

Yellow starthistle

Colorado Dept. of
Agriculture,
Conservation
Services Division
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Key ID Points

1. Bright yellow ray and disk flowers.
2. Winged stems.
3. Stiff spines at flower base
4. Plant has a unique blue-green color.

Yellow starthistle Identification and Management



Identification and Impacts

Yellow starthistle (*Centaurea solstitialis*) originated from Northern Spain. It is a winter annual that is blue-green in color, has a vigorous taproot, and produces bright yellow flowers with sharp, stiff spines surrounding the base of the flower that extend up to $\frac{3}{4}$ of an inch long. Yellow starthistle grows from 1 inch tall to 4 feet tall. Basal leaves are 1-3 inches long and deeply lobed while upper leaves are smaller and narrower. Stems appear winged and both stem and leaves have a slight whitish nap covering them. Yellow starthistle spreads by seed with a single large plant producing up to 100,000 seeds. Plumed and plumeless seeds disperse at different times.

Yellow starthistle typically germinates in the fall with increased moisture, overwinters as a seedling, and forms its rosette beginning in March through May. It can however, germinate extremely fast with optimal conditions throughout the entire summer (16 hours or less with ~ 70 degrees F and ample moisture). Flowering generally occurs from June to September and often later.

Habitats for yellow starthistle include rangelands, pastures, roadsides, wastelands, and lower elevations. Over utilized grasslands are particularly susceptible to invasion.

Yellow starthistle is fatally poisonous to horses (causing chewing disease) and is considered poor forage for all livestock and wildlife. It also destroys native plant communities. The seed bank of yellow starthistle is not completely understood. The site must be monitored for at least 15 years after the last flowering adult plants have been eliminated and treatments repeated when necessary.

The key to effective control of yellow starthistle is to prevent seed set from occurring in existing populations, monitoring your land for new infestations frequently, treating newly detected invasions rapidly, and preventing new introductions from occurring. Details on the back of this sheet can help to create a management plan compatible with your site ecology.

Yellow starthistle is designated as a "List A" species in the Colorado Noxious Weed Act. It is designated for statewide eradication. For more information visit www.colorado.gov/ag/weeds 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.

Map of yellow starthistle infestation.



Photos clockwise from lower left © (3 on left side) Kelly Uhing, Colorado Department of Agriculture, Steve Dewey, Utah State University, Bugwood.org; and map by Crystal Andrews, Colorado Department of Agriculture.

Centaurea solstitialis

**CULTURAL**

Following initial control, establishment of selected grasses can be an effective cultural control of yellow starthistle. Contact your local Natural Resource Conservation Service for seed mix recommendations. Maintain healthy pastures and prevent bare spots caused by overgrazing. Bare ground is prime habitat for weed invasions.

**BIOLOGICAL**

Insect biocontrol agents exist but are not included in the state prescribed management plan. Eradication is the management objective for all List A species. For more information on biocontrol in Colorado, contact the Palisade Insectary of the Colorado Department of Agriculture at 970-464-7916.

**MECHANICAL**

Hand pull when soil is moist and make certain to pull all the roots. Bag specimens carefully so as to not scatter seeds if flowering. Plants vary greatly in size so be sure to look for plants that are only a few inches tall, as well as plants that are several feet tall. Include dried skeletons as they may still contain seed. Mowing is not advisable and may extend life of the plant and stimulate additional flowering.

Integrated Weed Management:

The sheer number of seeds, high seed viability, and fast growth of yellow starthistle requires a persistent control program. Using herbicides and mechanical techniques to control the invasion followed by establishing a desirable plant community can be effective.

Management must be persistent to deplete the seed bank in the soil.

It is imperative to prevent seed production. Do not allow yellow starthistle plants to go to seed.

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)	1.5 pint product/acre	Apply during rosette growth stage or when adequate moisture is available, and plants are actively growing. (Early spring to late summer depending on conditions.)
Aminopyralid (Milestone - general use)	5 fl oz product/acre	Apply during rosette growth and bolting growth stages. (Early spring to early summer)
Clopyralid (Transline - general use)	0.67 pint product/acre	Apply during rosette growth to mid-bolt growth stages. (Early spring to early summer)

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