

Forest Pests

Invasive Plants and Insects of Maryland

Invasive plants and insects can be problematic for forest landowners. From vines that take over disturbed areas, forest edges, and tree canopies to insects that defoliate and girdle trees, these pests not only decimate the natural ecosystem, they are difficult to control and can be expensive to eradicate. This informational sheet discusses the grass commonly known as Japanese stiltgrass.

Japanese Stiltgrass (*Microstegium vimineum* (Trin.) A. Camus)



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DESCRIPTION

Japanese stiltgrass is an annual grass from the Grass (*Poaceae*) family. It is also known as Nepalese browntop. It is a colonizing species that spreads across recently disturbed or

open areas. It has a thin stem that is bamboo-like and has long asymmetrical leaves. The leaves are pale green, lance-shaped, and have a shiny midrib. Flowers form in late summer and produce seeds. The average Japanese stiltgrass stem can produce 100 to 1,000 seeds, which are capable of germinating for at least 5 years in the soil. In the fall, the grass dies and the leaves fall off but the dense mass of stems remain.

ORIGIN & SPREAD

Japanese stiltgrass is native to southeastern Asia. It was introduced to the U.S. in Tennessee around 1919. It is said that it was in the packing material for porcelain. It spreads quickly and has been identified in the natural areas of at least 16 eastern states, ranging from New York to Florida. The spread of the plant can be attributed to several causes. Seeds can be carried by birds, animals, or humans. The seeds could be mixed in with hay, or in dirt that gets caught in the tread of a tire. Accidental spreading is difficult to avoid.



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Japanese stiltgrass is very persistent once introduced. The grass sprawls along open areas and moves further into the forest every year. Three factors contribute to the spread of local infestations. 1) As mentioned above, Japanese stiltgrass is a prolific seeder that builds up extensive seed reserves in the soil. 2) Japanese stiltgrass is physiologically adaptive. The grass can do well in areas where nutrient levels are rich and light levels are low, or areas where nutrient levels are poor and light levels are high. 3) Japanese stiltgrass has an advantage over native grasses because white-tailed deer do not browse on Japanese stiltgrass. By out-competing the native grasses and natural regeneration in the forest, Japanese stiltgrass alters the native ecosystem and changes the food source and habitat for wildlife.

CONTROL OPTIONS

Hand Control

Controlling Japanese stiltgrass can be difficult. It is critical to make sure that spreading the seeds from an infested area to a non-infested area does not happen. Manual and chemical methods of addressing infestations are often used. Hand pulling and grubbing of the grass and roots is effective at removing the grass and most of the roots. However, this process will disturb the soil and can cause the seeds in the soil to germinate. Repeatedly pulling the grass every spring to early summer for a few years could exhaust seed reserves and control the infestation without the use of herbicides.

Herbicide Control

Japanese stiltgrass is most commonly controlled with herbicide. Using herbicides allows the landowner to treat the infestation without disturbing the soil. As with all invasive plants, control methods are currently being researched and documented. Table 1 shows some of suggested uses of herbicides as found in Miller, Manning, and Enloe (2010), Swearingen et al

(2010), and Swearingen and Adams (2008). The most commonly used herbicides for controlling Japanese stiltgrass include glyphosate (e.g. Roundup® Pro) and Fluazifop-P-Butyl (e.g. Fusilade® DX). Since Japanese stiltgrass is an annual grass, a foliar spray during



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the growing season is the most common herbicide application.

Foliar Spray Method

Generally, an herbicide solution is sprayed on the foliage just enough to wet it, not drip. The herbicide is absorbed through the leaves and is carried to the root system.

SUMMARY

When dealing with Japanese stiltgrass, it is important to remember that these applications will not completely control the infestation on the first attempt. Several attempts may be needed over several years. Seeds remain viable in the soil for up to 5 years and can easily be transported to other areas on the property or to other non-infested areas.

Table 1. Herbicide Suggestions for Controlling Japanese Stiltgrass Infestations.

Application Method	Active Ingredient	Brand Name	Percent Solution	Time of Year
Foliar Spray	Glyphosate	Roundup® Pro	0.5-1% in water and surfactant	July to August
Foliar Spray (around water)	Glyphosate	Rodeo®	0.5-1% in water and surfactant	July to August
Foliar Spray	Fluazifop-P-Butyl	Fusilade® DX	See Label	June to August
Foliar Spray	Fluazifop-P-Butyl	Grass-B-Gon®	Undiluted	March to October
Foliar Spray	Sethoxydim	Grass-Out®	Undiluted	March to October

Foliar Spray	Imazapic	Plateau [®] (Gov't use only)	4 oz per acre	March to August
Foliar Spray	Imazapic	Journey [®]	4 oz per acre	March to August
Foliar Spray	Pendimethalin	Pendulum [®] Aquacap	2.4 -4.8 quarts per acre	February to March

Use pesticides wisely. The information in this sheet is intended to illustrate methods that are currently being practiced and does not endorse or promote any of the herbicide products listed. Please be sure to read herbicide labels, even if you have experience with the herbicide, as labels are updated frequently. All information in this sheet is based on the information of the herbicide labels at the time of printing. Please contact the Maryland Department of Agriculture (MDA) if you have any questions about pesticides. The MDA website (www.mda.md.state.us/plants-pests) contains a searchable pesticide database where you can search for pesticides, applicators, dealers, and businesses.



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REFERENCES

Miller, James H.; Manning, Steven T.; Enloe, Stephen F. 2010. A management guide for invasive plants in southern forests. Gen. Tech. Rep. SRS-131. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 120 p.

Swearingen, J., B. Slattery, K. Reshetiloff, and S. Zwicker. 2010. Plant Invaders of Mid-Atlantic Natural Areas, 4th ed. National Park Service and U.S. Fish and Wildlife Service. Washington, D.C. 168pp.

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Japanese Stiltgrass. <http://www.nps.gov/plants/alien/fact/mivi1.htm>