

INVASIVE PLANTS
IN WISCONSIN

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Invasive 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.

Field bindweed

(*Convolvulus arvensis*)

Field bindweed is a perennial vine that can exceed 6' in length and form dense mats.

Legal classification in Wisconsin: Not regulated

Leaves: Leaves have square cotyledons, are dark green, have prominent veins, and are indented at the tip. True leaves are triangular, alternate, and both with and without hairs. Leaf bases have outward pointed lobes. Typically 1–2" long.

Flowers: July through August. Tubular, white to pink, and 0.75" in diameter. Found alone or in groups of 2–4 at the end of long stalks arising where the leaf attaches to the stem (leaf axil). Bracts are located on stalks 1" below flower.

Fruits and seeds: Oval to round capsule. Two seeds per capsule that are dark brownish gray and about 0.125" long.

Roots: Perennial root system. Initial taproot sends out lateral roots, which produce additional vertical roots. Buds along horizontal roots give rise to new plants.

Similar species: Hedge bindweed (*Calystegia sepium*) is distinguished by square leaf bases and large bracts beneath the flowers. Wild buckwheat (*Polygonum convolvulus*) is distinguished by inward-pointing leaf bases and a sheath at the base of each node (ocrea).

Ecological threat:

- Invades nurseries, agronomic crops, and fencerows. Not a threat in natural areas unless they are disturbed.

Non-chemical control Removal

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

Pulling and digging are effective techniques for individual plant control if all perennial roots are removed from the soil. This is difficult unless plants are establishing or soil is amenable to pulling. These techniques should be implemented before plants flower.

Cultivation

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

Intensive cultivation controls newly emerged seedlings and may reduce established populations, especially if integrated with other control methods. Timely cultivations every 1–2 weeks, beginning when the plant is in the bud stage, but before any flowers open, will eradicate plants if repeated for several years. Cultivation, however can spread roots into previously uninfested areas. When pairing cultivation with herbicide treatments, delay cultivation for at least seven days after herbicide application.

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 bindweed. A handheld propane torch can be effective for treating seedlings.

Manipulation of the environment

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

Competition by grasses and other robust species that maximize shading can suppress field bindweed. Litter will also reduce field bindweed germination and shoot growth.



Chemical control

Pre-emergence

Apply herbicide directly to soil surface. These products will only damage plants that emerge after the herbicide has been applied. They will not damage established plants that are tolerant to the herbicide. Use lower rates on areas where less dense populations are expected and higher rates on areas where denser populations are expected.

oryzalin*

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

Common name: Surflan AS

Rate:

broadcast: 64–192 fl oz/A (2–6 lb a.e./A)
spot: Equivalent to broadcast rates.

Timing: Apply prior to emergence of plants. While spring applications will maximize control, fall or winter applications may also suppress plants, depending upon environmental conditions.

Remarks: 64 fl oz/A will provide 2–4 months of control. 192 fl oz/A will provide 8–12 months of control. Wait two months between applications at the 64 fl oz rate; wait eight months between applications at the 192 fl oz rate.

Caution: Do not apply directly to water or to areas where surface water is present. Applications can result in bare ground since oryzalin can lose selectivity if applied at higher rates and can remain in the soil for several months, depending on application rates. Overspray or drift to desirable plants should be avoided since even minute quantities of the spray may cause severe injury to plants.

prodiamine*

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

Common name: Barricade 4FL

Rate:

broadcast: 21 fl oz/A (0.65 lb a.i./A)
spot: 0.5 fl oz/1000 ft² (0.02 lb a.i./1000 ft²)

Timing: Apply prior to emergence of plants.

Caution: Do not apply directly to water or to areas where surface water is present. Overspray or drift to desirable plants should be avoided since even minute quantities of the spray may cause severe injury to plants. Do not apply more than 48 fl oz/A per year.

trifluralin*

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

Common name: Trifluralin HF

Rate:

broadcast: 16–32 fl oz/A
 (0.5–1.0 lb a.i./A)
spot: Equivalent to broadcast rates.

Timing: Apply prior to emergence of plants.

Remarks: Use higher rates in finer soils. This herbicide should be incorporated as it is applied and must be incorporated within 24 hours of application. While spring applications will maximize control, fall or winter applications may also suppress plants the following spring, depending upon environmental conditions.

Caution: Do not apply directly to water or to areas where surface water is present. 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.)

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. Absorption of herbicide can be limited with this species, resulting in reduced effectiveness. Including a recommended surfactant can alleviate any potential reduction in effectiveness.

2,4-D*

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

Common name: Many

Rate:

broadcast: 0.95–1.9 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 from bud to full bloom when stems are at least 12" long.

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.

aminocyclopyrachlor + chlorsulfuron*

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

Common name: Perspective

Rate:

broadcast: 4.75–8.0 oz/A

(aminocyclopyrachlor: 1.9–3.15 oz a.i./A + chlorsulfuron: 0.75–1.25 oz a.i./A)

spot: 0.2–0.3 oz/gal
(aminocyclopyrachlor: 0.08–0.12 oz a.i./A + chlorsulfuron: 0.03–0.05 oz a.i./A)

Timing: Apply when target species is actively growing and fully leafed out.

Caution: Do not apply directly to water or to areas where surface water is present. Avoid using Perspective in areas where soils are permeable, particularly where the water table is shallow, since groundwater contamination may result. Perspective remains in the soil for months, depending on application rate, and has the potential to contaminate surface runoff water, especially on poorly draining soils or areas with shallow groundwater. Maintenance of a vegetative buffer strip is recommended between the areas Perspective 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. Do not compost treated plants since herbicide can persist through composting process.

aminocyclopyrachlor + metsulfuron*

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

Common name: Streamline

Rate:

broadcast: 4.75–9.5 oz/A

(aminocyclopyrachlor: 1.9–3.75 oz a.i./A + metsulfuron: 0.6–1.2 oz a.i./A)

spot: 0.2–0.4 oz/gal
(aminocyclopyrachlor: 0.08–0.16 oz a.i./gal + metsulfuron: 0.03–0.05 oz a.i./gal)

Timing: Apply when target species is actively growing and fully leafed out.

Caution: Do not apply directly to water or to areas where surface water is present. Avoid using Streamline in areas where soils are permeable, particularly where the water table is shallow since groundwater contamination may result. Streamline remains in the soil for months, depending on application rate, and has the potential to contaminate surface runoff water, especially on poorly draining soils or areas with shallow groundwater. Maintenance of a vegetative buffer strip is recommended between the areas Streamline 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. Do not compost treated plants since herbicide can persist through composting process.

dicamba*

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

Common name: Banvel

Rate:

broadcast: 16–32 fl oz/A
(0.5–1.0 lb a.e./A)

spot: Equivalent to broadcast rates.

Timing: Apply from bud to full bloom when stems are at least 12" long.

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 since 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.

dicamba + diflufenzopyr*

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

Common name: Overdrive

Rate: broadcast: 6–8 oz/A (dicamba: 0.02–0.03 lb a.e./A + diflufenzopyr 0.01–0.012 oz a.e./A)

spot: Equivalent to broadcast rates.

Timing: Apply from bud to full bloom when stems are at least 12" long.

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 since 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.

fluroxypyr*

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

Common name: Vista XRT

Rate:

broadcast: 8–16 fl oz/A
 (0.18–0.35 lb a.e./A)

spot: 0.14–0.30 % (0.004–0.008 lb a.e./gal)

Timing: Apply from bud to full bloom when stems are at least 12" long. Late bloom is the most effective application time.

Caution: Do not apply directly to water or to areas where surface water is present. Overspray or drift to desirable plants should be avoided since even minute quantities of the spray may cause severe injury to plants.

glyphosate*

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

Common name: Roundup

Rate:

broadcast: 1.75–2.0 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 from bud to full bloom when stems are at least 12" long.

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.

imazapyr*

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

Common name: Arsenal

Rate:

broadcast: 8–16 fl oz/A
 (0.13–0.25 lb a.e./A)

spot: 0.5–1% (0.01–0.02 lb a.e./gal)

Timing: Apply from bud to full bloom when stems are at least 12" long.

Caution: Use product labeled for aquatic use if potential exists for solution to contact surface waters. Applications can result in bare ground since 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 since even minute quantities of the spray may cause severe injury to plants.

picloram*

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

Common name: Tordon K

Some products containing picloram are restricted-use in Wisconsin.

Rate:

broadcast: 32–64 fl oz/A (0.5–1 lb a.e./A)

spot: Equivalent to broadcast rates.

Timing: Apply from bud to full bloom when stems are at least 12" long.

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 picloram 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. Do not compost treated plants since herbicide can persist through composting process.

picloram + 2,4-D*

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

Common name: Grazon

Some products containing picloram are restricted-use in Wisconsin.

Rate:

broadcast: 48–64 fl oz/A (picloram: 0.2–0.25 lb a.e./A + 2,4-D: 0.75–1.0 lb a.e./A)

spot: 0.5–1% (picloram: 0.003–0.005 lb a.e./gal + 2,4-D: 0.01–0.02 lb a.e./gal)

Timing: Apply from bud to full bloom when stems are at least 12" long.

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 since even minute quantities of the spray may cause severe injury to plants. Do not compost treated plants since herbicide can persist through composting process.

quinclorac***Effectiveness in season: 70–90%****Season after treatment: 70–90%****Common name:** Paramount**Rate:****broadcast:** 5–8 oz/A

(0.25–0.38 lb a.e./A)

spot: 0.5 oz/A (0.005 lb a.e./A)**Timing:** Apply from bud to full bloom when stems are at least 12" long.**Remarks:** Do not mow 2–3 days before or after application. Consecutive fall applications (prior to the first frost) for three or more years will reduce bindweed cover; fewer than three years of treatment will only suppress populations the year following application.**Caution:** Do not apply directly to water or to areas where surface water is present. Remains in soil for up to one year, depending on application rate, and has the potential to contaminate surface runoff water during this timeframe. 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. Do not compost treated plants since herbicide can persist through composting process.**triclopyr + 2,4-D*****Effectiveness in season: 70–90%****Season after treatment: 50–70%****Common name:** Crossbow**Rate:****broadcast:** 128 fl oz/A (triclopyr: 1.0 lb

a.e./A + 2,4-D: 2.0 lb a.e./A)

spot: 1–1.5% (triclopyr: 0.01–0.02 lb a.e./gal + 2,4-D: 0.02–0.03 lb a.e./gal)**Timing:** Apply when target species is actively growing and fully leafed out.**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 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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