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Southeast Exotic Pest Plant Council Invasive Plant Manual

Common Name: Japanese Grass or Eulalia

Scientific Name: *Microstegium vimineum* (Trin.) A. Camus.

Microstegium is an annual colonial grass that spreads rapidly into disturbed lowland areas. Inconspicuous at first, populations may go unnoticed until they have displaced native communities. It is a C-4 shade tolerant plant that can survive and reproduce under a closed forest canopy.

Height: Microstegium is a decumbent and branched annual grass reaching a height of 60-100 cm (24-39 in).

Stem: Culms are 1.5 m (59 in) long with glabrous nodes and internodes.

Leaves: Cauline leaves are alternate, lanceolate, 10 cm (4 in) long, 2-15 mm (0.08-0.6 in) wide, and sparsely pubescent on both surfaces with ciliate margins.

Flowers: Racemes are terminal and may be solitary or in a set of two or three. Spikelets are in pairs, one sessile and one pedicellate, and 4.5-5mm (0.17-0.2 in) long. Blooms August-September.

Seeds: Grain is yellow to red, ellipsoid, 2.8-3.0 mm (0.1-0.12 in) long. Seeds mature over a period of about two weeks in September-October.

Life History

Microstegium is an annual C-4 shade tolerant grass in the Poaceae family. It is colonial in nature, rooting from the nodes, and may form dense monotypic stands. Reproduction is exclusively from seed. Each plant may produce from 100-1,000 seeds that remain viable in the soil for five or more years. Seed dispersal is primarily by animals, flooding, and deposition with fill dirt. This plant spreads rapidly into disturbed areas but can invade undisturbed areas by forming satellite populations brought in by animals or flooding. On fertile mesic sites Japanese grass can replace competing ground vegetation within 3-5 years.

Photo by Ted Bodner

Microstegium is adapted to low light conditions. At 18% of full sunlight dry matter production is not significantly reduced from production in full sunlight. It will grow and produce seed in light levels as low as 5% of full sunlight.

Origin and Distribution

Microstegium is native to Japan, Korea, China, Malaysia, and India. It was first identified in the U.S. at Knoxville, Tennessee in 1919, and in 1933 was collected in western North Carolina. By 1964, the grass had spread to 35 counties in North Carolina. By 1972, it had been identified in 14 eastern states, and in 1978, it was collected in Arkansas. Microstegium can be found throughout the state of Tennessee, primarily in previously disturbed mesic areas.

Photo by Ted Bodner

Similar Species

Microstegium may be confused with cutgrass (*Leersia virginica* Willd.) or knotweed (*Polygonum persicaria* L.). Cutgrass has distinctly longer leaves (1.5 dm [6.0 in]) and shorter spikelets (2.5-3 cm [1.0-1.2 in]) than microstegium. Knotweed is distinguished from microstegium by pale to dark pink calyx and glossy black nutlets.

Photo by James H. Miller

Habitat

Alluvial soil found in flood plains and stream sides is ideal habitat for microstegium. Other typical habitats include damp fields, lawns, mesic woodland edges, roadsides, and ditches. It is commonly found in areas of natural (e.g., flood scouring) or artificial (e.g., mowing, tilling) disturbance, but can invade undisturbed areas. Microstegium has been observed growing at an elevation of 1,200 m (3,840 ft), but typically is not found on upland sites. Deer avoid microstegium, which allows it a competitive advantage in over browsed areas.

Management Recommendations

Mechanical Control

Mow plants as close to the ground as possible using a weedeater or similar grass cutting tool. Treatments should be made when plants are in flower and before seeds are produced. Treatments made earlier may result in plants producing new seed heads in the axils of lower leaves.

Herbicidal Control

Herbicide treatments should be made late in the growing season but, before the plants set seed. Treatments made earlier in the growing season may allow a second cohort of plants to produce seeds.

Glyphosate: Apply a 2% solution of glyphosate and water plus a 0.5% non-ionic surfactant to thoroughly wet all foliage. Do not spray to the point of runoff. Ambient air temperature should be above 65°F to ensure translocation of the herbicide to the roots. Do not apply if rainfall is expected within two hours following application.

Sethoxydin: Apply a 1.5% solution of sethoxydin and water plus a 1% nonphytotoxic vegetable-based oil to all foliage on a spray-to-wet basis. Do not spray to the point of runoff. Ambient air temperature should be above 65°F. Do not apply if rainfall is expected within one hour following application.

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