Know Your Poison

Manage poison hemlock correctly to prevent problems.

BY LANCE ZIESCH

PHOTO COURTESY OF PURDUE UNIVERSITY SCHOOL OF VETERINARY MEDICINE

"It is easily identifiable by the telltale purple spots found on its hollow stems and the rank, disagreeable odor it releases when disturbed."

Poison hemlock — the name alone sounds kind of old-fashioned and creepy. It brings to mind the kind of death an evildoer might have performed in an Agatha Christie novel. Or you might be reminded of the ancient Greeks, who commonly executed people with the stuff. Remember Socrates?

There's no need to tremble in fear if you discover a patch of poison hemlock growing in your pasture. The chances of your cows accidentally eating enough of it to harm them are minuscule. However, if you don't recognize it, don't know whether or not your cows will eat it, and don't manage it properly, you could be headed for trouble.

PHOTO COURTESY OF WASHINGTON STATE NOXIOUS WEED CONTROL BOARD

Poison hemlock was introduced from Europe as an ornamental, but is now classified as a noxious weed. It grows in wet, low-lying areas such as drainage sites or creek bottoms. Animals usually will not eat it if other green forage is available.

Poison hemlock, or *Conium maculatum,* can be a misleading weed. Its leaves resemble parsley, its roots resemble parsnips or wild carrots, and its seeds are often mistaken for dill or anise. Some folks also confuse it with its nontoxic relative, Queen Anne's lace. Whatever the case, this tall, leafy plant is none other than the stuff used to kill Socrates.

Introduced from Europe, poison hemlock is a weed that prefers wet, low-lying areas, such as drainage sites or creek bottoms. It also grows readily in nutrient-rich environments like stock pens. It can grow from 3 to 6 feet tall and is easily identifiable by the telltale purple spots found on its hollow stems and the rank, disagreeable odor it releases when disturbed. It flowers from May until August, producing many small, white flowers in umbrellalike clusters.

"Poison hemlock is a relatively unpalatable plant. Unless animals are extremely hungry, they will not eat it," says Paul Ohlenbusch, Kansas State University (K-State) Research & Extension specialist. "I tell people that 'if they're eating that, you should have been feeding them, because they're also chewing on the fence posts.'"

Poisonous parts

Poison hemlock is a biennial plant, which means it has a two-year growth cycle.

"We have growth in both the fall and spring. It grows from a seed one year and then reproduces from that plant the second year. The fall growth is primarily the new growth for the next year," Ohlenbusch says.

It's the new growth in early spring that can be the most dangerous; animals may eat the tender and succulent leaves that come from the roots if no other vegetation is available.

All parts of the poison hemlock plant are toxic, though the root itself seems to be nearly harmless in spring. But later in the year, it becomes extremely poisonous, as are the stem, leaves and fruit year-round.

Symptoms of poisoning

Poison hemlock contains assorted piperidine alkaloids that can cause respiratory failure in less than three hours. After ingestion, any of the following side effects could occur: frothing of the mouth, uneasiness, dilated pupils, weak and rapid pulse, frequent urination and defecation, convulsions, and clamping of jaws.

Affected animals will tend to become nervous. They will

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PHOTO BY WILLIAM JUSTICE

Poison Hemlock

Queen Anne's lace

PHOTO BY DON JOHNSON

Poison hemlock (*Conium maculatum)* can be easily confused with other similar weeds. It's often mistaken for Queen Anne's lace (also called wild carrot), which is not poisonous. Queen Anne's lace (*Daucus carota)* can grow from 1 to 5 feet in height, which is similar to the 3-to-6-foot range for poison hemlock. It also produces white flowers. However, in spite of these similarities, the two can be distinguished by the telltale purple spots on the stems of poison hemlock.

tremble and become uncoordinated. After this "excitement" phase, the animal becomes severely depressed. Heart and respiratory rates slow, and the legs, ears and other extremities become cold. Bloating may occur.

If an animal is seen eating poison hemlock, a veterinarian should be called immediately. Treatment consists of eliminating the toxin from the gastrointestinal tract and providing supportive care. In some cases, the animals become comatose but do not die. These animals will require intense nursing care until they recover. In animals that die, breathing stops due to respiratory paralysis before cardiac arrest.

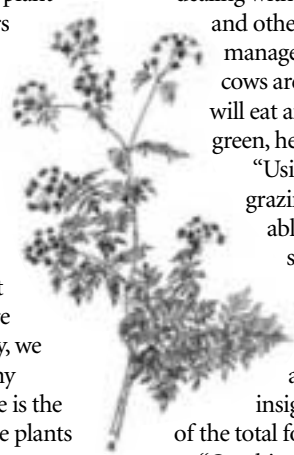
Animals that are susceptible to hemlock poisoning include cattle, pigs, elk and poultry. It also has been found in sheep and horses. For pregnant cows ingesting poison hemlock between Day 40 and Day 70 of gestation, birth defects — such as cleft palate and spinal abnormalities — can result.

Managing hemlock

As with most plant poisonings, the symptoms can overlap. To avoid accidental poisoning, Ohlenbusch advises that producers check their pastures for poison hemlock and other toxic weeds before putting animals in them. Make sure that a toxic plant is not the only green forage available, he says.

For small infestations of the plant, it's best to dig it up, he says. Since the entire plant is poisonous, workers should wear protective gloves.

"It should be dug up and completely destroyed," Ohlenbusch says. "Herbicides will work on it when it's young, but you don't want animals in there for a while. Generally, we don't recommend any control because there is the danger of making the plants palatable."



Herbicides can change the metabolism of toxic plants, creating a more palatable plant that animals will eat. For this reason, the treated plants should be completely dead before the animals are reintroduced to the area. This is the same for most noxious weeds, Ohlenbusch says.

"If sprayed, the animals may eat them, and we will have poisoned them by what we did," he says. "We don't know what that percentage chance is, but we are not willing to risk that. If the animals have plenty to eat, they are not going to touch poison hemlock."

Steve Lucas of Mountain View Farm, Louisa, Va., says the key to dealing with poison hemlock and other toxic plants is management. If your cows are starving, they will eat anything that's green, he says.

"Using managed grazing, I am actually able to control these species by allowing the cows to graze the plants when they are small and a relatively insignificant portion of the total forage diet," he says. "One bite of a potentially poisonous plant will not kill a cow or calf."

He goes on to say that well-managed animals on pasture or range usually will consume enough other forage to dilute toxic substances ingested during their daily grazing.

"One of the main problems I see is that humans, like cows, are creatures of habit. We generally follow the same grazing patterns year after year. The pastures that were grazed early last year and the year before will be grazed early this year. The pastures that were grazed late will be grazed late. As a result, the pastures that had a problem last year will have a greater problem this year. An astute manager will recognize this and adjust his grazing management accordingly."

Ohlenbusch agrees and says that most animals must ingest at least 0.25% of their body weight to bring on symptoms from toxic plants. Of course, there are exceptions to this rule, he adds.

"Knowing what plants are poisonous, the palatability of the plant and the symptoms [of poisoning] to look for are critical," he says.

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