WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD
(Updated June 2000)

Scientific Name: *Cynoglossum officinale* L.

Common Name: Houndstongue

Family: Boraginaceae

Legal Status: Class B

Description and Variation: A biennial or short-lived perennial that grows 1-4 ft tall. The taproot is thick, woody, black and branching. A rosette with hairy leaves forms the first year. The leaves are alternate and are hairy, rough and lacking teeth or lobes. Lower leaves are linear, from 4-12 inches long, ¾ inch wide, pointed and tapering to the stem. The upper leaves are smaller and without stems. The flower is a dull reddish-purple, about 3/8-inch wide and 5-lobed. It has 5 anthers, 5 petals, and 5 sepals, which form a star shaped calyx. The tube is shorter than the calyx and the calyx is 4-6 mm long in flower, enlarging to 1 cm in fruit. Fruit is composed of 4 prickly nutlets each about 1/3-inch long. Seeds are ovoid, flat on top with a scar that runs near the lower surface. Stems are erect, single, unbranched below the inflorescence, hairy, and coarse. The green plants of houndstongue have a disagreeable odor.

Economic Importance:
Detrimental: Houndstongue is a very strong competitor that competes with desirable forage. The seeds have the ability to attach to people, the coats of livestock and vehicles, enabling the plant to spread great distances. Once the seeds cling to animals, they are very hard to remove which can lower the value of sheep and can cause irritation and behavioral problems in cattle.

Houndstongue is poisonous. It contains pyrrolizidine alkaloids that stop the reproduction of liver cells. Sheep are less susceptible than cattle or horses. Horses are especially at risk when confined to areas with houndstongue. Symptoms include; weight loss, photosensitization, jaundice, diarrhea, nervousness, convulsions and coma. Animals may live up to 6 months after consuming a lethal amount. It can also cause dermatitis in humans (Stubbendieck et al. 1994).

Considered non-palatable under range conditions, houndstongue is eaten when dried plants are found in hay, and the toxic properties are still capable of poisoning livestock. Animals do not recover, (or recovery is rare) and in Colorado horse deaths have been attributed to contaminated hay (Upadhyaya and Cranston 1991).

Beneficial: Used as “folk” remedies for many disorders, including eczema, keratodermia, acne vulgaris, corn callus, dermatophytosis, burns and hemorrhoids. Used as “folk” pesticides; keeps rodents out of garden and food storage. Fever remedy. (Biology of Canadian weeds)

Habitat: Zones consist of hot, dry summers and cold winters. Soils: from well drained, relatively coarse, alkaline soils to clay subsoil in the open coniferous and deciduous forest. Houndstongue is a shade tolerant plant and thrives in wetter grasslands. Found on roadsides, meadows and disturbed places.

Geographic Distribution: Introduced from Eurasia (Britain, Europe, and Russia) in cereal seed.

History: Houndstongue is native to Eurasia and has spread rapidly throughout the United States and Canada. It is found in most counties of eastern Washington State: Asotin, Benton, Columbia, Ferry, Franklin, Kittitas, Klickitat, Lincoln, Okanogan, Pend Orielle, Skamania. Spokane, Stevens, Walla Walla, Whatcom, Whitman and Yakima. Houndstongue is considered a noxious weed in Montana, Oregon, Washington, Wyoming and all regions of British Columbia.

Growth and Development: A rosette forms the first year and is able to resist mowing and grazing and also able to withstand severe drought. Flowering occurs the following year and the seeds overwinter in about the top 1cm of soil. Its thick, deep taproot enables it to be a strong competitor for soil resources. Seeds attach to animal hair and clothes and can be distributed long distances. In the second growing season flowering begins around June and seeds are formed and dropped at the end of the summer. Seeds germinate from February to May.

Reproduction: Reproduction is by seed only. Seeds are produced by autogamy (self pollination). Seed production varies from about 314-674 seeds per plant. Seeds remaining on the soil surface can remain viable up to two years. At 1-6 inch soil depth the seeds germinate within one year. The highest germination percentage occurred in seeds buried at 1/2inch..

Response to Herbicide: For site specific herbicide recommendations, consult the annually updated *Pacific Northwest Weed Control Handbook.* Follow all label directions.

An application of 2, 4-D amine at 1.12 kg/ha applied in May gives about 97% control of first year plants and application at flowering controlled 77% of the second year plants (Upadhyaya and Cranston 1991). In British Columbia, application of 2, 4-D at the 11-inch stage of bolting gives the best control of seed production. Chlorosulfuron at 0.07 and 0.14 kg/ha applied to the rosettes, the 6-inch and 11 inch stages of bolting prevented seed production completely (Upadhyaya et al. 1988).

Response to Cultural Methods: Cultivation of young rosettes in the autumn or early spring gives effective control. Mow flowering stems close to ground to reduce seed set. Clipping during the second year flowering can greatly reduce seed production. Reseed problem areas with fast growing grasses. Do not overgraze.

Response to Mechanical Methods: Plants can be pulled and dug out, making sure to remove the roots. Plants can also be cut, making sure to sever below the root crown.

Biocontrol Potentials: Research ongoing. There are currently no approved biological control agents for houndstongue in Washington State.

References:

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** References available from the Washington State Noxious Weed Control Board Office in Kent.*