

Kudzu



Figure 1. Kudzu grows violet flowers from August through September.



Figure 2. Kudzu twines over everything in its path on this rural road in Mississippi.



Figure 3. Kudzu leaves are alternate and trifoliately compound with leaflets 2–8 inches long.

Kudzu [*Pueraria montana* (Lour.) Merr.], often called “the vine that ate the South,” is a perennial, high-climbing vine native to eastern India, China, and Japan. It was introduced into the United States in 1876 at the Centennial Exposition in Philadelphia and was recognized as highly nutritious livestock forage in 1905. By 1946, an estimated 300,000 acres were planted. In addition to its use as forage, kudzu was also widely planted for soil stabilization in the South. It has been used some as an ornamental and for certain edible and medicinal uses.

It is a noxious weed in Florida, Illinois, Kansas, Kentucky, Mississippi, Missouri, Pennsylvania, Texas, and West Virginia. It can be problematic in all southeastern states and in almost all habitats except aquatic. Kudzu can host Asian soybean rust, a potentially serious pathogen in soybeans [*Glycine max* (L.) Merr.]

Description

Vegetative Growth

The genus *Pueraria* belongs to the Pea (Fabaceae or Leguminosae) family. Of the 17 *Pueraria* species native to the tropics and East Asia, only two grow in the United States, *P. phaseoloides* (Roxb.) Benth. and *P. montana*. Of the two species, only *P. montana* var. *lobata* (Willd.) Maesen and *S. Almeida* (kudzu) are problems in the continental United States.

Kudzu is a perennial, semi-woody, trailing to high-climbing, twining vine reaching around 80 feet in length. Trailing stems may root when in contact with the soil and produce large, tuberous roots, which are edible and

sometimes eaten in Asian countries. Twining generally occurs around objects less than 4 inches in diameter. Stems are covered with stiff, rust or golden hairs when young and, as they grow, turn brown, semi-woody, and smooth. Stems can grow up to 10 inches in diameter. Leaves are alternate and trifoliately compound (Figure 3) with leaflets 2–8 inches long. Leaves are covered with hairs and typically lobed (Figure 3). Petioles are 6–12 inches long with swollen bases and deciduous, ovate-lanceolate stipules.

Flowering

Kudzu flowers August through September. Flower panicles are axillary, 2–12 inches long, and open from bottom to top (Figure 1). Flowers are about 1 inch in diameter and occur in twos or threes in a spiral pattern up the main axis. Lower petals are lavender or violet-purple, and upper petals are similar in color or pinkish with a yellow patch near the base. Flowers are fragrant to attract pollinators. Clustered fruit are produced from September to January. They are flattened legumes (or pods) 1.2–3 inches long, 0.3–0.5 inch wide, and covered with stiff golden-brown hairs, very similar in appearance to soybean pods. Seeds are egg-shaped to nearly square and are around 0.1 inch in diameter. Seed viability is variable but generally very poor.

Dispersal

Kudzu spreads primarily by rooting at nodes along stems in contact with soil.

Habitat

Kudzu is problematic in all habitats except aquatic. It forms dense thickets, quickly shading out trees and vegetation. It is relatively drought tolerant and will grow in a wide range of soils. Once established, kudzu is difficult to eradicate.

Distribution

Kudzu is widespread throughout the Midsouth, particularly on slopes. Kudzu normally occurs from Maine to Florida and as far west as Nebraska and Texas. It has also escaped in Washington and Oregon. In 2009, kudzu was found near Ontario, Canada.

Control Methods

Mechanical

Some mechanical methods of kudzu control may be used in areas that can be grazed, mowed, or tilled. Mechanical controls, including hand removal, can be successful for small infestations, but the root must be removed from the soil. Because stems can propagate through fragmentation, be careful to remove all stems.

Chemical

See **Table 1** for recommended herbicides for kudzu control. Metsulfuron can be applied over pines, but it should not be applied on foliage of desirable vegetation. Imazapyr, picloram, aminocyclopyrachlor, aminopyralid, and clopyralid can be absorbed by roots and damage desirable trees and other broadleaf plants. Do not apply within two times the dripline to avoid injury. Clopyralid can be applied over certain hardwoods with safety. See label for list of tolerant species. Nonionic surfactant should be added with foliar applications.

Biological

Livestock readily graze kudzu. Continuous grazing may result in stand loss.

Table 1. Chemical control for kudzu.

Herbicide	Formulation	Method	Rate
Aminocyclopyrachlor (Method)	2 lb ae/gallon	Foliar	10-18 oz/acre
Aminocyclopyrachlor+ Chlorsulfuron (Perspective)	55.2%	Foliar	4.8-11 oz/acre
Aminocyclopyrachlor+ Metsulfuron (Streamline)	52.1%	Foliar	9.5-11.5 oz/acre
Aminocyclopyrachlor+ Metsulfuron+Imazapyr (Viewpoint)	61.7%	Foliar	16-20 oz/acre
Aminopyralid (Milestone)	2 lb ae/gallon	Foliar	7 oz/acre
Aminopyralid+Triclopyr (Milestone VM)	2 lb ae/gallon	Foliar	64-96 oz/acre
Clopyralid (Transline, Lontrel, etc.)	2 lb ae/gallon	Foliar	21 oz/acre
Metsulfuron (Escort, MSM, etc.)	60%	Foliar	4 oz/acre
Glyphosate (Roundup, Accord, etc.)	3 lb ae/gallon	Foliar	2% solution or 128 oz/acre
Imazapyr+ Metsulfuron (Lineage Clearstand)	72.7%	Foliar	25 oz/acre
Picloram (Tordon, Trooper, etc.)	2 lb ae/gallon	Foliar	64 oz/acre

References

- Langeland, K.A. & K. Craddock Burks (Eds). 1998. *Identification and biology of nonnative plants in Florida's natural areas*. Gainesville, FL: University of Florida.
- Miller, J. H. 2003. *Nonnative invasive plants of southern forests: A field guide for identification and control*. Asheville, NC: Southern Research Station Publications.
- USDA. 1948. *Grass: The yearbook of agriculture 1948*. Washington, D.C.: United States Government Printing Office.
- USDA, NRCS. 2018. The PLANTS Database (<http://plants.usda.gov>, 6 August 2007). National Plant Data Team, Greensboro, NC 27401-4901 USA.

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By **John D. Byrd Jr.**, PhD, Extension/Research Professor, Plant and Soil Sciences; **Victor Maddox**, PhD, Senior Research Associate, Plant and Soil Sciences; and **Randy Westbrook**, PhD, former Invasive Species Specialist, U.S. Geological Survey.



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