



August's Weed of the Month: Japanese Knotweed

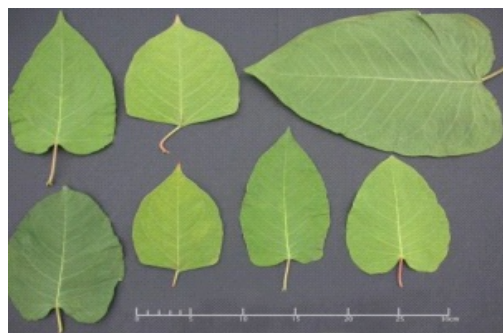
Prepared by John Condzella and Leslie A. Weston, Landscape Weed Management Team



Photo by J. K. Randall

Japanese knotweed (*Polygonum cuspidatum*) is a native of Asia and was first introduced to England in the early 19th century as an ornamental. It was later introduced into the United States for erosion control and also on Long Island as an estate-grown ornamental due to its attractive foliage and cream colored inflorescences. It is a very aggressive weed that often crowds out the surrounding vegetation and is difficult to manage due to its extremely dynamic rhizomes that form a deep, dense mat. Japanese knotweed is sometimes referred to as Japanese bamboo since the stems can resemble a bamboo shoot, however the leaves are very distinct and heart shaped, and are certainly not grass-like. Other common names of Japanese knotweed include fleeceflower, Mexican bamboo, and huzhang.

Description: Japanese knotweed is a rhizomatous perennial, with several reddish-brown, freely branched stems. It is fast-growing, aggressive, and often appears in dense clumps in which little or no competing vegetation survives, and reaches heights between 4 to 8 feet tall. The stem is hollow and jointed, hence the comparison to bamboo. The leaves are alternate, broadly egg-shaped, and 3 to 6 inches in length. The plant is dioecious, so male and female plants both produce cream colored flowers that vary slightly in appearance. Flowers appear in late summer and are found in erect clusters 4 to 5 inches long arising from the leaf axils.



Variation in size and shape of leaves of Japanese knotweed. Photo by Cameron H. Douglass.

Reproduction: Japanese knotweed spreads primarily via rhizomes, from which young reddish shoots emerge in the early spring. The plant can produce viable seeds, particularly if it hybridizes with other closely related species; however the majority of reproduction will occur from the mechanical distribution of rhizome pieces which resprout.

Habitat/distribution: Japanese knotweed, introduced from Japan as an ornamental has become a weed of the roadside as well as diverse landscapes. It can most commonly be found in moist, unmanaged areas including riverbanks and riparian sites, sodded storm drains and ditches, roadsides and unkempt gardens. Japanese knotweed is common throughout the U.S. and tends to flourish on moist, well-drained, nutrient-rich soil, especially on shaded banks.

Recently, it has appeared more frequently along sunny, dry roadside locations, suggesting that the plant is adapting to diverse environments.

Control methods: The best suggested control for Japanese knotweed is the prevention of establishment, as it is very difficult to eradicate once established. The plant should be destroyed as soon as it appears by cutting, chopping, herbicide treatment and subsequent disposal of any cut vegetation. The growth of the rhizomes can be slowed by cutting back the stalks as much as three times during the growing season, reducing rhizome reserves for successful plant generation. After cutting back the foliage, an application of a glyphosate-based herbicide has been discovered to be particularly effective. Glyphosate (Round Up) application should be performed in late summer through early fall when the translocation of herbicides to the plants root system is maximal. In order to be sure that the rhizomes have been thoroughly eradicated, a few years of treatments may be necessary. One technique that has proven effective for managing small stands of Japanese knotweed is the application of concentrated glyphosate directly to the plant root system by injection into the hollow stem at approximately the 3rd stem node or below. This syringe injection technique is labeled in New York State with Aquamaster herbicide, and has proven effective with small managed stands. Other herbicides have proven ineffective for control due to limited translocation into the rhizomes. Not surprisingly, the rhizomes are difficult to remove by hand digging and can penetrate soils up to a depth of 10 feet or more after a year of establishment. Interestingly, the rhizomes have been shown to be a potent source of the antioxidant and cancer suppressive compound resveratrol. Perhaps new uses for this plant can be deduced, based on the need for easily extractable resveratrol sources.



Photographer unknown

Additional references:

Weeds of the Northeast. Authored by Uva, R., J. Neal and J. DiTomaso. Cornell University Press.

Weston, L. A., J. N. Barney and A. DiTommaso. 2005. A review of the biology and ecology of three invasive perennials in New York State including Japanese knotweed, mugwort and pale or black swallowwort species. Plant and Soil. 277:53-69.