

## *Polygonum thunbergii*

**Family:** Polygonaceae

**Species:** *Polygonum thunbergii* Sieb. & Zucc.

**Common Names:** knoterid, thunbergs; mizo-soba (Japan)

### **Synonyms:**

*Persicaria thunbergii* (Sieb. & Zucc.) H. Gross

*Tracaulon thunbergii* (Sieb. & Zucc.) Greene

*Truellum thunbergii* (Sieb. & Zucc.) Sojak

*Persicaria hastato-triloba* (Meissn.) Okuyama

*Persicaria sinica* Migo

*Polygonum hastato-triloba* Meissn.

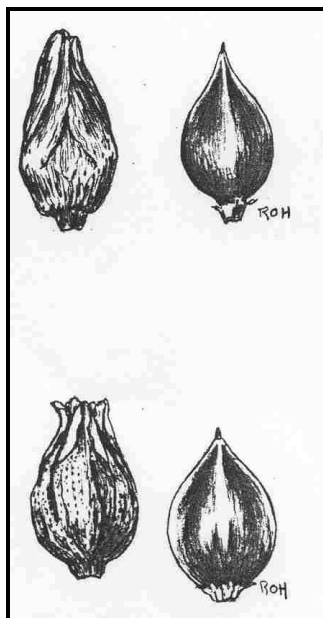
*Polygonum sinicum* (Migo) Fang & Zheng

*Polygonum stellato-tomentosum* W.W. Smith & Ramas

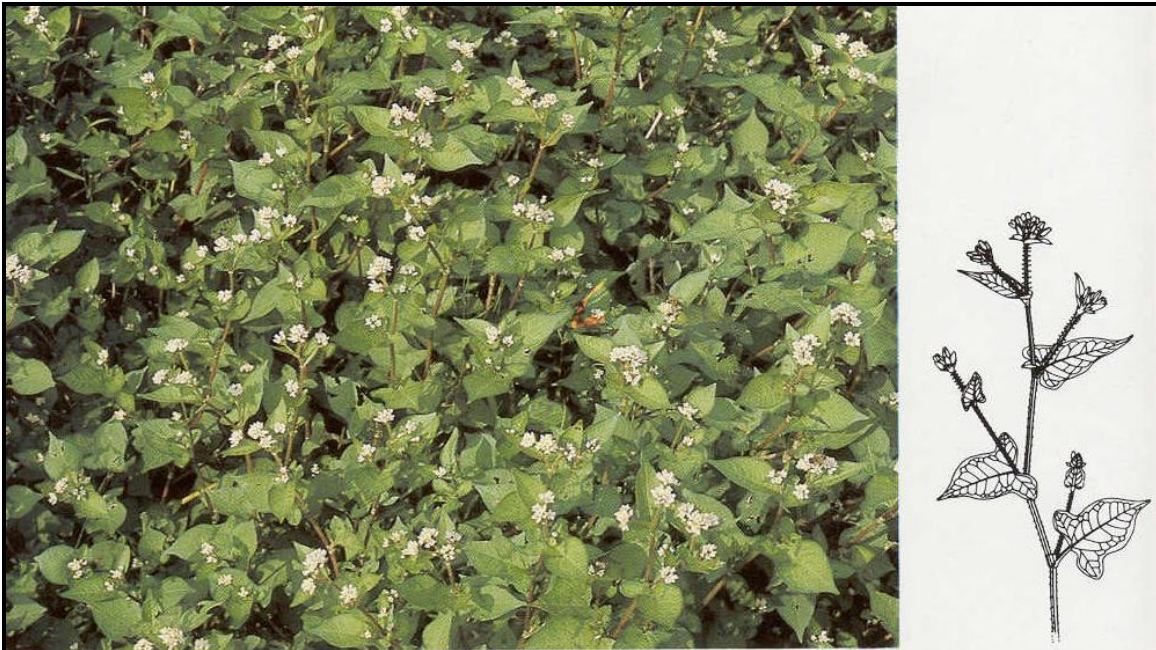
*Polygonum stoloniferum* F. Schum.

**Bayer Code:** POLTH

**Description:** An annual plant of aquatic situations, up to 1 m high, glabrous or slightly pubescent. The stems are much branched and have backward-pointing prickles, enabling the plant to scramble and climb over other vegetation. Leaves are broadly ovate to hastate with prickles on the veins. Petioles about 1 cm long, subtended from hairy, cylindrical ochreae (stem sheaths). The inflorescence is a dense round head of 10 to 20 pale pink flowers. Fruit (achenes) triangular in section, 3–5 mm long, yellow-brown or greenish.



**Figure 1.** *Polygonum thunbergii* fruit from Reed (1977)



① *P. thunbergii* (adult plant)



Figure 2. *Polygonum thunbergii* from Morita (1997)

**Distribution:** *Polygonum thunbergii* is native in Asia (China, India, Japan, Korea, and Taiwan) (Holm et al., 1979; Reed, 1977).



### Native and Naturalized Distribution of *Polygonum thunbergii* Sieb. & Zucc.



Figure 3. By Glenn Fowler, USDA APHIS PPQ CPHST, 2002 (Fowler, 2002)

**Biology and Ecology:** *Polygonum thunbergii* occurs as a weed of rice and in levees and ditches surrounding rice fields, flowering August to October. Growth and competition to crops is increased by the addition of phosphorus (Chung and Jeon, 1992). Pollination is by various bees, wasps, and flies (Momose and Inoue, 1993). Germination requires a chilling period, and secondary dormancy can be induced by high temperatures (Araki and Washitani, 2000). In China, it may be predated by larvae of the moth *Timandra griseata*, a potential biocontrol agent for *Polygonum perfoliatum* (Janqing et al., 2000). It is also a preferred host plant for the beetle *Galerucella vittaticollis* in Japan (Adati and Matsuda, 2000).

**Possible Pathways to the United States:** As *Polygonum thunbergii* is a weed of rice, there is some risk of accidental introduction as a contaminant of crop seed. But there is a somewhat greater risk resulting from its availability as an ornamental from web sites, including one in Malaysia.

**Adverse Impact:** Holm et al. (1979) list *Polygonum thunbergii* as a “principal” weed of rice in Japan. This a very unpleasant species with thorny scrambling shoots, posing a threat to rice crops and wetland vegetation in warmer regions of the United States, such as Florida.

#### Literature Cited:

Adati, T., and K. Matsuda. 2000. The effect of leaf surface wax on feeding of the strawberry leaf beetle, *Galerucella vittaticollis*, with reference to host plant preference. *Tohoku Journal of Agricultural Research* 50(3/4):57-61.

- Araki, S., and I. Washitani. 2000. Seed dormancy/germination traits of seven *Persicaria* species and their implication in soil seed-bank strategy. *Ecological Research* 15(1):33-46.
- Chung, C., and B. T. Jeon. 1992. The effect of phosphorus on competition in annual and perennial plants. *Journal of the Korean Society of Grassland Science* 12(1):1-5.
- Fowler, G. 2002. Distribution Map. USDA, APHIS, PPQ, Center for Plant Health Science and Technology, Raleigh, NC.
- Holm, L. G., J. V. Pancho, J. P. Herberger, and D. L. Plucknett. 1979. *A Geographical Atlas of World Weeds*. Wiley, New York. 391 pp.
- Jianqing, D., F. Weidong, Y. Wu, and R. C. Reardon. 2000. Insects associated with mile-a-minute weed (*Polygonum perfoliatum* L.) in China: a three-year-survey report. Pages 225-231 in N. R. Spencer, (ed.). *Proceedings of the X International Symposium on Biological Control of Weeds*; 4-14 July 1999; Bozeman, MT. Montana State University.
- Momose, K., and T. Inoue. 1993. Pollination and factors limiting fruit set of chasmogamous flowers of an amphicarpic annual, *Polygonum thunbergii* (Polygonaceae). *Researches on Population Ecology* 35(1):79-93.
- Morita, H. 1997. *Handbook of Arable Weeds in Japan for Correct Identification*. Kumiai Chemical, Tokyo, Japan. 128 pp.
- Reed, C. F. 1977. *Economically Important Foreign Weeds: Potential Problems in the United States*. Agricultural Research Service, Animal and Plant Health Inspection Service, U.S. Dept. of Agriculture, Washington, DC. 746 pp.