mowing the stalk prior to flowering or use of biological controls. There are 3 weevils that are available and effective, seed head weevil *Larinus minutus*, and root weevils *Cyphocleonus achates* and *Sphenoptera jugoslavica*. Herbicides should be applied either in the rosette stage or flowering stage prior to seed production.

Weeds

Cheatgrass (*Bromus tectorum* or *japonicus*)

Cheatgrass is the common name for several winter annual brome grasses, downy brome and Japanese brome. They are all winter annuals that germinate mainly in the fall and early winter but also in the spring. They reproduce only by seed. The leaves are hairy and may turn reddish in color during the winter. In the spring they are some of the first plants growing. Early in their growth, they can be grazed but once the seed begins to form most animals will not graze them. The seeds become the nuisance stickers that end up in shoes and socks. The seeds can survive up to 3 years in the soil.

Cheatgrass is on the state C list. Since it is so established, it is considered a troublesome weed in Boulder County

Control in the seedling stage is hoeing, pulling, light tillage to uproot and disturb growth. Grazing can also be used to suppress growth. Mowing is of limited effectiveness depending on the mowing timing. Mowing high at flowering stage followed by a second mowing may reduce seed production. Cheatgrass will continue to attempt to produce seeds only at lower and lower levels. There are no effective biological controls. There are only a couple herbicides that are effective.

Herbicides:

Plateau (only available from the county weed coordinator)

Panoramic

Matrix

Plateau and Panoramic can be applied as a pre-emergent or postemergent. Matrix can be applied

September to November as a post emergent. Roundup is best applied in early growth stages prior to blooming and seed set. As it is non selective and will kill everything, it is best to use it only in areas where there are no desirable plants growing.

Biennial thistles

Musk thistle



Ricky Layson, Ricky Layson Photography, Bugwood.org

Richard Old, XID Services, Inc., Bugwood.org



Canada thistle



Mary Ellen (Mel) Harte, Bugwood.org

Mary Ellen (Mel) Harte, Bugwood.org



Peggy Greb, USDA Agricultural Research Service, Bugwood.org

Bull thistle



Forest & Kim Starr, U.S. Geological Survey, Bugwood.org

Steve Dewey, Utah State University, Bugwood.org



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Knapweed

Scotch Thistle



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USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org



Leafy spurge

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Oxeye daisy

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Myrtle spurge

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Dalmatian toadflax

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Yellow toadflax



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Cheatgrass

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Common Mullein

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