

Scotch thistle

Colorado Department of
Agriculture

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Key ID Points

1. Flower heads cluster 2-5 and are purple to dark red in color.
2. Leaves are alternate, stalkless and hairy underneath.

Scotch thistle Identification and Management



Identification and Impacts

Scotch thistle (*Onopordum acanthium* or *O. tauricum*) is a non-native biennial forb that reproduces solely by seed. A biennial is a plant that completes its lifecycle within two years. During the first year of growth, Scotch thistle appears as a rosette in spring or fall. Rosettes can be 1 to 2 feet in diameter. During the second year in mid to late spring the stem bolts, flowers, sets seed, and the plant dies. A prolific seed producer, Scotch thistle can produce up to 14,000 seeds per plant.

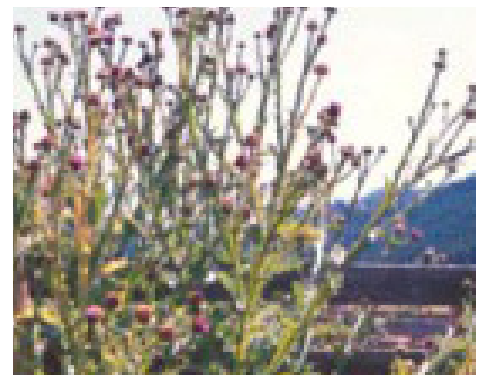
Scotch thistle can grow up to 12 feet tall. Stems are numerous, branched, and have broad, spiny wings. The leaves of species *acanthium* are large, grayish-green, spiny, and covered with fine dense hair giving the leaf a woolly appearance. The leaves of the species *tauricum* are similar in size, but are not hairy, smooth and bright green. On both species, the leaves have a distinct mid-rib. The flowers are violet to reddish in color, numerous (70-100/plant), and are surrounded by spine-tipped bracts. The plants flower from mid-June to September.

Due to the robust, spiny nature of Scotch thistle, this plant can act as a living barbed wire fence, making areas impassible for wildlife, livestock,

and people. Scotch thistle invades rangeland, overgrazed pastures, roadsides, and irrigation ditches. It also prefers high-moist soil areas adjacent to creeks and rivers.

The key to effective control of Scotch thistle is maintaining healthy pastures and rangeland, guarding against disturbance or overuse, and as with most biennials limit seed production. To reduce seed production, plants with buds or flowers should be collected and immediately disposed of or destroyed. Chemical control is most effective when plants are in rosette stage, spring or early fall. Mechanical controls can be used to eliminate small patches or plants in a later growth stage. Details on the back of this sheet can help to create a management plan compatible with your site ecology.

Scotch thistle 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.



Photos © Map above: Crystal Andrews, Colorado Department of Agriculture; All other photos: Kelly Uhing, Colorado Department of Agriculture.

Onopordum acanthium or *O. tauricum*

**CULTURAL**

Establishment of selected grasses can be an effective cultural control of Scotch thistle. Contact your local Natural Resources Conservation Service for seed mix recommendations. Maintain healthy pastures and prevent bare spots caused by overgrazing. Bareground is prime habitat for weed invasions.

**BIOLOGICAL**

Urophora stylata, a fly predator, is used to help control this thistle. The female fly lays eggs in the seed head of the thistle. The maggot then consumes the seed in the flower. This species has overwintered in Colorado but the limited numbers will not allow for general redistribution. For more information, contact the Palisade Insectary of the Colorado Department of Agriculture at 970-464-7916.

**MECHANICAL**

Any mechanical or physical method that severs the root below the soil surface will kill Scotch thistle. Mowing or chopping is most effective when Scotch thistle plants are at full-bloom. Be sure to properly dispose of the flowering cut plants since seeds can mature and become viable after the plant has been cut down.

Integrated Weed Management:

Scotch thistle is best controlled in the rosette stage. For small infestations, Scotch thistle can be controlled by severing its taproot 1-2 inches below the ground. Control can be enhanced by a follow-up application of herbicides to the surviving rosettes. It is imperative to prevent seed production. Do not allow Scotch thistle flowers to appear.

HERBICIDES

NOTE: The following are recommendations for herbicides that can be applied to range and pasturelands. Rates are approximate and based on equipment with an output of 30 gal/acre. Please read label for exact rates. Always read, understand, and follow the label directions. The herbicide label is the LAW!

HERBICIDE	RATE	APPLICATION TIMING
Picloram (Tordon 22K - *Restricted Use*)	1 pint/acre + 0.25-0.5% v/v non-ionic surfactant	Apply spring or fall in the rosette stage.
Aminopyralid (Milestone)	7 fl. oz./acre + 0.25-0.5% v/v non-ionic surfactant	Apply spring or fall in the rosette stage.
Metsulfuron (Cimarron X-tra)	2 oz. product/acre 0.25-0.5% v/v non-ionic surfactant	Apply rosette to early bolt stages of growth. (Spring)

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