

INVASIVE PLANTS  
IN WISCONSIN

Brendon Panke, Ryan deRegnier,  
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).

# Hill mustard

## (*Bunias orientalis*)

**H**ill mustard acts as either a simple perennial or a biennial, depending on climate. Establishes as a rosette in the first year. In subsequent years, plants grow 1–4' tall. Stems are somewhat hairy; covered in small, warty bumps; and branched in the upper half of the plant where flowers are found.

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

**Leaves:** Seedlings have oval cotyledons up to 1" long. The first true leaves are round to ovate and entire. Subsequent leaves are arranged in a rosette, are slightly toothed, become very long, and have prominent veins. In mature plants, basal leaves can be  $\geq 12$ " long, but decrease in size as they ascend the stem. Leaves are lanceolate and can be highly lobed with a distinctive point at the tip of the leaf. The leaf shape can be highly variable. Leaves also have warty bumps, are slightly hairy, and emit a strong odor of cabbage when crushed.

**Flowers:** Late spring. Four-petaled flowers are bright yellow and fragrant. Flowers appear in the top third of the canopy in a loose inflorescence.

**Fruits and seeds:** Fruits are teardrop-shaped pods that are irregularly bumpy, 0.25–0.40" in length, and bear up to four seeds. Fruit are borne on stalks 0.5" long.

**Roots:** Perennial taproot up to 1" in diameter in older plants.

**Similar species:** Yellow rocket (*Barbarea vulgaris arcuata*) can be distinguished by hairless leaves, leaves without pointed lobes, stems without warty bumps, shorter stature, earlier flowering time, fruits that are narrow pods with many very small seeds, and no cabbage-like odors.

**Ecological threat:**

- Invades prairies, fields, pastures, and roadsides.
- Has the capacity to invade undisturbed grasslands.



## Non-chemical control

### Removal

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

Pull if soil conditions allow for the removal of the entire taproot. This will be difficult with well-established, mature plants. If flowers are present, bag material and dispose of it in a landfill to avoid potential for seed spread.

### Cultivation

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

Cultivation can suppress adult plants, but stimulates seed germination. Cultivation can dislodge the roots from the soil. No information is available as to how effective cultivation alone is at managing this plant, but observations indicate that additional management methods will be required to effectively control this species. Establishment of desired vegetation after cultivation is essential since hill mustard maintains a large seed bank from which plants can establish if bare ground exists.

### Mowing

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

Mow as low as possible before seed production. Plants may resprout and still flower. Monitor populations and repeat mowing if concerned about seed production. Care must be taken not to mow when mature seeds could be present since this will spread the seed. The exact timing and number of times mowing should occur per season for optimal control are not known.

### 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 hill mustard. A handheld propane torch can be effective for treating seedlings.

## Manipulation of the environment

Hill mustard spreads primarily through disturbed habitats and does not compete well with established plants. Reducing the amount and duration of disturbance can reduce the chance that hill mustard will be introduced to 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 in the fall since plants are more susceptible at this time. Spring applications require higher rates, but if applied after seedlings emerge, they will control both seedlings and adult plants. 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: 70–90%**  
**Season after treatment: 70–90%**

**Common name:** Many

#### Rate:

**broadcast:** 1–2 lb a.e./A

**spot:** For a 3.8 lb a.e./gal product: 1% (0.04 lb a.e./gal)

**Timing:** Apply when flowering through the fall as long as leaves are green.

**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 since even minute quantities of the spray may cause severe injury to plants.



\*Active ingredient (a.i.)



**glyphosate\***

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

**Common name:** Roundup

**Rate:**

**broadcast:** 1– 1.5 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 when flowering through the fall as long as leaves are green.

**Caution:** Use product labeled for aquatic use if potential exists for solution to contact surface waters. Applications can result in bare ground since glyphosate is not selective. Overspray or drift to desirable plants should be avoided since 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:** 10–16 fl oz/A

(0.15–0.25 lb a.e./A)

**spot:** 0.25–1% (0.005–0.02 lb a.e./gal)

**Timing:** Apply when flowering through the fall as long as leaves are green.

**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 since even minute quantities of the spray may cause severe injury to plants.

**metsulfuron\***

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

**Common name:** Escort

**Rate:**

**broadcast:** 0.5–1.0 oz/A

(0.3–0.6 oz a.i./A)

**spot:** 0.04 oz/gal (0.02 oz a.i./gal)

**Timing:** Apply when flowering through the fall as long as leaves are green.

**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 since even minute quantities of the spray may cause severe injury to plants.

**triclopyr\***

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

**Common name:** Garlon

**Rate:**

**broadcast:** 16–32 fl oz/A

(0.5–1.0 lb a.e./A)

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

**Timing:** Apply when flowering through the fall as long as leaves are green.

**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 since even minute quantities of the spray may cause severe injury to plants.



\*Active ingredient (a.i.)



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 instead of a similar product. You are responsible for using pesticides in accordance with the label directions. *Read the label before any application.*

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**Authors:** Brendon Panke is an associate research specialist, Ryan deRegnier is a research assistant, and Mark Renz is an assistant professor of Agronomy, College of Agricultural and Life Sciences, University of Wisconsin-Madison, and Cooperative Extension, University of Wisconsin-Extension. Cooperative Extension publications are subject to peer review.

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