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## Poison Hemlock – The Toxic Parsnip

We often get questions about wild carrot (*Daucus carota* L.) only to find out that the question is actually about poison hemlock (*Conium maculatum* L.). Although these two plants may look similar, poison hemlock is toxic to cattle, horses, swine, sheep, goats, dogs, and people when ingested. The plant produces volatile alkaloids coniine (an alkaloid similar in effect to nicotine) and gamma-coniicine. The easiest way to tell the two plants apart is that poison hemlock will have purple spots or blotches on its smooth (hairless) ridged stems. Wild carrot will usually have a covering of hairs.



**Figure 1. Poison hemlock flowers**

**Description:** Poison hemlock can often be found along roadsides, edges of cultivated fields, railroad tracks, stream banks, waste areas, and sometimes along the fence rows of pastures. Like wild carrot, poison hemlock is a biennial. This means that it lives its life over two years. In the first year, poison hemlock goes through vegetative growth. In the second year, it will produce small white flowers arranged in umbrella-like cluster (figure 1), similar to wild carrot. It is in the second year, when it bolts and flowers, that it tends to catch the eye. The flower stalks can grow 3 to 8 feet tall. The leaves are finely divided having a triangular shape (figure 2). When comparing both poison hemlock and wild carrot leaves, wild carrot has a more rounded lobe in the leaf. Where as Poison hemlock's leaf reminds me of a sharp arrow head. For more information and pictures of poison hemlock's description go to [http://www.ppws.vt.edu/scott/weed\\_id/coima.htm](http://www.ppws.vt.edu/scott/weed_id/coima.htm) and <http://www.vet.purdue.edu/depts/addl/toxic/plant28.htm>.



**Figure 1. Poison hemlock leaf**

**Symptoms of Poisoning:** All parts of the plant can be toxic. Young leaves in the spring are the most toxic and the root the least toxic. The fruit is most dangerous in the fall. Lethal doses can be small, so it is important not to let animals graze or feed on poison hemlock. In the case of horses, 4 to 5 pounds of the leaves may be lethal. One to 2 pounds can be lethal for cattle and 4 to 8 oz for sheep. Young animals are more susceptible. Symptoms may appear within 1 hour of ingestion. This starts with a nervous stimulation and can progress in 2 to 3 hours later into respiratory paralysis. In rare cases the animal may have convulsions. In many cases symptoms include, bloating, incoordination, intestinal irritation, dilation of pupils, rapid and weak pulse, loss of appetite, salivation, and blue coloration about the mouth. Ingestion of poison hemlock in days 55 to 75 of gestation may result in birth defects.

**Treatment:** If an animal becomes poisoned by poison hemlock, a veterinarian may administer nerve and heart stimulants as soon as possible. Large doses of mineral oil and purgatives are also prescribed to empty the digestive tract. For more information about poison hemlock's toxic characteristics please see <http://www.vet.purdue.edu/depts/addl/toxic/plant28.htm>.

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**Knowledge to Go**

1-888-EXT-INFO

**Control:** Control of poison hemlock in grass pastures is more effective in the first year of its life cycle. In a grass pasture, 2,4-D, Banvel/Clarity (dicamba), or Crossbow (2,4-D and tryclopyr) provide control. Crossbow is slightly better than both 2,4-D and Banvel/Clarity. However, be aware that these herbicides will damage any legumes. Spot treatments of glyphosate products (Glyphomax Plus, Roundup WeatherMax, Touchdown, etc) will also control poison hemlock, but be aware that this will also damage any desired vegetation. Always read and follow labels when using herbicides.

We have also noted that poison hemlock is beginning to invade no-till corn and soybean fields. Herbicides that have activity on this weed and that can be used before planting soybeans are 2,4-D, dicamba, and glyphosate. Dicamba and glyphosate have shown slightly better efficacy than 2,4-D. The best overall control would likely be attained with a mixture of glyphosate and dicamba.

**Considerations Using Dicamba in Soybean:** Use 1/2 pt/A on coarse soils and 1 pt/A on medium or fine soils with at least 2% organic mater. Not all dicamba products have PRE-plant labels in soybean: consult the label before buying for this purpose. Clarity can be applied 14 days before planting if 8 fl oz/A or less is used and at least 1 inch of rainfall or over head irrigation occurs; however, if 16 fl oz/A is used there is a 28 days waiting period before planting soybean.

**Considerations Using 2,4-D in Soybean:** Use 1 to 2 pt/A of a LVE (Low Volatile Ester formulation). Before planting soybean, using 2,4-D at 1 pt/A requires a 7 day waiting period before planting and if more than 1 pt/A is used, a 30 day waiting period must be observed. These restrictions may be slightly different depending on the product, please read the specific products label before buying for this purpose.

**Considerations Using Glyphosate:** Use 0.75 lb ae/A. Ae stands for acid equivalent. This is the glyphosate weight in its acid form. Most labels will give ae per gallon to calculate amount to be used. Glyphosate is a non-selective herbicide and can damage desirable vegetation if it comes in contact with desirable vegetation.

For more information on toxic plants of Indiana to livestock and pets see <http://www.vet.purdue.edu/depts/addl/toxic/cover1.htm>.



**Poison hemlock growing along a creek.**

Information listed here is based on research and outreach extension programming at Purdue University and elsewhere.

The use of trade names is for clarity to readers of this site, does not imply endorsement of a particular brand nor does exclusion imply non-approval. Always consult the herbicide label for the most current and update precautions and restrictions. Copies, reproductions, or transcriptions of this document or its information must bear the statement 'Produced and prepared by Purdue University Extension Weed Science' unless approval is given by the author.