



Garlic Mustard

Alliaria petiolata (Aka garlic root, garlicwort, hedge garlic, Jack-by-the-hedge, poorman's-mustard)

Provincial Designation:
Prohibited Noxious



King County Department of Natural Resources and Parks (www.your.kingcounty.gov)



Ohio State University (www.oardc.ohio-state.edu)

Overview:

Garlic mustard is a biennial native to Europe & Asia. It is believed it was introduced to North America as a medicinal & culinary herb – the young leaves have a garlicky smell when crushed. It forms a rosette the first year and then bolts early season of the second year and goes to seed by early summer. Garlic mustard reproduces by seed only, and being a member of the Mustard family is a prolific seed producer. It forms a long, thin, white taproot which has a crook just below ground level. Garlic mustard can self-fertilize or be fertilized by pollinators.

In the northeastern US it has become a dominant understory species in woodland/floodplain habitats. It is unpalatable to herbivores and seeds are viable for an average of 5 years. It produces a toxin which inhibits mycorrhizal fungi which interferes with the growth of other plants and trees.³

Rosettes resemble some other plants but only garlic mustard leaves have garlic odour.

Habitat:

Garlic mustard is a shade tolerant plant, but is becoming more common in full sun.² It prefers the less acidic, rich, moist soils of riparian woodlands.

Identification:

Stems: Usually 1-2 stems per plant growing 30 to 90 cm tall, with little or no branching in upper stems.¹ Stems are usually smooth but sometimes sparsely hairy.²

Leaves: Rosette leaves are dark green and round to heart-shaped with scalloped edges. Stem leaves are alternate, coarsely toothed, heart-shaped and 5-10 cm wide, becoming smaller upwards on the stem. Both stem and rosette leaves have long, hairy petioles.²

Flowers: Are borne in clusters at the tops of stems, and have 4 white petals approximately 0.5 cm long. Fruits are siliques (long pods) 2.5 to 5 cm long and contain an average of 16 seeds.² Seeds brown or black, oblong 2-4.5 mm X .7-2 mm.¹

Prevention:

Disturbed soil is the most susceptible to rapid colonization of garlic mustard. Maintain healthy vegetative cover in habitats suitable to invasion. Do not plant garlic mustard in the garden.

Control:

Grazing: Unpalatable to grazers and disturbance from trampling would increase an infestation. Invasive plants should never be considered as forage.

Cultivation: Not likely to survive intense tillage, but has become a problem in reduced tillage situations.² A thick mulch of wood chips have proven effective.³

Mechanical: Hand pulling is very effective but most of root must be removed to prevent re-sprouting. Mowing can prevent seed production, but plants must be cut close to ground level to prevent the plant from re-flowering from leaf axils. Mowing must be repeated through the growing season to be an effective control method.³

Chemical: Currently no selective herbicides are registered for use on garlic mus-

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tard. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Always read and follow label directions. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: A search for potential agents is ongoing. Over 70 species of insect herbivores and seven fungi are associated with this plant in Europe. Many are not sufficiently host specific to use for control; five monophagous weevils and one oligophagous flea beetle are being further investigated in an effort to develop a concerted suite of attack agents for the seeds, stems, and roots (Blossey et al., 2001)⁴.



Flowering Stem

Ohio State University (www.oardc.ohio-state.edu)



Seed Pods

King County Department of Natural Resources and Parks (www.your.kingcounty.gov)



Rosette Leaves

Ohio State University (www.oardc.ohio-state.edu)

REFERENCES

- 1 Flora of China. *Alliaria petiolata* www.eFloras.org
- 2 Ohio Perennial & Biennial Weed Guide, Ohio State University. <http://www.oardc.ohio-state.edu/weedguide/singlerecord.asp?id=330>
- 3 King County Department of Natural resources and Parks, Noxious Weed Control Program, Best Management Practices – Garlic Mustard. <http://www.your.kingcounty.gov/dnrp/library/water-and-land/weeds/BMPs/Garlic-Mustard-Control.pdf>
- 4 <http://www.cabi.org/isc/?compid=5&dsid=3941&loadmodule=datasheet&page=481&site=144>