

Mini data sheet on *Polygonum perfoliatum*

Polygonum perfoliatum was added to the EPPO A2 List in 2008. A full datasheet will be prepared, in the meantime you can view here the data which was previously available from the EPPO Alert List (added to the EPPO Alert List in 2007 - deleted in 2008).

Why

Polygonum perfoliatum (Polygonaceae) is an herbaceous terrestrial vine originating from Asia. It has been involuntarily introduced as a contaminant of ornamental plants in North America, where it is spreading and considered invasive. Its common name is "mile-a-minute weed" in English. Within the EPPO region, the species occurs in Siberia where it is native, and is also recorded as naturalized in Turkey. Because its distribution is still very limited, this plant can be considered a new emerging invader in Europe.

Geographical distribution

EPPO Region: Russia (Siberia, native), Turkey (alien, status unknown).

Asia (native):

Temperate: China (Anhui, Fujian, possibly eastern Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Neimenggu (Inner Mongolia, eastern part), southern Shaanxi, Shandong, Sichuan, Xizhang (Tibet, unconfirmed), Yunnan, Zhejiang), Japan, Republic of Korea, Russian Federation (Far East), Taiwan.

Tropical: Bangladesh, Bhutan, India, Indonesia, Nepal, Thailand, Vietnam, Malaysia, Myanmar (Burma), Philippines.

Oceania: Papua New Guinea.

North America (alien): USA (Connecticut, Delaware, District of Columbia, Maryland, New Jersey, New York, North-Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Virginia, West Virginia, Wisconsin).

Note: the plant has been eradicated from New Zealand. There is also a single record for Canada (British Columbia), but no additional records since 1954.

In Turkey, the plant is present on the northern face of the Kaçkar range of mountains in North Eastern Turkey, in Rize, district Ardeşen, near Firtina Deresi (Black Sea region).

In the USA, the plant has been recorded in Mississippi, but herbaria curatorial staff in Mississippi stated that publications indicating its occurrence in this State are erroneous.

Morphology

Polygonum perfoliatum is an herbaceous terrestrial vine. It is an annual in temperate climates, but can behave as a perennial in tropical climates such as in Florida (US). *P. perfoliatum* has a stem that can grow up to 6 m in length and as much as 15 cm per day. Roots are few in number, fibrous, weak and do not penetrate the soil deeply. A characteristic cup-shaped ocrea (or bract) surrounds the stem at the base of the petiole. The leaves are pale green, thin and glabrous. They are 2-8 cm wide and shaped like an equal-sided triangle and alternate along the delicate stems (this leaf shape gives it one of its common names, "devil's tail").

Two to four flowers emerge from the ocrea. These inconspicuous white or light red flowers becoming blue at fruiting measuring 3-5 mm. Green, berry-like fruits, 5 mm in diameter, are produced in June (in New England, USA) and become a pale, metallic blue color as they ripen. Each fruit contains a shiny black achene, 2 mm in diameter. *P. perfoliatum* produces fruit continuously until the first frost, when the plant begins to die back. Dead plants in winter are reddish-brown to tan in colour, often forming brittle mats.

Biology and Ecology

P. perfoliatum is a very tender annual, withering with a slight frost, and reproducing successfully until the first frost. The plant only reproduces sexually, vegetative propagation has never been reported. A plant can bear about 50-100 seeds. Seed dormancy and germination of the plant is essential for predicting its potential range of distribution. It is tolerant to shade and dryness. *P. perfoliatum* generally grows in areas with an abundance of leaf litter on the soil surface, but has also been found in extremely wet environments with poor soil structure.

Habitats

In its native range, *P. perfoliatum* occurs in moist areas at elevations of 80-2300 m. It can be found along rivers and roadsides, along valley streams and in thickets; mountain thickets, forest margins and stream banks, ditches, stream and river banks, wasteland as well as roadsides.

In its alien range, *P. perfoliatum* invades a wide range of habitats, mainly open and disturbed ones: edges of pastures, edges of woods, early successional forests, abandoned fields, roadsides, railroad, nurseries, wood-piles, clearings and ditches. It thrives on stands of clearcut forests. It is also found in freshwater habitats such as stream banks and moist thickets.

Impact

Because it can smother tree seedlings, this weed has a negative effect on forest regeneration and commercial forest areas (Christmas tree farms). It is thought to have the potential to be a problem to nurseries, orchards and to the ornamental shrub industry, which are not regularly tilled as a cultivation practice. *P. perfoliatum* is also a threat to ecosystems as it has the ability to outgrow other species.

Control

This species can form a long-term seed bank which must be suppressed. Cultural methods can be utilized to create conditions which are not favourable to the establishment of *P. perfoliatum*. Maintaining broad vegetative buffers along streams and forest edges will help to shade out and prevent establishment of this weed. Repeated mowing or trimming of plants will prevent the plants from flowering and thus reduce or eliminate fruit and seed production. Studies have shown that pre-emergence applications of herbicide are most effective in controlling *P. perfoliatum*. A biological control program is currently undertaken by the University of Delaware with the weevil *Rhinoncomimus latipes* (Coleoptera: Curculionidae) and a number of potential biological control agents for *P. perfoliatum* have been identified in China.

Source:

Global Invasive Species database

<http://www.issg.org/database/species/ecology.asp?si=582&fr=1&sts=sss>

Invasive Alien plants of Virginia Website

<http://www.dcr.state.va.us/dnh/fspope.pdf>

Invasive Plant Atlas of New England (IPANE) (2001)

<http://www.lib.uconn.edu/webapps/ipane/browsing.cfm?descriptionid=13>

University of Delaware - Biological control of Mile-a-minute

<http://ag.udel.edu/enwc/research/biocontrol/mileaminute.htm>

United States Department of Agriculture - Natural Resources Conservation Service - Plants Database.

<http://plants.usda.gov/java/profile?symbol=POPE10>