

KNOTWEEDS



BACKGROUND

Native to Asia, knotweeds were first planted in North America in the late 1800s as ornamental garden plants. They escaped cultivation and have spread to most states. In their native range, knotweeds are early colonizers after volcanoes with stems pushing through volcanic rock. Similarly, stems can grow through pavement

and building foundations necessitating costly removal and repairs. Japanese knotweed is a regulated weed in Alabama, California, Connecticut, Iowa, Idaho, Illinois, Massachusetts, Minnesota, Montana, Nebraska, New Hampshire, Ohio, Oregon, Vermont, Washington, West Virginia, Wisconsin and Wyoming.

DESCRIPTION

Herbaceous perennials (non-woody plants that return each year)

- Shrub like forms that can exceed 10 ft tall
- Multiple, hollow stems form a clump that resembles bamboo
- Stems die back to the ground after hard frost and new stems emerge in the spring
- New shoots sprout from spreading rhizomes (underground stems) that can grow to 65 feet long. Leaves are alternate, simple and broadly oval with pointed tips.
- Flowers are produced in white clusters in the late summer.
- Knotweeds are fast growing and can form dense infestations.

REPRODUCTION

Knotweeds can grow from pieces of stems and rhizomes so pieces must be managed carefully to prevent new infestations. Knotweeds can also spread by seed.

TREATMENT OPTIONS

Most Effective

Least Effective

CHEMICAL TREATMENT OPTIONS

Apply a foliar spray in the late summer to early fall at least 2 days before frost. This timing often coincides with flowering. Choose **ONE** of the following common herbicides used for knotweed control. Anecdotal results indicate better results with the addition of a surfactant but check the herbicide label about surfactant use.

Active Ingredient	Broadcast Spray Rate Per Acre	Spot Spray Rate Per Gallon	Efficacy One Year Post Treatment
Imazapyr	48-64 fl oz	0.5-1%	Good to Excellent
Aminopyralid	7-14* fl oz	equivalent to broadcast	Good
Glyphosate	3-8 lb	4-8%	Good to Moderate
2,4-D	2-2.5 lb	4%	Moderate
Triclopyr	64-128 fl oz	1.5-2.25%	Moderate

*Do not exceed the labeled rate of 7 oz per acre broadcast on a field scale.

Cut and treat stems repeatedly while plants are actively growing. Choose **ONE** of the following common herbicides used for knotweed control.

Active Ingredient	Broadcast Spray Rate Per Acre	Mixing Percentage	Efficacy One Year Post Treatment
Triclopyr	Not Applicable	20-25% in oil	Moderate
Triclopyr + 2,4-D		4% in oil	Moderate
Glyphosate		20-25%	Moderate

For herbicide applications, the treatment area should be considered. Imazapyr and aminopyralid are not registered for urban areas. Use aquatic formulations if application will be near water, and note that there is no aquatic formulation of aminopyralid.

OTHER TREATMENT OPTIONS

Stem injection with glyphosate herbicide is generally not recommended because only stems directly injected are impacted and many stems are too small or breakable for injection. However, there may be situations where this method is useful to prevent non-target damage.

Spring and summer mowing when plants are 2-3 ft tall can reduce overall plant height and vigor before a late summer or early fall herbicide application. Mowing stimulates stem production and will not eliminate infestations.

Grazing with cattle, sheep or goats can suppress infestations if repeated multiple times throughout the growing season. Supplemental feed may be necessary. Grazing alone will not eliminate knotweeds.

Smothering plants with a tarp may temporarily suppress populations. Monitor the area throughout the year as knotweed rhizomes can spread outside of or grow through the covered area.

Digging up plants is an option for newly established plants but will not eliminate infestations. Rhizomes (underground stems) must be removed multiple times per year for effective control. Wear protective clothing including gloves to prevent possible skin irritation.

Recommended herbicide application rates are subject to change so please refer to the product label. Also refer to the label for recommended adjuvants. Reference to commercial products or trade names does not imply endorsement. Herbicide treatment options are based upon the Midwest Invasive Plant Network Control Database mipncontroldatabase.wisc.edu. Biological control is in development for North America and has been used experimentally in the United Kingdom.

CONTROL

Ideal timing for treatment options

Spring	Summer	Fall
	Foliar spray	
Cut stem treatments		
Mow*		
Graze		
Dig up or smother plants		

*Mowing should be followed with a late summer foliar application.

For site specific recommendations, please contact your local Extension personnel. **For herbicide treatments, review and follow product labels and avoid contact with non-target plants as these products may cause severe injury to them.** Resprouting and seedling emergence may continue for years, so additional treatments will likely be required. **Treatments that involve cutting, mowing or digging require careful management of the cut stems and other plant parts to prevent new infestations. Incineration is a good disposal option for these plant parts.**



Foliar application of imazapyr to knotweed



Knotweeds were planted as ornamentals



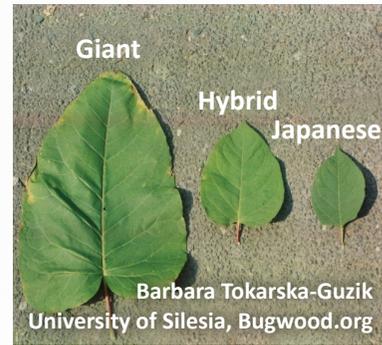
Knotweed overgrowing cars



Knotweed infestation



Foliar application of imazapyr to knotweed



Comparison of leaf size and shape between giant, hybrid (Bohemian) and Japanese knotweeds



Knotweed leaf arrangement is alternate.



Japanese knotweed leaf



Knotweed stems look similar to bamboo



Comparison of Japanese (left) and hybrid (right) knotweed flowers



Japanese knotweed flowers



Bee on hybrid knotweed can move pollen to female flowers on other knotweed plants



Knotweeds seeds

MORE INFORMATION CAN BE FOUND AT THE FOLLOWING WEBSITES:

U.S. FOREST SERVICE
www.fs.fed.us/database/feis/plants/forb/polspp/all.html

MINNESOTA DEPARTMENT OF AGRICULTURE
mda.state.mn.us/plants/pestmanagement/weedcontrol/noxiouslist

UNIVERSITY OF WISCONSIN EXTENSION
learningstore.uwex.edu/Assets/pdfs/A3924-11.pdf

 DEPARTMENT OF AGRICULTURE
DEPARTMENT OF NATURAL RESOURCES
DEPARTMENT OF TRANSPORTATION

 UNIVERSITY OF MINNESOTA
EXTENSION

 Play Clean Go
STOP INVASIVE SPECIES IN YOUR TRACKS.
PlayCleanGo.org

 ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

 MIPN.org
Midwest Invasive Plant Network

 Minnesota Association of County Agricultural Inspectors
Serving MNI Since 1945

 WISCONSIN DEPT. OF NATURAL RESOURCES

In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651-201-6000. TTY users can call the Minnesota Relay Service at 711 or 1-800-627-3529. The MDA is an equal opportunity employer and provider.

KNOTWEEDS

 DEPARTMENT OF AGRICULTURE



Japanese, giant and their hybrid called Bohemian knotweed (*Polygonum cuspidatum*, *P. sachalinense* and *Polygonum x bohemicum* respectively) can overtake shorelines, grasslands, forest edges, roadsides and residential yards. These infestations reduce wildlife habitat, species diversity and may damage property. Knotweed shoots can grow through pavement and building foundations resulting in costly damage. It is important to find and eliminate knotweed infestations.