



University of Idaho
College of Agriculture

Cooperative Extension Service
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Poison Hemlock

A Threat to Man and Livestock

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Poison hemlock (*Conium maculatum* L.), a member of the parsnip or wild carrot family, was introduced into the U.S. from Europe. The plant is now found throughout Idaho along roadsides, waterways and cultivated fields in waste areas. All parts of the plant are poisonous, including leaves, stems, roots and fruits.

As the plant grows, the poison accumulates in the stem, leaves and fruits. Poison concentration is greater in those plant parts in the order listed, starting with the stem. Roots contain the least amount of poison. The plant organs are most poisonous just before maturation of the seed.

Poisoning of humans often occurs when the plant is confused with wild parsnip, parsley or anise seeds. Poison hemlock contains five volatile alkaloids which are chemically related to nicotine, and these toxins were used in ancient times as a means of putting condemned men to death. The juice was given to Socrates to drink, causing his death in Athens, Greece, in 329 B.C. Also, Indians mixed crushed seeds with decomposed deer liver to poison war arrows.

The amount of green poison hemlock that can cause poisoning in horses and cows has been reported to be as low as one-fourth to one-half of a percent of the animal's weight respectively. This is quite variable and is dependent on stage of development and geographical area (plants from southern latitudes are more poisonous than plants from northern latitudes).

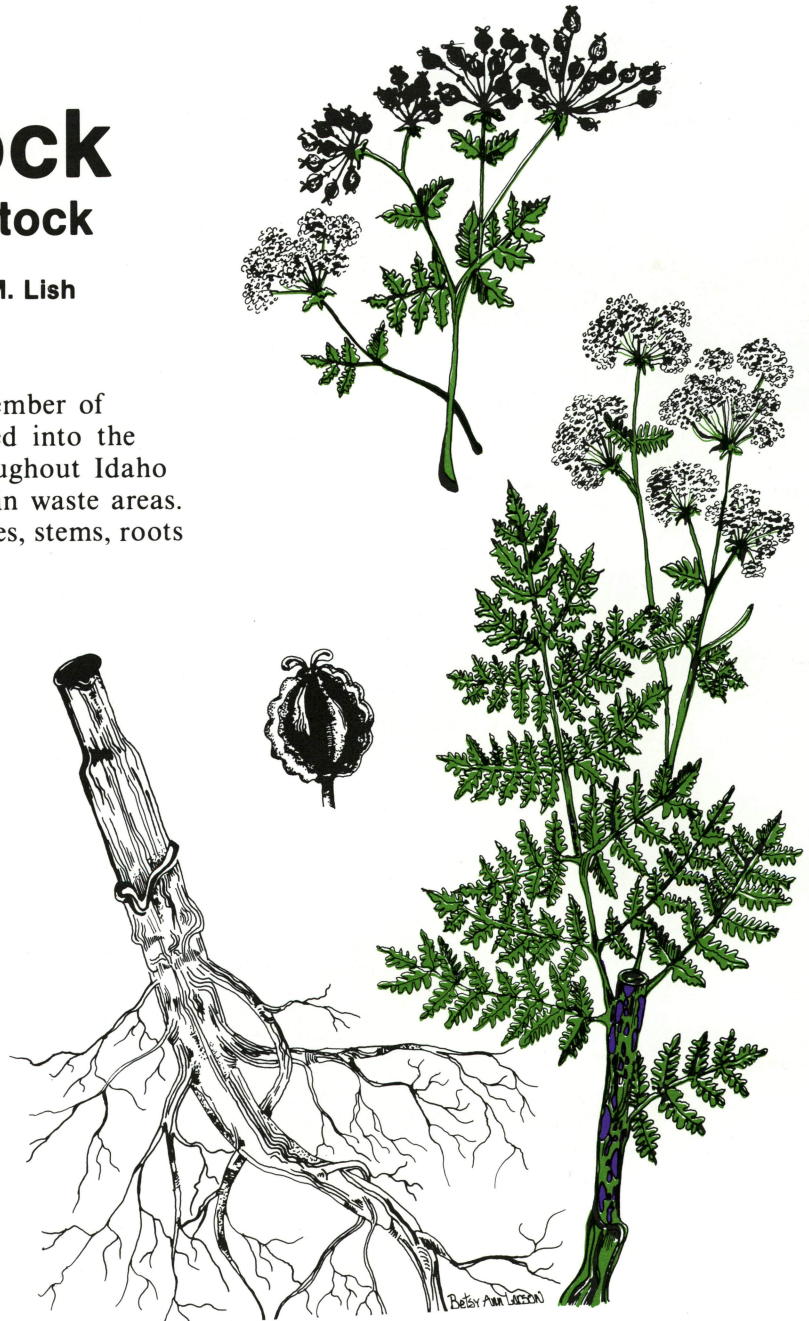


Fig. 1. Poison hemlock, *Conium maculatum*. The purple mottling on the stem is an important and simple identification feature that anyone can recognize. Children living near poison hemlock should learn to recognize it.

Description

Poison hemlock (Fig. 1), a biennial, reproduces solely by seed. Seedlings have one pair of smooth, spoon-shaped, dark green cotyledons or "seed leaves." Subsequent leaves are pale green and finely divided. The plant usually remains vegetative (i.e., does not flower) during the first year of growth, producing a large rosette of leaves. During the spring of its second year, the plant bolts to produce tall, erect flowering, leafy stems from 4 to 12 feet tall. This plant then produces seed and dies.

Poison hemlock has a long, white taproot which may be branched. The stem is strong, smooth and **mottled with purple spots**. The toothed and deeply cut leaves are in leaflets of three and have a mouse-like odor. The plant has white flowers that grow in small, erect clusters. Each flower develops into a green, deeply ridged fruit that contains several seeds which turn grayish-brown at maturity.

The Danger

The plant resembles parsnips, parsley, anise and the wild carrot to which it is related. Poison hemlock, however, can be readily distinguished from wild carrot since the leaf stalks of wild carrot are distinctly hairy. Poison hemlock leaf stalks are perfectly smooth and absolutely **hairless**. If you like to experiment with wild food plants, **beware of this one!**

Poison hemlock is also closely related to water hemlock, one of the most poisonous plants known to man. Water hemlock grows in wet areas, such as along stream banks and marshes. An important identifying feature of water hemlock is its root system. The roots are thickened and occur in a bunch that is attached to a single point on the thickened base of the stem. A number of horizontal yellow lines across the delicate pith can be seen if the basal portion of the stem is cut in half lengthwise.



Fig. 2. Poison hemlock can cause cattle death.

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Symptoms and Treatment

Livestock usually will eat poison hemlock only when other suitable food is not available (Fig 2). If the plant is ingested, poisoning symptoms can be observed within 12 minutes. Poisoned cattle should be given stimulants and large doses of mineral oil as soon as possible. A veterinarian should prescribe or administer this treatment.

Treatment may reduce losses when small amounts have been eaten. Animals which recover do not show aftereffects, although pregnant animals may abort. Some signs of poisoning include: nervous trembling, salivation, lack of coordination, dilation of the pupils, rapid weak pulse, respiratory paralysis and coma.

Hemlock poisoning in humans is similar to nicotine poisoning. Symptoms include dilation of pupils, trembling, dizziness, slowing of the heart-beat, central nervous system paralysis and muscular paralysis. Death is caused by respiratory failure.

Hemlock poisoning in humans may be treated by inducing vomiting. Vomiting may be induced by giving the victim a tablespoon of salt in a glass of warm water. Treatment should be repeated until vomit fluid is clear. The victim should lie down and keep warm and quiet until a physician arrives.

Control

Poison hemlock can be controlled by applying 1 to 2 pounds per acre of 2,4-D during the seedling year and/or before the seed stalk begins to develop. Repeated applications may be necessary. Addition of a good wetting agent will aid in effectiveness. Be sure to observe grazing restrictions on the 2,4-D label. 2,4-D can make poison hemlock more attractive to livestock than normal but not less poisonous. Always read the label before using any pesticide.

An alternate method of control is to mow plants after they have developed seed stalks. A single mowing, however, usually will not kill the plants. Repeated mowing will reduce its competitive ability and prevent or reduce subsequent seed production so that existing grass can eventually replace or outcompete the poison hemlock. Frequently reinvasion of poison hemlock occurs after mowing because plants send up new seed stalks. Seedlings will need to be controlled chemically.

**If a human eats poison hemlock, call for help.
Contact the nearest poison control center. In
Idaho, call toll free 1-800-632-8000.**