Houndstongue
Cynoglossum officinale L.

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Knowledge to Go Places

Other common names: hound's tongue, dog bur, gypsy flower

Family: Boraginaceae (Borage)

USDA Code: CYNOF

Bayer Code (WSSA): CYWOF

Life cycle classification: Biennial or short-lived perennial forb

Legal Status: Colorado Noxious Weed (general weed)

Native to: Eurasia

Entry into Colorado: Introduced to North America as a contaminant in agricultural seed (CNAP 2000)

Current distribution in Colorado: Rangeland, pastures, and roadsides throughout Colorado up to about 9000 feet or more (CNAP 2000).

Biology

Seasonal development: This biennial that produces a rosette the first year. During the second year a flowering stem bolts and produces fruit.

Reproduction

Most commonly reproduces by: Reproduces solely by seed (CNAP 2000)

Numbers of seeds/plant: Mature plants can produce up to 2,000 seeds (Butterfield et al. 1996)

Description

Roots: Thick, black, woody taproot (CNAP 2000)

Stems: One to several flowering stems. The stem is erect, stout, heavy, 1.5 to 3 feet high and usually branched above (CNAP 2000).

Leaves: Alternate, 1-12 inches long, 1-3 inches wide, rough, hairy, and lacking teeth or lobes (Whitson et al. 2000). Leaves often appear dusty and insect-ridden and are said to resemble a hound's tongue. Basal leaves are elliptical to oblanceolate and tapered at the base (CNAP 2000).

Flowers: Reddish-purple or occasionally white, with five petals, arranged in panicles in the upper leaf axils (CNAP 2000)

Fruits & seeds: The fruit is composed of four prickly nutlets each about 1/3 inch long (Whitson et al. 2000)

Value & Uses

Wood products: No information available

Importance to/impact on livestock & wildlife

Palatability: Houndstongue contains toxic alkaloids that stop liver cells from reproducing. Therefore, houndstongue reduces livestock and wildlife forage and grazing animals should be kept away from houndstongue infested areas. Animals may live six or more months after eating a lethal dose of houndstongue. Green houndstongue plants have a distinctive odor that discourages animals from eating it, but when dried it becomes more palatable (Baker et al. 1989 and Knight et al. 1984). Sheep are more resistant to houndstongue poisoning that cattle or horses. The burs may reduce the value of wool (CNAP 2000).

Nutritional value: No information available

Cover value: No information available

Value for rehabilitation of disturbed sites: No information available

Other uses & values: Extracts of Boraginaceous roots have been used for centuries as folk remedies for a variety of ailments including eczema, fever, acne, corn callus, dermatophytosis, burns and hemorrhoids. Red pigments associated with the roots of many members of the Boraginaceae are antibacterial, antitumorogenic and possess wound-healing activity. These pigments have also been used as food and wine colorants. Roots and leaves of houndstongue have also been used as pesticides; reportedly, their herbage repels small mammal pests in gardens and stored fruits and vegetables (Upadhyaya et al. 1988).

Infestations

Habitat: Houndstongue prefers areas with more than 10% bare ground (Butterfield et al. 1996 cited in CNAP 2000), and is common on gravelly, alkaline soils (Stubbendieck et al. 1995).

Impacts/Threats:

Special Challenges to Management: Houndstongue contains pyrrolizidine alkaloids which are highly toxic to horses. However, animals rarely eat it unless it is dried and mixed with hay (Knight & Walter 2001).

Control Methods

Physical

Manual: Since houndstongue reproduces exclusively by seed, cutting or pulling plants should provide control. However, plants may re-grow if the root crown is not completely removed.

Mechanical:

Cultivation: Tillage, where practical, will control houndstongue.

Mowing: Mowing second year plants during flowering but before seed maturation may

reduce seed production and even kill the plant (CNAP 2000).

Cultural: Maintaining a healthy population of native perennials the best way to prevent the establishment and spread of houndstongue (CNAP 2000).

Biological:

Insects: None known

Pathogens: None known

Chemical

Conventional:

Trade Name (common name)	Active ingredient/Acre (Product/Acre)	Remarks
Ally/Escort (metsulfuron)	1 oz. + surfactant (0.6 oz)	Apply in spring during bolting. Always add a non-ionic surfactant at 0.25% v/v
Plateau (imazapic)	8 to 12 fl oz (2 to 3 oz)	
Tordon 22K (picloram)	1 to 2 pt (0.25 to 0.5 lb)	Apply in spring when actively growing.
Vanquish/Clarity (dicamba)	1 to 2 qt (1 to 2 lb)	Apply in spring when actively growing.

Organic: No information available — research needed

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

Colorado Weed Management Guide
http://www.cepep.colostate.edu/WeedGuide/Weed Guide 2004/pdf

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:

Beck, K.G., S.K. McDonald, S.J. Nissen, P.H. Westra. 2002. Colorado Weed Management Guide. Colorado State University Cooperative Extension. Fort Collins, CO. XCM-205.

Butterfield, C., J. Stubbendieck, and J. Stumpf. 1996. Species abstracts of highly disruptive exotic plants. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. http://www.npwrc.usgs.gov/resource/othrdata/exoticab/exoticab.htm [Version 16 Jul 97].

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 177-178. http://parks.state.co.us/cnap/IWM_handbook/IWM_index.htm

FEIS - Fire Effects Information System. 1996. Prescribed Fire and Fire Effects Research Work Unit, Rocky Mountain Research Station (producer), US Forest Service. http://www.fs.fed.us/database/feis/ [Version 12 Mar 98].

Knight, Anthony P.; Kimberling, Cleon V.; Stermitz, Frank R.; Roby, Mark R. 1984. *Cynoglossum officinale* (hound's-tongue)--a cause of pyrrolizidine alkaloid poisoning in horses. Journal of the American Veterinary Medicine Association. 185(6): 647-650

Knight, A.P. & R.G. Walter. 2001. A Guide to Plant Poisoning. Teton New Media.

Upadhyaya, Mahesh K.; Tilsner, Heidy R.; Pitt, Michael D. 1988. The biology of Canadian weeds. 87. Cynoglossum officinale L. Canadian Journal of Plant Science. 68(3): 763-774.

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