

HOUNDSTONGUE

(*Cynoglossum officinale*)

Description: Houndstongue, also referred to as sheep's lice, dog's tongue, dog bur, beggar's lice, woolmat, and glovewort, is a member of the Boraginaceae or Borage family.

Houndstongue is a biennial or short-lived perennial forb that can grow from 1 to 4 feet tall. Stems are unbranched below the inflorescence, hairy, coarse, and may produce a single stem or multiple stems that are leafy throughout. Leaves of the plant are alternate, 1 to 12 inches long, 1 to 3 inches wide, rough, hairy, and lack teeth or lobes. The leaves have distinct veins and resemble a hound's tongue. Flowers are small, terminal, and a dull reddish-purple color with five lobes. Four prickly nutlets are produced from the flower, each about 1/3 inch long. Seeds are ovoid, flat on top with a scar that runs near the lower surface and have a hard spiny husk with barbs.

Plant Images:



Houndstongue



Rosette



Flowers



Nutlets

Distribution and Habitat: Houndstongue was introduced from Eurasia. The plant occurs in temperate regions and can survive hot, dry summers, as well as cold winters. Houndstongue is found on a variety of soils from well-drained, relatively coarse, alkaline soils to clay subsoil. The plant is tolerant to shade and thrives in wet grassland conditions. In North America, houndstongue is found on rangeland, pastures, abandoned croplands, roadsides, waste areas, and is well adapted to forested areas.

Life History/Ecology: Houndstongue is a herbaceous biennial or short-lived perennial that forms a basal rosette the first year with a flowering stem produced the second year. Houndstongue reproduces by seed only. Seedlings emerge in the spring from March to April and develop a thick, black, woody taproot which enables plants to overwinter. In the second growing season, flowering occurs from May through July and seeds mature from July through August. Houndstongue can produce more than 2,000

seeds per plant but generally averages between 314 to 674 seeds per plant. Seeds can remain viable on the soil surface for a period of two to three years but, if buried, will rarely survive more than a year.

Houndstongue contains large quantities of pyrrolizidine alkaloids that include echinatine, heliosupine, and acetylheliosupine. The concentration of pyrrolizidine alkaloids is highest in the rosette leaves of mature plants. Poisoning usually occurs when dry houndstongue plants are mixed with hay and fed to animals. The toxic alkaloids stop liver cells from reproducing in animals. Sheep are less vulnerable to poisoning than are cattle or horses. Animals may survive for six months or longer after they have consumed a lethal amount.

History of Introduction: Houndstongue is native to Eurasia or Asia and was used for centuries as a folk remedy for a variety of health disorders. Root extracts were also used as a fever remedy. Houndstongue was likely introduced into North America as a contaminant of cereal seeds in the early 1900s. The plant is considered an invasive in many Canadian provinces and in the Western United States. In North Dakota, houndstongue is found in Stark, Ward, Ransom, and Cass Counties.

Effects of Invasion: Houndstongue can colonize with ease and quickly forms dense monocultures on disturbed habitats. The plant hinders the re-establishment of desirable rangeland species, thereby decreasing available forage for grazing. The barbed seeds of the plant readily cling to hair, wool, and fur of animals which can reduce sale value, stress the animals, and cause irritation and behavioral problems in cattle. The most detrimental affect of houndstongue is the poisonous nature of the plant.

Control:

Management objectives for houndstongue control should involve periodic monitoring of populations and preventing seed production. Houndstongue only reproduces through seed production, therefore monitoring infestations and being aware of seed dispersal where seeds can cling to animals, clothing, and vehicles are crucial when developing a management plan. Control methods should be combined into an integrated management system for the best long-term control of the plant.

Mechanical - Hand pulling is considered to be effective when conducted on small infestations if the entire root crown of the plant is removed and if conducted prior to the reproductive growth stage to prevent seed production. Houndstongue plants in the rosette growth stage may be difficult to control as the prostrate rosette resists mowing. However, mowing and clipping flowering stems close to the ground before seeds are formed will reduce seed production. In one study, seed production was reduced after second year houndstongue plants were clipped 0 to 3 inches above ground in late June. Sixty percent of the clipped houndstongue plants did not regrow and plants that resumed growth produced approximately 25 seeds per plant compared to 364 seeds per plant produced in the unclipped controls. Cultivation may reduce houndstongue infestations but may not be feasible on wildlands and rangelands. Young rosettes or older plants that have not produced seeds can be controlled by cutting the root crowns 1 to 2 inches below the soil surface in autumn or early spring.

Chemical - Several herbicides are available for houndstongue control. Picloram, dicamba, chlorsulfuron, metsulfuron, and 2,4-D amine can control the plant. Excellent long-term control can be achieved with picloram applied in spring, summer, or fall. Dicamba and chlorsulfuron can provide excellent control when applied in the spring or fall. In Montana, 2,4-D amine applied in May controlled 97 percent of the first year houndstongue plants and 77 percent of the plants when applied to second year plants that were flowering.

Contact your local county extension agent for recommended use rates, locations, and timing.

Biological - Five biological control agents are being screened for their potential on use on houndstongue in Montana. These insects include a root weevil, *Mogulones cruciger*, a seed weevil, *Mogulones borreginis*, a stem weevil, *Mogulones trisignatus*, a root beetle, *Longitarsus quadricuttatus*, and a root fly, *Cheilisia pasquorum*. No biological control agents for houndstongue have been released in North Dakota.

Livestock generally tend to avoid houndstongue in rangelands because the plant is unpalatable. However, livestock will feed on plants that are found in hay.

References:

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- Houndstongue and rosette photographs courtesy of University of Nevada Extension Service.
- Flower photograph courtesy of Washington State Noxious Weed Control Board.
- Nutlets photograph courtesy of Montana War on Weeds (www.mtwow.org).