

INVASIVE PLANTS  
IN WISCONSIN

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**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).

# Quackgrass

## (*Elymus repens*)

**Q**uackgrass is a cool season perennial grass.

**Legal classification in Wisconsin:** Not regulated

**Leaves:** Leaf wraps around the stem at the junction between the leaf blade and sheath to form distinct claw-like appendages (auricles). Leaves and stems can be hairy, but it is highly variable.

**Flowers:** June through September. Flower is a long spike with many spikelets arranged in two rows.

**Fruits and seeds:** Yellow-brown seeds (0.20–0.33" long) are elongated toward the tip, taper to a blunt base, and are topped with a ring of hairs.

**Roots:** Fibrous with rhizomes. Rhizomes develop after 3–4 months of seedling growth.

**Similar species:** Unlike quackgrass, tall fescue (*Festuca arundinacea*) and smooth brome (*Bromus inermis*) both lack distinct auricles.

**Ecological threat:**

- Invades gardens, yards, crop fields, roadsides, ditches, and disturbed, moist areas throughout growing season, especially during cool weather.
- Thrives in well-drained soils, with slightly acidic pH.

## Non-chemical control

### Removal

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

Pulling is effective on individual or small patches if all rhizomes are removed from soil. This is difficult unless plants are just establishing or soil is amenable to pulling.

### Cultivation

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

Cultivation to 8" will reduce quackgrass cover, but will not eliminate populations. Cultivation is most effective during hot, dry weather or late in the fall shortly before freezing weather. Pairing cultivation with herbicide applications can improve efficacy. This method can also spread rhizomes and cause infestations to spread.

### Mowing

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

Mowing as low as possible can prevent seed production, and if repeated for many years, it can suppress populations. Repeat mowing two times a season to suppress. Not effective in eliminating populations.

## Prescribed burning

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

Spring fires are effective in suppressing populations, but burn must be conducted in the early spring 1–2 weeks after plants have begun to grow. If conducted too early, fires can increase populations. Adequate fuel load is needed to carry fire. A handheld propane torch can be effective for treating seedlings.

## Grazing

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

Cattle and horses readily feed on this plant, but populations are only suppressed and rarely eradicated, even with intensive grazing. Intensively grazing to 2" will reduce the dominance of quackgrass in an area.

## Manipulation of the environment

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

Maintaining current vegetation on site will prevent establishment. Mulching or cover-cropping can suppress quackgrass. Eliminate any shoots that emerge through cover or beyond the area being treated.



## 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.

#### clethodim\*

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

**Common name:** Envoy

#### Rate:

**broadcast:** 17–32 fl oz/A  
 (0.13–0.25 lb a.i./A)  
**spot:** 0.33–0.66% (0.003–0.006 lb a.i./A)

**Timing:** Apply when grass is 4–12" tall.

Apply only when the grass is actively growing.

**Remarks:** Two applications per year may be necessary for older or denser populations.

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

#### fluazifop\*

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

**Common name:** Fusilade

#### Rate:

**broadcast:** 16–24 fl oz/A  
 (0.25–0.38 lb a.i./A)  
**spot:** 0.5% (0.01 lb a.i./gal)

**Timing:** Apply when grass is 6–10" tall.

Apply only when the grass is actively growing.

**Remarks:** Two applications per year may be necessary for older or denser populations.

**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. Fluazifop can remain in the soil for 1–2 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 fluazifop is applied and surface water features. Overspray or drift to desirable grasses should be avoided since even minute quantities of the spray may cause severe injury to grasses.

#### fluazifop + fenoxaprop\*

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

**Common name:** Fusion

#### Rate:

**broadcast:** 8–12 fl oz/A  
 (fluazifop: 0.13–0.2 lb a.i./A +  
 fenoxaprop: 0.04–0.05 lb a.i./A)  
**spot:** 0.6% (fluazifop: 0.012 lb a.i./gal +  
 fenoxaprop: 0.003 lb a.i./gal)

**Timing:** Apply when grass is 6–10" tall.

Apply only when the grass is actively growing.

**Remarks:** Two applications per year may be necessary for older or denser populations.

**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. Fluazifop can remain in the soil for 1–2 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 fluazifop is applied and surface water features. Overspray or drift to desirable grasses should be avoided since even minute quantities of the spray may cause severe injury to grasses.

**glyphosate\***

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

**Common name:** Roundup

**Rate:**

**broadcast:** 0.75–1.5 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 target plants are actively growing and 6–8" tall.

**Remarks:** More than one application will be needed as entire rhizome will not be killed with a single application. Lower rates are effective if integrated with tillage. Wait three days after application before tilling.

**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.

**quizalofop\***

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

**Common name:** Assure II

**Rate:**

**broadcast:** 10–12 fl oz/A  
 (0.07–0.08 lb a.i./A)

**spot:** 0.5 fl oz/gal (0.003 lb a.i./gal)

**Timing:** Apply when target plants are actively growing and 6–10" tall. If quackgrass regrows, apply 6–7 fl oz/A (0.04–0.05 lb a.i./A) when it is actively growing and 4–8" tall.

**Remarks:** Use nonionic surfactant for spot treatment.

**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, and has the potential to contaminate surface runoff water during this timeframe. Maintenance of a vegetative buffer strip is recommended between the areas quizalofop is applied and surface water features. Overspray or drift to desirable grasses should be avoided since even minute quantities of the spray may cause severe injury to grasses.

**sethoxydim\***

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

**Common name:** Segment

**Rate:**

**broadcast:** 36–60 fl oz/A  
 (0.3–0.5 lb a.e./A)

**spot:** 2.25% (0.02 lb a.e./gal)

**Timing:** Apply any time during the summer before seeds are produced. Two applications during the growing season are recommended.

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



\*Active ingredient (a.i.)





seedhead

auricles



rhizomes



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.*

This series of fact sheets was created in cooperation with University of Wisconsin-Extension Team Horticulture.

This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under Award No. 2009-45060-06000.

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