

## Japanese stiltgrass

*Microstegium vimineum* (Trin.) A. Camus  
Grass Family (Poaceae)



*Japanese stiltgrass along a trail*

### **DESCRIPTION**

Japanese stiltgrass, formerly *Eulalia vimineum*, is an annual grass that forms dense mats. Japanese stiltgrass is similar to arthraxon grass (*Arthraxon hispidus*), another non-native, invasive annual, warm-season grass species; however, *Arthraxon* has broader leaf blades with a distinctly heart-shaped (cordate) base.

**Stems** - The weak, somewhat reclining stems of Japanese stiltgrass grow up to 40 inches long and may root at the stem nodes where they contact the soil surface.

**Leaves** - The lime green leaf blades are 4–5 inches long and ½ inch wide; they taper at both ends and have a silvery streak along the midrib.

**Flowers** - The inflorescence is inconspicuous, it may be at the end of the stem, or arise from leaf axils. Flowering occurs late in the season, often not until late September or early October.

### **DISTRIBUTION AND HABITAT**

Native to Asia from India to Japan, Japanese stiltgrass was first discovered in the United States in 1919 in Tennessee. Since then, it has spread to all states east of the Mississippi from Connecticut south. It was used as a packing material for porcelain from China, and this was the likely means of its introduction to our area. Japanese stiltgrass prefers moist soils that are shaded from full sun. It is found in marshes, ditches, moist woods, floodplains, woodland borders, damp meadows, shady lawns, and along streamsides, trails, and roadsides. Wet soils that have periods of standing water are not suitable for Japanese stiltgrass, although its seeds can survive and germinate after extended periods of inundation.

In Pennsylvania, Japanese stiltgrass was first collected in Berks County in 1938. It has spread quickly in the southeastern region and continues to expand its range every year.

### **EFFECTS OF INVASION**

Japanese stilt grass can spread rapidly following a disturbance such as flooding or soil moving. Within three to five years it can form dense monotypic stands which crowd out native herbaceous vegetation. It is also well adapted to low light levels and is able to grow and produce seed in as little as 5 percent of full sunlight. Research carried out in New Jersey suggests that infestations of Japanese stiltgrass and Japanese barberry may alter soil pH and litter depth.

## **REPRODUCTION AND METHOD OF DISPERSAL**

Although Japanese stiltgrass does not produce prolific amounts of seed, a single plant typically giving rise to 100–1000 seeds, the seeds remain viable in the soil for 3–5 years. Seeds are dispersed by humans, animals, and water.

## **CONTROLS**

**Mechanical** - The best strategy for controlling Japanese stiltgrass is removal of the plant by hand or mechanical means late in the growing season but before seed production. Pulled plants must be bagged and removed to avoid post-pulling seed maturation. This practice must be carried out for seven consecutive years due to the long seed bank viability. Mowing or burning early in the season does not control the plant; new seeds germinate following such measures and can still produce seed by the end of the season.

**Chemical** - Glyphosate is effective against Japanese stiltgrass, but its use in a natural area may also affect desirable species. Glyphosate is recommended because it is biodegradable; however, it is a nonselective, systemic herbicide that affects all green plants. To be safe and effective, herbicide use requires careful knowledge of the chemicals, appropriate concentrations, and the effective method and timing of their application.

**Biological** - No biological controls are available at this time.

## **REFERENCES**

- Barden, Lawrence S. 1987. Invasion of *Microstegium vimineum* (Poaceae), an exotic, annual, shade-tolerant, C4 grass, into a North Carolina floodplain. *American Midland Naturalist* 118(1): 40-45.
- Hunt, David M. and Robert E. Zaremba. 1992. The northeastward spread of *Microstegium vimineum* into New York and adjacent states. *Rhodora* 94(878): 167-170.
- Kourtev, P. S., J. G. Ehrenfeld, and W. Z. Huang. 1998. Effects of exotic plant species on soil properties in hardwood forests of New Jersey. *Water, Air and Soil Pollution* 105: 493-501.
- Redman, Donnell. 1995. Distribution and habitat types for Nepal *Microstegium* [*Microstegium vimineum* (Trin.) Camus] in Maryland and the District of Columbia. *Castanea* 60(3): 270-275.
- Rhoads, Ann Fowler and Timothy A. Block. 2007. *The Plants of Pennsylvania: An Illustrated Manual*, 2<sup>nd</sup> edition. University of Pennsylvania Press, Philadelphia, PA.
- Rhoads, Ann Fowler and William McKinley Klein. 1993. *The Vascular Flora of Pennsylvania: Annotated Checklist and Atlas*. American Philosophical Society, Philadelphia, PA.
- Winter, K., M. R. Schmitt, and G. E. Edwards. 1982. *Microstegium vimineum*, a shade adapted C4 grass. *Plant Science Letters* 24: 311-318.

**Internet resources** – <http://www.paflora.org>, <http://www.invasivespecies.gov>

### ***Invasive species fact sheet prepared by:***

Ann F. Rhoads and Timothy A. Block  
Morris Arboretum of the University of Pennsylvania  
100 Northwestern Ave., Philadelphia, PA 19118  
updated November 2011