

Hoary cress

Cardaria draba (L.) Desv.



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Other common names: whitetop, whiteweed, heart-podded hoary cress, perennial peppergrass

Family: Brassicaceae (Mustard)

USDA Code: CADR

Bayer Code (WSSA): CADDR

Life cycle classification: Perennial forb

Legal Status: Colorado Noxious Weed (among top ten worst in the State)

Native to: Eurasia

Entry into Colorado: No information available

Current distribution in Colorado: Hoary cress is commonly found at elevations of 3,500 to 8,500 feet (CNAP 2000)



Biology

Seasonal development: Plants emerge in very early spring. The first leaves appear aboveground 5 to 6 weeks after germination (Mulligan & Findlay 1974). During this period, the first leaves emerge and form a loose rosette (Mulligan & Findlay 1974). Stems arise from the center of each rosette in late April (FEIS 1996). Plants flower from May to June, are self-incompatible, and are pollinated by insects. Hoary cress plants set seed by mid-summer (Whitson et al. 2000). If conditions are favorable, a second crop of seeds can be produced in the fall (Sheley and Stivers 1999).

Reproduction

Most commonly reproduces by: Vegetatively from creeping roots and less importantly by seed

Numbers of seeds/plant: One plant can produce from 1,200-4,800 seeds (CNAP 2000)

Description

Roots: Rhizomatous and typically occur at depth of 29-32 inches, but have been recorded to reach a depth of 30 feet (FEIS 1996).

Stems: Mature hoary cress plants are up to two feet tall with erect stems (CNAP 2000)

Leaves: Leaves are alternate, 1.6-4 inches long, blue green in color, and lance-shaped. Lower leaves are stalked, while the upper leaves have two lobes clasping the stem (CNAP 2000)

Flowers: The numerous, four-petaled, white flowers give the plant a white, flat-topped appearance (CNAP 2000)

Fruits & seeds: Seed capsules are heart shaped, and contain two reddish-brown seeds (CNAP 2000)

Value & Uses

Wood products: No information available

Importance to/impact on livestock & wildlife

Palatability: Hoary cress is generally considered unpalatable to livestock (CNAP 2000). However, sheep eat plants in early growth stages, and cattle ingest seedheads (McInnis et al. 1993).

Nutritional value: Although hoary cress contains glucosinolates and is potentially mildly toxic (McInnis et al. 1993), nutritional levels are adequate to meet the requirements of most classes of livestock, especially in the early growth stages. Foliage becomes coarse and bitter as it matures (McInnis et al. 1993).

Cover value: No information available

Value for rehabilitation of disturbed sites: No information available

Other uses & values: Hoary cress seed may be used as a substitute for pepper (Mulligan & Findlay 1974)

Infestations

Habitat: Hoary cress is typically found on generally open, unshaded, disturbed ground. Hoary cress grows well on alkaline soils that are wet in late spring and generally does better in areas with moderate amounts of rainfall. It is widespread in fields, waste areas, meadows, pastures, croplands, and along roadsides (FEIS 1996). Hoary cress is commonly found associated with saltcedar (*Tamarix* spp.), antelope bitterbrush / rough fescue (*Purshia tridentata* / *Festuca scabrella*), antelope bitterbrush / bluebunch wheatgrass (*Pseudoroegneria spicata*), big sagebrush (*Artemisia tridentata* spp.), and Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) communities (FEIS 1996).

Impacts/Threats:

Special Challenges to Management: Hoary cress is invading rangelands throughout North America. It is a highly competitive weed once it becomes established. Hoary cress spreads primarily by extremely persistent roots and will eventually eliminate desirable vegetation and become a monoculture (CNAP 2000). Hoary cress has also been reported to exhibit some degree of allelopathy (Kiemnec & McInnis 2002).

Control Methods

Physical

Manual: Persistent digging may provide control of small infestations. However, entire root should be removed if possible to prevent re-sprouting.

Mechanical:

Cultivation: Cultivation may actually aid in propagating this species by spreading root fragments. However, frequent cultivation (every one to two months) over the course of 2-4 years can control hoary cress.

Mowing: Mowing 2-3 times a year for several years may slow the spread and reduce seed production of hoary cress. Mowing may increase the effectiveness of subsequent herbicide application (Sheley and Stivers 1999). Mowing is best conducted during the bud stage and repeated as the plants re-grow. The effectiveness of a mowing program can be increased by planting perennial grasses as competitors (CNAP 2000).

Cultural: Reseeding with competitive grasses is probably an effective compliment to sheep grazing. Fertilizing with nitrogen can promote the growth of grasses and slow hoary cress invasion (Sheley and Stivers 1999).

Biological

Insects: None known.

Pathogens: None known.

Chemical

Conventional:

Trade Name (<u>common name</u>)	Product/Acre (<u>Active ingredient /Acre</u>)	Remarks
Plateau (imazapic)	8 to 12 fl oz (2 to 3 oz)	Apply during full bloom
Escort (metsulfuron)	1 oz (0.6 oz)	Apply when in tight bud to bloom growth stages
Many Trade Names (glyphosate)	(1.5 lb)	Apply during flowering stage
Telar (chlorsulfuron)	1 oz (0.75 oz)	Apply during tight bud to bloom stage

Organic: No information available

USE PESTICIDES WISELY: Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing.

NOTICE: Mention of pesticide products in this profile does not constitute endorsement of any material.

Additional comments:

Contacts:

Links:

Colorado Dept. of Agriculture, Division of Plant Industry
<http://www.ag.state.co.us/DPI/weeds/Weed.html>

Colorado Weed Management Association
<http://www.cwma.org>

Colorado Weed Management Guide

[http://www.cepep.colostate.edu/WeedGuide/Weed Guide 2004.pdf](http://www.cepep.colostate.edu/WeedGuide/Weed%20Guide%202004.pdf)

Colorado Natural Areas Program Handbook

http://parks.state.co.us/cnap/IWM_handbook/IWM_index.htm

Fire Effects Information System

<http://www.fs.fed.us/database/feis/>

Plants National Database:

<http://plants.usda.gov>

Weed Science Society of America

<http://www.wssa.net>

Western Society of Weed Science

<http://www.wsweedscience.org>

References:

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Colorado Natural Areas Program. 2000. Creating an Integrated Weed Management Plan: A Handbook for Owners and Managers of Lands with Natural Values. Colorado Natural Areas Program, Colorado State Parks, Colorado Department of Natural Resources; and Division of Plant Industry, Colorado Department of Agriculture. Denver, CO. pp 181-183.

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McInnis, M.L., L.L. Larson, R.F. Miller. 1993. Nutrient composition of whitetop. *Journal of Range Management*. 46(3): 227-231.

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Sheley, R.L. and J. Stivers. 1999. Whitetop. In R.L. Sheley and J.K. Petroff, eds. *Biology and Management of Noxious Rangeland Weeds*. Oregon State University Press, Corvallis, OR.

Stubbendieck, J., G.Y. Friisoe, M.R. Bolick. 1995. Weeds of Nebraska and the Great Plains. Nebraska Department of Agriculture. Lincoln, NE. pp 104-105.

USDA, NRCS. 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). [National Plant Data Center](#), Baton Rouge, LA 70874-4490 USA.