

# GARLIC MUSTARD - ALIEN INVASIVE - BE ON THE LOOKOUT

Garlic Mustard is a **herbaceous biennial plant** growing from a deeply growing, thin, white taproot that is scented like a horse-radish. Plants grow from 30-100 cm (rarely to 130 cm) tall. The **leaves** are stalked, triangular to heart-shaped, with a coarsely toothed margin. In biennial specimens, first-year plants appear as a rosette of green leaves close to the ground; these rosettes remain green through the winter and develop into mature flowering plants the following spring. The **flowers** are produced in spring and summer in button-like clusters. Each small flower has four white petals, arranged in a cross shape. The **fruit** is an erect, slender, four-sided pod, green maturing pale grey-brown, containing two rows of small shiny black **seeds** which are released when the pod splits open. Some plants can flower and complete their life-cycle in the first year. A single plant can produce hundreds of seeds, which scatter as much as several meters from the parent plant. Depending upon conditions, garlic mustard flowers either self-fertilize or are cross-pollinated by a variety of insects. Self-fertilized seeds are genetically identical to the parent plant, enhancing its ability to colonize an area where that genotype is suited to thrive.



The **leaves, flowers and fruit are edible as food for humans**, and are best when young. They have a mild flavor of both garlic and mustard, and are used in **salads** and **pesto**. They were once used as medicine. In Europe as many as 69 species of **insects** and 7 species of **fungi** utilize Garlic Mustard as a food plant, including the **larvae** of some **Lepidoptera** species such as the **Garden Carpet** moth.



The **insects and fungi that feed on it in its native habitat are not present in North America**, increasing its seed productivity and allowing it to out-compete native plants. It is a possible threat to the West Virginia White Butterfly (*Pieris virginiensis*) and Mustard White Butterfly (*Pieris oleracea*); adult butterflies of both species lay their eggs on native Dentaria or Toothwort plants, but they often confuse garlic mustard plants with Dentaria and lay their eggs on garlic mustard, because they have similar flowers. The eggs and young butterflies cannot live on the garlic mustard, because it has chemicals that are toxic to the larvae and eggs.

Once garlic mustard has established an invasion front (several years of flowering plants), the goal is to prevent further seed set until the seed bank is exhausted; a period of up to five years. Depending on the site characteristics and infestation level, pulling, cutting, applying herbicide or repeated fire will be required.

Research published in 2007 shows that, in Northeast Forests, garlic mustard rosettes increased the rate of native leaf litter decomposition, increasing nutrient availability and possibly creating conditions favorable to garlic mustard's own spread. Information from Wikipedia

A study published in 2006 concluded that **Garlic Mustard produces allelochemicals that harm mycorrhizal fungi that many North American plants, including native forest trees, require for optimum growth. Additionally, because White-tailed Deer rarely feed on Garlic Mustard, large deer populations may help to increase its population densities by consuming competing native plants. Trampling by browsing deer encourages additional seed growth by disturbing the soil. A complication to the eradication of Garlic Mustard from an area is the longevity of viable seeds in the ground. Seeds contained in the soil can germinate up to five years after being produced.**

