



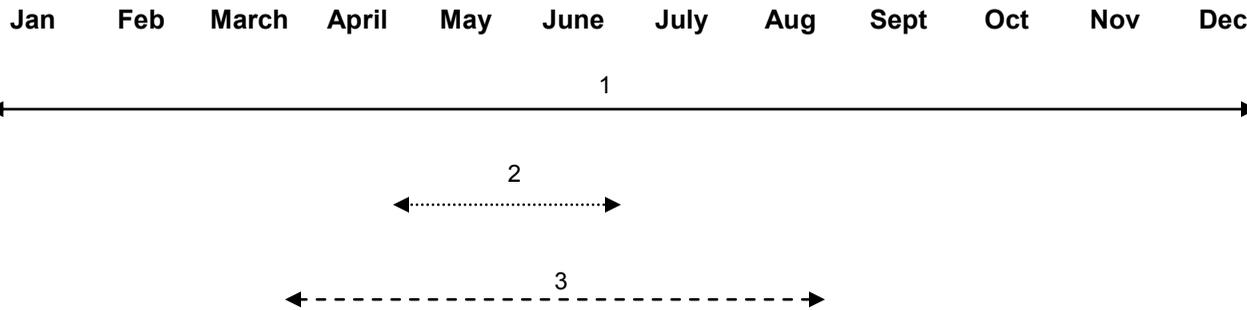
Flowerhead in Winter



Hemlock Structure



Poison Hemlock Root on Bottom



Management Techniques

1. (Year Round) Hand Removal: Entire taproot must be removed, which is often extensive, so care should be taken to minimize soil disturbance as this can lead to further seed germination. Fall is best for removal for first year plants, spring is best for second year plants. Seeds may remain on plant throughout winter and may be removed. Glove should be worn and hands should be washed afterwards.
2. (May-June) Repeated Mowing: Mowing is only effective if repeated several times over the growing season to prevent the plant from going to seed but may also be effective in reducing its carbohydrate store.
3. (April to August) Herbicide: best applied before plant goes to seed but can be used to prevent seeds from germinating. Selected herbicide should be based on type of infestation. Repeated applications for 3-5 years are necessary to deplete the seed bank.
 - Glyphosate: nonselective, best used in isolated or extremely heavy infestations where native plants are not at risk.
 - 2,4-D: Targets broadleaf vegetation so best applied in prairie settings that are dominated by grasses and there are minimal forbs.
 - Pre-emergents (Chlorsulfuron, Hexazinone, etc) apply in early spring to prevent emergence of seed bank and prevent second year plants from gaining biomass and going to seed.

For More Information Visit:

<http://www.HawkeyeCWMA.org>

ALWAYS READ AND FOLLOW PESTICIDE LABELS.

Proper training for prescribed fires is highly recommended.

Basic training can be found online at <http://training.nwcg.gov/courses/s130.html> and <http://training.nwcg.gov/courses/s190.html>

Related Websites:

<http://www.iowadnr.com/forestry/invasive.html>
<http://plants.usda.gov>
www.invasivespecies.gov
www.nps.gov/plants/alien

Credits:

Photographs: William & Wilma Follett, USDA NRCS.. Doug Goldman, USDA NRCS. William S. Justice: Smithsonian Institution, Department of Botany. Gary A. Monroe: Point Reyes National Seashore.. 2016 Poisonous Plants: UPenn Veterinary Medicine. Steve Hurst: ARS Systematic Botany and Mycology Laboratory. Angela Carson: davesgarden.com. Britton N.L. and A. Brown: Kentucky Native Plant Society.

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The **Hawkeye Cooperative Weed Management Area (HCWMA)** is a collective group of county, state, and federal agencies, nonprofit organizations and community associations who have come together to **combat the invasive species problem in Eastern Iowa**. The HCWMA serves Benton, Cedar, Iowa, Johnson, Jones, Linn, and Louisa Counties and is open to all interested parties. The Term CWMA, or Cooperative Weed Management Area, refers to a local organization that integrates invasive species management resources across jurisdictional boundaries in order to benefit entire regions.

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All Hawkeye CWMA members (agencies, organizations, and individuals) are equal opportunity providers and employers.

Poison Hemlock

Conium Maculatum



A SERIOUS THREAT
To
Iowa's Prairie/Grassland

What is Poison Hemlock?

- A biennial flowering plant in the carrot family.
- Native to Europe and North Africa.
- Brought over as an ornamental plant.
- Spreads primarily by seed.
- Can grow up to twelve feet in height.
- Highly poisonous.



A Poison Hemlock infestation

What is the threat to Iowa?

- Easily invades disturbed/successional spots.
- All parts of the plant are toxic to both humans and animals.
- No natural controls.
- Forms dense monospecific stands.
- Very difficult to eliminate seed bank.
- A single plant can produce up to 30,000 seeds.

What does Poison Hemlock Look Like?

Identifying traits: A herbaceous biennial that grows up to twelve feet in height. Stems are hollow, hairless, and often covered in red or purple spots. Leaves are pinnately compound, deeply toothed and fern like. Forms umbrella shaped umbels of small white flowers in June-July. Often mistaken for wild carrot.

Leaves: Leaves are bipinnately compound and pinnately lobed with deep toothed lobes in manner similar to ferns. Texture is smooth and color vivid green to pale yellow. Leaves produce a strong odor when crushed.



Stems: Commonly growing up to 2 meters, stems are easily distinguished by the fact that they are hollow. Surface is smooth and base of the plant is often covered with red or purple blotches.

Flowers: Commonly formed into umbrella shaped clusters, flowers are small, white, begin to bloom at several locations near the top of the plant in June to August of their second year before going to seed.



Seeds: Flowers begin to seed in later summer. About an 1/8 inch long in size, barrel shaped, ribbed, and look similar to anise. Seeds are the only means of reproduction and one plant may produce up to 30,000.



Native Alternatives:

Spotted Water Hemlock (*Cicuta maculata*):

Considered America's most poisonous plant, grows across North America and prefers wet soils and lowlands. Though unlikely to serve as forage for wildlife, it is a popular flower for pollinators and will not outcompete native flora. Same caution should be exercised as with Poison Hemlock.



Cow Parsnip (*Heracleum maximum*):

Similar in appearance to Poison Hemlock, though lacking its extreme toxicity. Commonly grows up to 7 feet tall, and can be distinguished by its massive leaves. It is biennial and provides food for caterpillars and various bird species. Contact with the sap may cause sensitivity to sunlight.



The Dangers of Poison Hemlock to People and Livestock

Hemlock, even in small amounts is highly toxic and possibly fatal to both humans and livestock so it is important to remove it from anywhere it might come in contact with food crops or be foraged on by animals. Commonly mistaken for wild carrot and giant hogweed so it is important to be sure of ID.

Risk to Livestock:

As little as 0.25% of a cattle's weight can cause death, or less in other livestock and young animals. Full toxicity may take as little as half hour. Feed or forage should also not come in contact with hemlock since this can induce poisoning as well.

Risk to People:

Physical contact is unlikely to cause serious illness but contamination of food crops may cause fatality. Ingestion of 100 grams or more is usually lethal. Symptoms include trembling, muscular weakness, loss of coordination, a weak or slow heartbeat, coma, and eventually death.



Effect of Hemlock Poisoning on Cattle