



Sagittaria pygmaea

Nomenclature: Family: Alismataceae Species: *Sagittaria pygmaea* Miq

Common Names: pygmy arrowhead and dwarf arrowhead; zweig-pfeilkraut (German); urikawa (Japan)

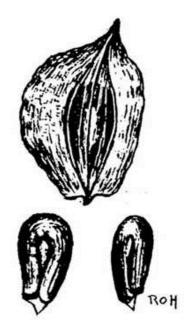
Bayer Code: SAGPY

Description: Annual or perennial aquatic plant with short rhizomes terminating in tubers. Leaves all basal, linear or linear–lanceolate, 10-15 cm long, 5-8 mm wide, gradually narrowed to a sheath at the base. Flowering stems 10-25 cm high, few-flowered, the flowers in racemes. Pistillate flower solitary, sessile on the lowest node; the staminate flowers few, on pedicels 10-30 mm long. Petals white rounded to obovate, 8-10 mm long. Achenes 4 x 3.5 mm to narrowly obovate, compressed, and wide-winged on both margins, beak horizontal. Seed itself 2 x 1 mm, striate from the base, rimmed (Häfliger and Scholz, 1982).

Numata and Yoshikawa (1975) describe it as a plant of warm temperate to subtropical regions.



Sagittaria pygmaea Häfliger and Scholz, 1982



Sagittaria pygmaea Reed, 1977 **Distribution:** Listed as "serious" in Japan; "common (weed) in Taiwan;" and "present (as a weed but not ranked)" in China (Holm *et al.*, 1979)

Japan, Korea, Taiwan, China (Reed, 1977)

China (Wang et al., 1990)

China, Japan, Korea, Taiwan (USDA, 2008)



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Biology and Ecology: *Sagittaria pygmaea* is recorded by Holm *et al.* (1979) as a principal weed of Japan. In China, a combination of *Juncellus serotinus* and *S. pygmaea* reduced rice yield by 55 percent (Wu JingLun and Zhou HengChang, 2000). In Korea, *S. pygmaea* is among the most serious weeds of mechanically transplanted rice (Chae JeCheon and Guh JaOck, 1999) and in butachlor-treated rice (Park KwangHo, 1999). In Japan, Harada and Sumiyoshi (1990) include *S. pygmaea* among the most troublesome perennial weeds of rice. Chiang and Leu (1987) describe *S. pygmaea* as one of the most serious weeds of rice in Taiwan. It is regarded as a noxious weed and prohibited entry in Australia (Australia, 2000). *Sagittaria pygmaea* is a serious weed of rice in several Asian countries, is not readily controlled by standard herbicide treatments, and poses a significant threat to rice cultivation in the United States. *Sagittaria pygmaea* also has the potential to invade wetlands.

References:

- Australian Weeds Committee. Noxious weed list for Australian States and Territories. Last accessed 2000, from http://www.weeds.org.au/noxious.htm.
- Chae, J.C. and J.O. Guh. 1999. Occurrence and control of weeds in direct-seeded rice paddy in Korea. Journal of Weed Science and Technology 44:391–404.
- Chiang, Y. J., and L. S. Leu. 1987. Effect of application timing and residual period of Londax on main paddy weeds in Taiwan. Pages 223-231 *in* Proceedings of the 11th Asian-Pacific Weed Science Society Conference.
- Haefliger, E. 1982. Monocot Weeds 3. Monocot Weeds Excluding Grasses. CIBA-GEIGY Ltd., Basle, Switzerland. 132 pp
- Harada, J., and T. Sumiyoshi. 1990. Some problems in the control of perennial weeds of paddy fields in the Tohoku region. Report of the Tohoku Branch, The Crop Science Society of Japan 4–7.
- Holm, L. G., J. V. Pancho, J. P. Herberger, and D. L. Plunknett. 1979. A Geographical Atlas of World Weeds. John Wiley and Sons, New York. 391 pp.
- Kwang Ho, P. 1999. GIS application in weed management system. 3. Weed population changes of rice paddy field as affected by herbicides. Korean Journal of Weed Science 19:98–104.
- Morita, H. 1997. Handbook of Arable Weeds of Japan. Kumiai Chemical Industry Co., Ltd. Tokyo, Japan.
- Numata, M., and N. Yoshikawa (eds.). 1975. Weed flora of Japan illustrated by colour. Zenkoku Noson Kyporku Kyokai. Tokyo, Japan. 414 pp.
- Reed, C. F. 1977. Economically Important Foreign Weeds: Potential Problems in the United States. Agriculture Handbook No. 498. USDA.
- USDA. Germplasm Information Network (GRIN). ARS National Genetic Resources Program. Last accessed February 1, 2008, from http://www.arsgrin.gov/npgs/searchgrin.html.
- Wang, Z. R. 1990. Farmland Weeds in China. A Collection of Colored Illustrative Plates. Agricultural Publishing House, Beijing, China. 506 pp.
- Wiersema, J. H., and B. Leon. 1999. World Economic Plants: A Standard Reference. CRC Press, Boca Raton, FL. 749 pp.
- Wu Jing, L. 2000. Rice yield loss caused by weed combination *Juncellus serotinus* + *Sagittaria pygmaea*. Jiangsu Journal of Agricultural Sciences 16:88–91.