

POISON HEMLOCK

Conium maculatum L.

Family: *Apiaceae* (Parsley).

Other Scientific Names: None.

Other Common Names: Hemlock.

Legal Status: Not categorized.



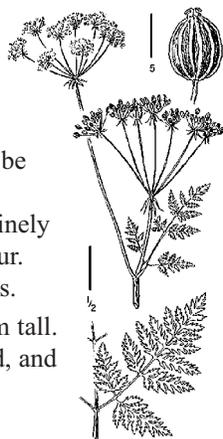
Growth form: Biennial forb.

Flower: White flowers are borne in umbrella-like clusters supported by a stalk.

Seeds/Fruit: Light brown, ribbed, and concave.

Leaves: Generally alternate but may be opposite above (Stubbendieck et al. 1995). Leaves are shiny, green, and finely divided and have a strong musty odour. Leaflets are segmented on short stalks.

Stems: Mature plants grow 1.2–3.0 m tall. Stems are erect, extensively branched, and covered with purple spots.



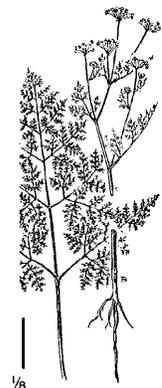
Roots: Taproot.

Seedling: Seedling leaves are fern-like in appearance.

Similar Species

Exotics: Similar to other exotic members of the parsley family, such as wild caraway (*Carum carvi*) and wild carrot (*Daucus carota*). Spotted stems are diagnostic.

Natives: Water hemlock (*Cicuta douglasii*), which is similar in appearance, lacks the distinctive spotted stems.



Impacts

Agricultural: Poison hemlock crowds out desirable forage species and can poison livestock and humans. Sheep are less sensitive to it than cattle and horses (DiTomasso 1999).

Ecological: Although not an aggressive invader, poison

hemlock may gradually increase in native riparian and lowland communities.

Human: All parts of the plant are highly poisonous, and poison hemlock should be handled with care.

Habitat and Ecology

General requirements: Poison hemlock is generally found on dry to moist soils, can tolerate poorly drained soils, and tends to be scattered in riparian areas. It is usually found along streams, irrigation ditches, and the borders of pastures and cropland, and it can gradually invade perennial crops.

Distribution: In BC it is found in wet to mesic habitats in the lowland zone and is locally common in the southwest of the province, particularly in the Vancouver and Victoria areas (Douglas et al. 1998). It is present in the Kootenay, Okanagan, Mainland, Vancouver Island, and Cariboo regions.

Historical: Introduced from Europe, the plant is thought to have been used to kill Socrates.

Life cycle: Poison hemlock is a biennial that can grow up to 3 m tall. In the first year, plants form a small seedling that resembles wild carrot. Plants usually bolt in the second year and produce numerous clusters of white flowers. Plants flower from April through July, and seeds begin in July and continue into winter. Most seeds mature before dispersal and can germinate immediately if environmental conditions are favourable, but some seeds remain dormant (Baskin and Baskin 1990).

Mode of reproduction: By seed.

Seed production: No information available.

Seed bank: Seeds may remain viable in the soil for about 3 years (Calweed 1997).

Dispersal: Seeds can be spread by machinery, on clothing, or in transported soil. They are also dispersed to a limited extent by water and wind.

Hybridization: No information available.

Management

Biocontrol: *Agonopterix alstroemeriana* (moth), accidentally introduced into the US, apparently feeds exclusively on poison hemlock. It is found in Colorado and is a biological control agent in Idaho, Oregon, and Washington, where it is effective (William et al. 1996). This species has not been found in BC.

Mechanical: Poison hemlock can be controlled by digging, repeated mowing, pulling, or spring/winter burns. Care should be taken to avoid contact with bare skin (wear gloves). Wash hands thoroughly after handling any part of this plant.

Fire: No information available.

Herbicides: Picloram, dicamba, 2,4-D, and glyphosate have been used for chemical control of poison hemlock. Apply foliar herbicides during the rosette stage with a wick to minimize damage to adjacent desirable vegetation. Cut any stems that arise after treatment. Herbicide treatment may need to be repeated for several years until the seed bank is depleted (Panter

and Keeler 1988). Consult the most recent edition of BC Ministry of Agriculture, Food and Fisheries Crop Production Guides for specific recommendations.

Before applying herbicides, read the label for full use and precautionary instructions.

Cultural/Preventive: Prevent the establishment of new infestations by eliminating seed production and maintaining healthy native communities.

Integrated Management Summary

The tendency of this species to grow in wet areas may restrict the use of certain herbicides. Eliminate seed production and exhaust the soil seed bank by removing seed heads before seeds mature. Use gloves for hand-pulling, and avoid touching the plant with bare skin.

References

Baskin, J. M., and C. C. Baskin. 1990. Seed germination ecology of poison hemlock. *Canadian Journal of Botany* 68: 2018–2024.

Calweed Database. 1997. *California Noxious Weed Control Projects Inventory*. Natural Resource Projects Inventory, Information Center for the Environment, University of California, Davis.

<http://endeavor.des.ucdavis.edu/weeds/> [8 Mar 99].

DiTomasso, J. M. 1999. Poison hemlock. In R. L. Sheley and J. K. Petroff, eds. *Biology and Management of Noxious Rangeland Weeds*. Corvallis: Oregon State University Press.

Douglas, G. W., G. B. Straley, D. Meidinger, and J. Pojar, eds. 1998. *Illustrated Flora of British Columbia*. Vol. 1: *Gymnosperms and Dicotyledons (Aceraceae through Asteraceae)*. Province of British Columbia.

Panter, K. E., and R. F. Keeler. 1988. The hemlocks: Poison hemlock (*Conium maculatum*) and water hemlock (*Cicuta* sp.). In L. F. James, M. H. Ralphs, and D. B. Nielsen, eds. *The Ecology and Economic Impact of Poisonous Plants on Livestock Production*. Boulder, CO: Westview Press.



Stubbenieck, J., G. Y. Friisoe, and M. R. Bolick. 1995. Poison hemlock. *Weeds of Nebraska and the Great Plains*. Lincoln: Nebraska Department of Agriculture, Bureau of Plant Industry.

US Department of Agriculture. Undated. Poison hemlock. *Western Wetland Flora: Field Office Guide to Plant Species*. USDA Soil Conservation Service, West National Technical Center, Portland, OR.

Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/WESTFLOR/WESTFLOR.htm> [16 Jul 97].

Whitson, T. D. (ed.), L. C. Burrill, S. A. Dewey, D. W. Cudney, B. E. Nelson, R. D. Lee, R. Parker. 1996. Poison hemlock. *Weeds of the West*. Western Society of Weed Science, in cooperation with the Western United States Land Grant Universities Cooperative Extension Services, Newark, CA.

William, R. D., D. Bell, T. L. Miller, R. Parker, K. Al Khatib, R. H. Callihan, C. Eberlein, and D. W.

Morishita. 1996. *Pacific Northwest Weed Control Handbook*. Pullman: Washington State University Cooperative Extension.