Meeting Attachments

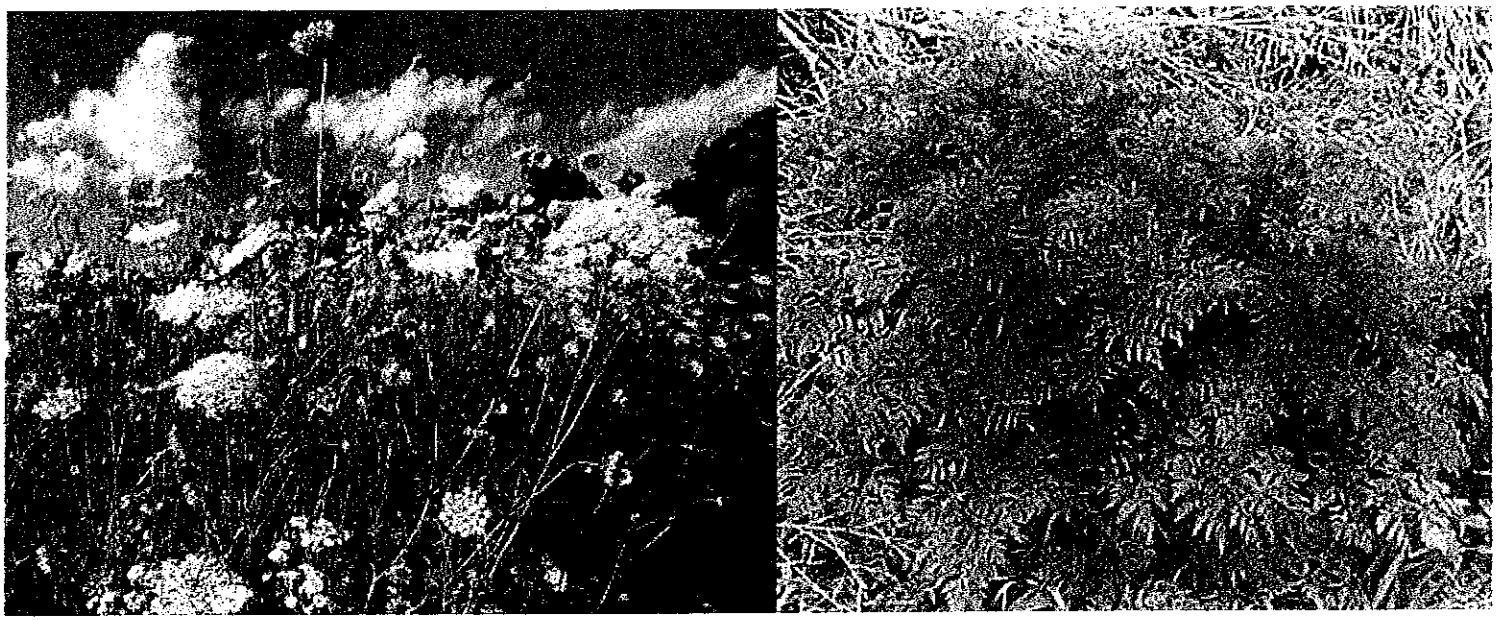
ATTACHMENTS:

- MISSOURI CONSERVATION - NOXIOUS PLANTS (PDF)
- SMC ELECTRIC - QUOTE NO. 40472782-00 (PDF)

Poison hemlock identification and control

Eric Anderson, Isabel Branstrom and Erin Hill, Michigan State University Extension - April 20, 2023

Poison hemlock is a potentially dangerous weed found in Michigan, and identifying it is the first step in controlling it.



Wild carrot (Queen Anne's lace, left), a Michigan noxious weed, is often mistaken for poison hemlock (right) and vice versa. Photos by Missouri Department of Conservation (left) and Eric Anderson, MSU Extension (right).

Poison hemlock (*Conium maculatum*) was originally brought to the United States in the 1800s as an ornamental garden plant (another good idea gone awry) and is now found throughout North America. In Michigan, it has been reported in several counties throughout the Lower Peninsula and in a few in the Upper Peninsula, according to Michigan Flora Online. Recently, we have identified it in several locations, including Allegan, Oakland and Van Buren counties.

Poison hemlock is a biennial that forms a rosette its first year, often going unnoticed, and then produces white umbel flowers (umbrella-like) on tall stems in the spring-summer of its second year. These types of flowers are common in the carrot family and are similar to wild carrot (also known as Queen Anne's lace, *Daucus carota*), which is often mistaken for this plant at younger stages. The second-year stems of poison hemlock are hairless and have purple spots, which help distinguish it from wild carrot.

It's hard to tell from this picture, but these plants are over 8 feet tall, an indicator this is poison hemlock and not wild carrot. Photo by Eric Anderson, MSU Extension.

Poison hemlock	**Wild carrot (Queen Anne's lace)**
• Biennial	• Biennial
• Finely-divided, lacy leaves	• Finely-divided, lacy leaves
• Green stems and leaves lack hairs	• Fine hairs on leaves
• Hollow stems	• Solid green stems
• Exudes unpleasant odor when crushed	• Root smells like carrot
• 6-10 feet tall at maturity	• 1-2 feet tall at maturity
• Flowers June through August	• Flowers July through September
• White, delicate, "umbrella-like" flowers	• White, delicate, "umbrella-like" flowers

Purple spotting on smooth, hollow stems is a tell-tale sign of poison hemlock. Photo by Eric Anderson, MSU Extension.

Poison hemlock reproduces exclusively by seed. According to Mitich LW, 1998, it can produce up to 38,000 seeds per plant that generally fall near the mother plant but can be dispersed by water, birds and other wildlife. Seeds can germinate immediately or lay dormant for up to six years. The plant will die soon after it sheds seed, but the stems will remain standing and slowly release seed into winter. More detailed information about poison hemlock can be found at USDA's Poison Hemlock website and University of California's Poison Hemlock website.

While looking at the plants or touching them is generally not hazardous, all parts of poison hemlock are toxic if ingested by humans and it is infamously known as the form of death chosen by Socrates. It is also highly toxic to livestock and wildlife. More information can be found about its toxicity at Poison Control.

Lacy leaves and white flowers of poison hemlock are often confused with wild carrot. Photos by Eric Anderson, MSU Extension.

The phototoxic compounds, furanocoumarins, that cause blisters in those who touch giant hogweed are also present in the sap of all other plants in the carrot family, including poison hemlock. Contact with the sap can cause sensitivity to UV light from the sun, resulting in blisters. The difference is that people are much less likely to encounter the sap on carrot family species other than giant hogweed as it is inside the stem, whereas on giant hogweed it is also present on the exterior.

If you find any poison hemlock in your yard or pasture, you can dig up plants, including the tap roots, for removal. Given the reproductive capacity of this plant, remove it as soon as possible to avoid perpetuating the infestation. Wear gloves, long sleeves, pants, socks and shoes to protect your skin from the sap. Compost or dispose plants with yard waste. Poison hemlock is not considered an invasive species in Michigan, therefore it should not be disposed with regular trash.

Do not burn plants to prevent any accidental inhalation. Mowing or weed whacking will not kill the plant but can reduce seed production in second year plants. If you are mowing or weed whacking in areas infested with poison hemlock, wear protective eyewear and a dust mask to prevent exposing your eyes and lungs to small particles.

Stems of poison hemlock are smooth, purple-spotted and finger-thick. Photo by Eric Anderson, MSU Extension.

Herbicides can also be effective for controlling poison hemlock when sprayed on first year plants and small plants before flowering in the second year. Mature, flowering plants like the ones in the photos will not likely be chemically controlled, and mechanical control measures should be used prior to seed set.

Choosing a herbicide will depend on the desirable surrounding vegetation. If poison hemlock is growing amongst grasses, synthetic auxin herbicides such as 2,4-D, dicamba, clopyralid and triclopyr will selectively control the poison hemlock, leaving the grass unaffected. If the poison hemlock is in a bare ground area, or other area where the surrounding vegetation is not of importance, a broad-spectrum herbicide, such as glyphosate (active ingredient in Roundup Weed and Grass Killer, among others) can be effective. Note that glyphosate will injure or kill other plants contacted during application, so care is needed to avoid green plant material, exposed roots and injured bark of desired plants.

If the poison hemlock is growing among desirable broadleaf plants or shrubbery, mechanical removal is advised. Remember to read and follow all labeled instructions prior to making any pesticide application.

Other poison hemlock look-alikes that can grow in disturbed areas, woodland edges and along road sides include Japanese hedge parsley (*Torilis japonica*) and false chervil (*Anthriscus sylvestris*). Japanese hedge parsley has lacey, finely divided leaves like poison hemlock, but has fine hairs along the leaves and stem and does not have the distinct purple spotting. There are also hooked hairs on the fruit. False chervil fruit are narrowly egg-shaped. Stems are hairy, ribbed and the leaf sheath wraps around the stem. Both Japanese hedge parsley and false chervil generally do not reach more than 6 feet at maturity.

Stem of hedge parsley (left) and wild chervil (right). Note the presence of fine hairs and the lack of purple spots that are present in poison hemlock. Photos by Dan Tenaglia, Missouriplants.com, Bugwood.org (left) and Leslie J. Mehrhoff, University of Connecticut, Bugwood.org (right).

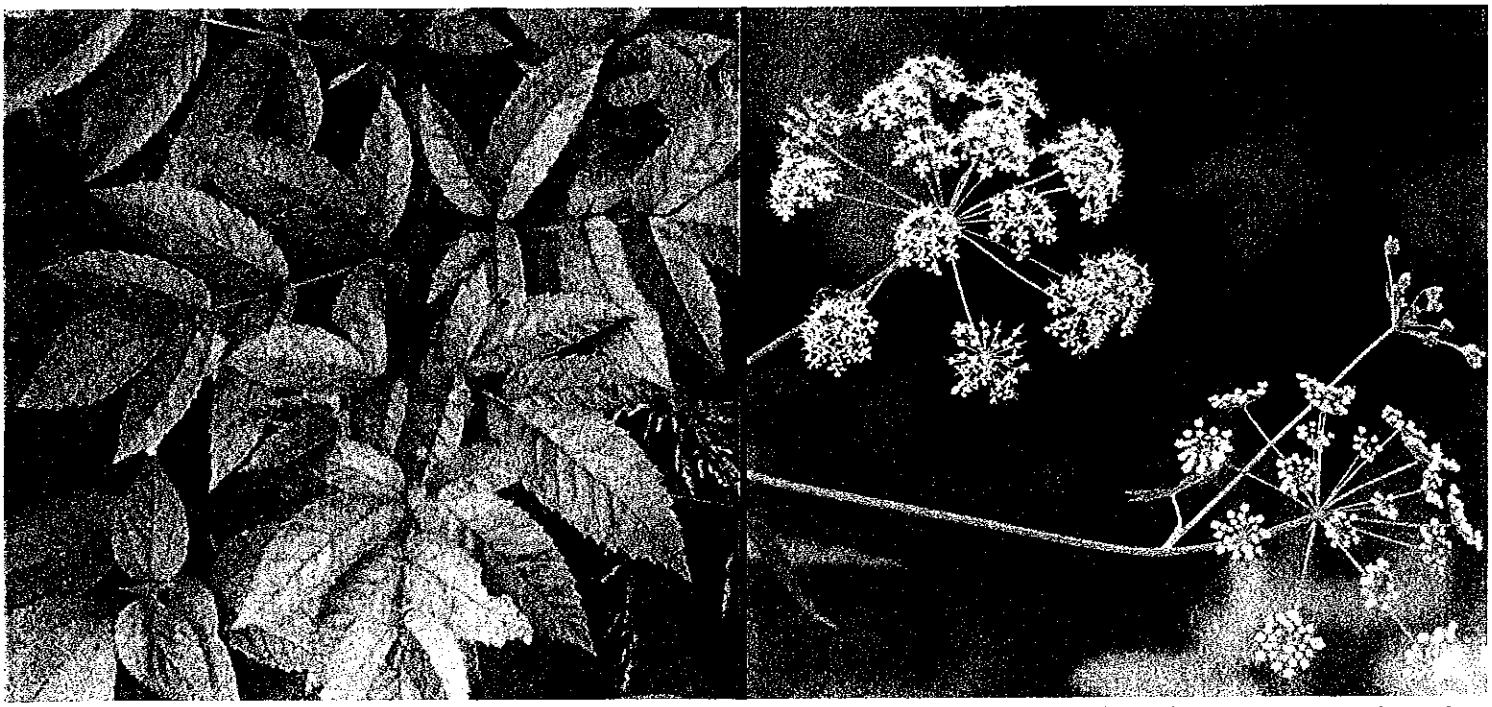
Along with differences in stem appearance, the fruits of Japanese hedge parsley (left), false chervil (center) and poison hemlock (right) have distinct shapes and textures that are helpful when telling

University of Connecticut, Bugwood.org (center) and John M. Randall, The Nature Conservancy, Bugwood.org (right).

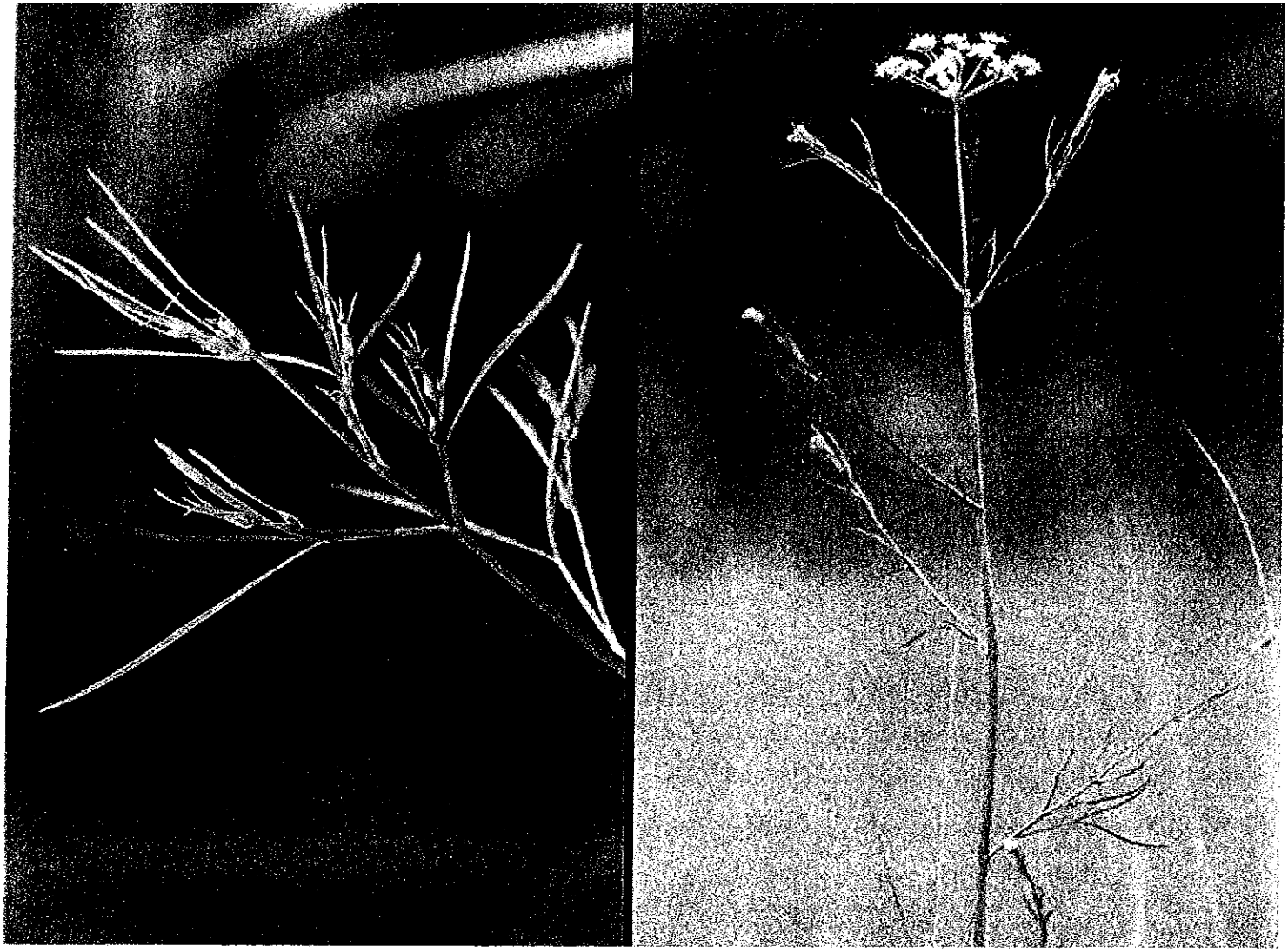
Another type of poisonous hemlock found in Michigan is water hemlock. Two species of water hemlock—*Cicuta maculata* (biennial) and *Cicuta bulbifera* (perennial)—are native to the state. Both exhibit some of the same toxic properties as the western relative, *Cicuta douglasii*. More is known and published about *C. douglasii*, so most recommendations are based on that species, although habitat, growth habit and toxicity are similar among these species.

Water hemlock grows in wet areas such as in bogs, ditches and along streams. The toxin, cicutoxin, produced by water hemlock has a carrot-like odor and is a strong convulsant produced almost entirely in the thick taproots and, to a lesser extent, in the stems, leaves and seeds.

Water hemlock (*C. maculate*) may be mistaken for poison hemlock due to the similarity in flower structure, but it does not have lacy, finely divided leaves, is always found near water, and only grows to be a few feet tall. The other native water hemlock (*C. bulbifera*) has very narrow, linear leaves that do not look like poison hemlock.



Water hemlock (Cicuta maculata) foliage (left) and flower (right). Photos by Chris Evans, University of Illinois, Bugwood.org (left) and Rob Routledge, Sault College, Bugowood.org (right).



Water hemlock (Cicuta bulbifera) foliage (left) and flower (right). Photos by Rob Routledge, Sault College, Bugowood.org.

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