



Brendon Panke and Mark Renz

**I**nvasive plants can thrive and aggressively spread beyond their natural range, disrupting ecosystems. The *Management of Invasive Plants in Wisconsin* series explains how to identify invasive plants and provides common management options. Management methods recommend specific timings for treatment, as well as expected effectiveness. For more information, go to: [fyi.uwex.edu/weedsci/category/invasive-plants-of-wisconsin](http://fyi.uwex.edu/weedsci/category/invasive-plants-of-wisconsin).

# Poison hemlock

## (*Conium maculatum*)

**T**his biennial primarily germinates in the spring and fall, but seedlings can emerge throughout the growing season. Plants flower in 2nd year. Flowering stems are stout, hairless, hollow, ridged, up to 10' tall, and branch extensively. Lower stem and branches have distinctive reddish-purple markings.

**Caution:** All parts of the plant are toxic especially the roots and seeds. Environmental factors can affect the concentration of poisonous alkaloids. Do not ingest any part of this plant.

**Legal classification in Wisconsin:**  
Prohibited/restricted

**Leaves:** Stem leaves are 8–16" long, triangular in outline, alternate, pinnately compound 3–4 times, shiny, hairless, and parsley-like. The leaves, when crushed, emit a musty odor reminiscent of mice. Rosette leaves are similar to leaves found on the stem.

**Flowers:** Late spring to midsummer. White, arranged in broad umbels 1.5–2.5" across. Umbels are found at the end of stems and are comprised of 12–16 smaller flowers.

**Fruits and seeds:** Fruit composed of two seeds. Seeds are approximately 0.11–0.16" in length, ridged, and flattened on one side.

**Roots:** White taproot

**Similar species:** Queen Anne's lace (*Daucus carota*) has no reddish-purple markings on the stem, hairy leaves, and larger, less rounded umbels. It is also much shorter than hemlock (1–3' tall). Cow parsnip (*Heracleum lanatum*) has palmately compound leaves and lacks reddish-purple coloring on its stem.

**Ecological threat:**

- Invades disturbed areas, damp areas, ditches, roadsides, railroads, fencerows, and timber lots.
- Seeds are readily transported by water.
- Ingestion of this plant can be fatal to humans and animals.



## Non-chemical control

### Removal

**Effectiveness in season: 90–100%**  
**Season after treatment: 50–70%**

Pulling and cutting the root from the stem are effective individual plant control techniques. Pull if soil conditions allow for the removal of the taproot. Alternately, cut the entire taproot with a sharp shovel or spade 1–2" below the surface. If flowers are present, bag material and dispose of it in a landfill to avoid potential for seed spread.

### Mowing

**Effectiveness in season: 90–100%**  
**Season after treatment: 50–70%**

Mowing can be effective if timed just after the emergence of flower heads, but before seeds are formed. Plants may resprout and still flower, but rarely produce viable seed. Monitor populations and repeat mowing if concerned about seed production. Care must be taken not to mow when mature seeds could be present as this will spread the seed. While mowing has been reported as an effective means of suppression, there is no data on how many years of mowing are required to control a population.



### Prescribed burning

**Effectiveness in season: 50–70%**  
**Season after treatment: < 50%**

Spring burns can kill germinating seedlings and can suppress above-ground growth of established plants depending on fire intensity. After the fire, established plants will quickly resprout and reinvade areas; this management method is not recommended unless integrated with other techniques. Fire may benefit other species well-adapted to this management (e.g., prairie grasses), resulting in improved competition with hemlock. A handheld propane torch can be effective for treating seedlings.

### Biological control

**Effectiveness in season: < 50%**  
**Season after treatment: < 50%**

The hemlock moth (*Agonopterix alstroemeriana*) is a species-specific insect that feeds on hemlock foliage, buds, immature seeds, stem tissues, and flowers in the spring and early summer. The moth is prevalent in the northeastern and northwestern United States and is spreading towards the central United States. While moths are commercially available, control is highly variable. To release biological control agents in Wisconsin, contact the Wisconsin Department of Agriculture, Transportation, and Consumer Protection for a required permit.

### Manipulation of the environment

**Effectiveness in season: < 50%**  
**Season after treatment: < 50%**

Establishment and maintenance of vigorous species may effectively compete with established populations as well as prevent the establishment of hemlock at a site.

## Chemical control

### Foliar

Apply directly to individual plants or broadcast across an infested area. Broadcasted foliar applications are typically the most cost-effective treatment in dense infestations. Use lower rates on smaller plants and less dense populations and higher rates on larger plants and denser populations.

#### 2,4-D\*

**Effectiveness in season: 90–100%**  
**Season after treatment: 70–90%**

**Common name:** Many

**Rate: broadcast:** 1.0 lb a.e./A  
**spot:** For a 3.8 lb a.e./gal product: 0.5–0.8% (0.02–0.03 lb a.e./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Use aquatically labeled product if potential exists for solution to contact surface water. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Overspray or drift to desirable plants should be avoided, as even minute quantities of the spray may cause severe injury to plants.

#### chlorsulfuron\*

**Effectiveness in season: 70–90%**  
**Season after treatment: 70–90%**

**Common name:** Telar

**Rate: broadcast:** 1.5–2.5 oz/A  
 (1.1–1.9 oz a.i./A)  
**spot:** 0.04 oz/gal (0.03 oz a.i./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Do not apply directly to water or to areas where surface water is present. Can remain in the soil for months depending on application rate. Overspray or drift to desirable plants should be avoided, as even minute quantities of the spray may cause severe injury to plants.

\*Active ingredient (a.i.)

**clopyralid\***

**Effectiveness in season: 90–100%**  
**Season after treatment: 70–90%**

**Common name:** Transline

**Rate:**

**broadcast:** 8–21 fl oz/A (0.2–0.5 lb a.e./A)  
**spot:** 0.2–0.4% (0.005–0.01 lb a.e./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Do not apply directly to water or to areas where surface water is present. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Remains in soil for up to one year depending on application rate. Overspray or drift to desirable plants should be avoided, as even minute quantities of the spray may cause severe injury to plants. Do not compost treated plants as herbicide can persist through composting process.

**dicamba + 2,4-D\***

**Effectiveness in season: 90–100%**  
**Season after treatment: 70–90%**

**Common name:** Weedmaster

**Rate:**

**broadcast:** 16–28 fl oz/A (dicamba: 0.1–0.2 lb a.e./A + 2,4-D: 0.2–0.3 lb a.e./A)  
**spot:** 0.8% (dicamba: 0.01 lb a.e./gal + 2,4-D: 0.01 lb a.e./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Do not apply directly to water or to areas where surface water is present. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Overspray or drift to desirable plants should be avoided, as even minute quantities of the spray may cause severe injury to plants. Rates > 16oz/A (0.5 lb a.e./A) may cause stunting and discoloration of sensitive grasses, such as smooth brome.

**glyphosate\***

**Effectiveness in season: 90–100%**  
**Season after treatment: 70–90%**

**Common name:** Roundup

**Rate:**

**broadcast:** 1.0–2.25 lb a.e./A  
**spot:** For a 3 lb a.e./gal product: 1–2% (0.03–0.06 lb a.e./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Use product labeled for aquatic use if potential exists for solution to contact surface waters. Applications can result in bare ground as glyphosate is not selective. Overspray or drift to desirable plants should be avoided, as even minute quantities of the spray may cause severe injury to plants.

**imazapic\***

**Effectiveness in season: 70–90%**  
**Season after treatment: 70–90%**

**Common name:** Plateau

**Rate:**

**broadcast:** 8–10 fl oz/A (0.13–0.16 lb a.e./A)  
**spot:** 0.50–1.5% (0.01–0.03 lb a.e./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Do not apply directly to water or to areas where surface water is present. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Imazapic can remain in the soil for months depending on application rate and has the potential to contaminate surface runoff water during this timeframe. Maintenance of a vegetative buffer strip is recommended between the areas imazapic is applied and surface water features. Overspray or drift to desirable plants should be avoided, as even minute quantities of the spray may cause severe injury to plants.

**imazapyr\***

**Effectiveness in season: 70–90%**  
**Season after treatment: 70–90%**

**Common name:** Arsenal

**Rate:**

**broadcast:** 32–48 fl oz/A (0.5–0.75 lb a.e./A)  
**spot:** 0.5–2.0% (0.01–0.04 lb a.e./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Use product labeled for aquatic use if potential exists for solution to contact surface waters. Applications can result in bare ground as imazapyr is not selective and can remain in the soil for several months to more than a year depending on application rate. Overspray or drift to desirable plants should be avoided, as even minute quantities of the spray may cause severe injury to plants.

**metsulfuron\***

**Effectiveness in season: 90–100%**  
**Season after treatment: 70–90%**

**Common name:** Escort

**Rate:**

**broadcast:** 1.0–2.0 oz/A (0.6–1.2 oz a.i./A)  
**spot:** 0.04 oz/gal (0.02 oz a.i./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Do not apply directly to water or to areas where surface water is present. Remains in the soil for months depending on application rate. Overspray or drift to desirable plants should be avoided as even minute quantities of the spray may cause severe injury to plants.

\*Active ingredient (a.i.)

**picloram + 2,4-D\***  
**Effectiveness in season: 9–100%**  
**Season after treatment: 70–90%**

Some products containing picloram are restricted-use in Wisconsin.

**Common name:** Grazon

**Rate:**

**broadcast:** 32–48 fl oz/A  
 (picloram: 0.14–0.2 lb a.e./A + 2,4-D: 0.5–0.75 lb a.e./A)

**spot:** Equivalent to broadcast rates.

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Do not apply directly to water or to areas where surface water is present. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Remains in the soil for more than one year depending on application rate and has the potential to contaminate surface runoff water during this timeframe. Maintenance of a vegetative buffer strip is recommended between the areas this product is applied and surface water features. Overspray or drift to desirable plants should be avoided as even minute quantities of the spray may cause severe injury to plants. Do not compost treated plants as herbicide can persist through composting process.

**sulfometuron\***  
**Effectiveness in season: 90–100%**  
**Season after treatment: 70–90%**

**Common name:** Oust

**Rate:**

**broadcast:** 3.0–5.0 oz/A (2.25–3.75 oz a.i./A)

**spot:** Equivalent to broadcast rates.

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Do not apply directly to water or to areas where surface water is present. Applications can result in bare ground as sulfometuron is not selective and can remain in the soil for months depending on application rate and site conditions. Overspray or drift to desirable plants should be avoided as even minute quantities of the spray may cause severe injury to plants.



**triclopyr\***  
**Effectiveness in season: 90–100%**  
**Season after treatment: 70–90%**

**Common name:** Garlon

**Rate:**

**broadcast:** 32 fl oz/A (1.0 lb a.e./A)

**spot:** 1–2% (0.04–0.08 lb a.e./gal)

**Timing:** Apply to rosettes in fall or spring, bolting, or flowering plants.

**Caution:** Use product labeled for aquatic use if potential exists for solution to contact surface waters. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Overspray or drift to desirable plants should be avoided as even minute quantities of the spray may cause severe injury to plants.

Herbicide information is based on label rates and reports by researchers and land managers. Products known to provide effective control or in common use are included. Those that do not provide sufficient control or lack information for effectiveness on target species have been omitted.

References to pesticide products in this publication are for your convenience and not an endorsement of one product over a similar product. You are responsible for using pesticides in accordance with the label directions. Read the label before any application.

\*Active ingredient (a.i.)

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**Authors:** Mark Renz is an assistant professor and Extension weed scientist in agronomy, College of Agriculture and Life Sciences, University of Wisconsin-Madison and University of Wisconsin-Extension. Brendon Panke is an associate research specialist in agronomy, College of Agriculture and Life Sciences, University of Wisconsin-Madison. Cooperative Extension publications are subject to peer review.

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