



Invasive Species Management Plans for Florida

Kudzu

Pueraria montana (Lour.) Fabaceae

INTRODUCTION

An estimated 2 million acres of forest land in the southern United States is covered with kudzu. Kudzu was promoted as a forage crop and an ornamental plant when it was introduced to the U.S. at the Philadelphia Centennial Exposition in 1876. Many southern farmers were encouraged to plant kudzu for erosion control from the mid 1930's to the mid 1950's. In 1953, kudzu was removed from the US Department of Agriculture's list of permissible cover plants due to its recognition as a pest species. Currently in Florida, kudzu has been documented in 14 counties and is listed as a Category I invasive species.

DESCRIPTION

Kudzu is a climbing, semi-woody, perennial vine in the legume family that has the potential to reach up to 100 feet in length. Stems can reach the diameter of ½ to 4 inches, but there are reports of old 'stumps' nearly 12 inches across in Georgia. Alternately arranged leaves are compound with three broad leaflets up to 4 inches across. Leaflets may be entire or deeply 2-3 lobed with hairy margins. Flowers are ½ inch long, purple, highly fragrant and borne in long hanging clusters. Flowering occurs in late summer, followed by the production of brown, hairy, flattened, seed pods that contain three to ten seeds.

The spread of kudzu in the U.S. is thought to be primarily runners, rhizomes, and vines that root at the nodes. Kudzu may also spread via seeds. There are only one to two viable seeds produced per pod, and seeds are contained within a hard seed coat generally requiring scarification for germination. Kudzu has a massive tap root: 7 inches or more in diameter, 6 feet or more in length, weighing as much as 400 pounds! There can be as many as thirty vines growing from a single root crown.

IMPACTS

Kudzu will grow over anything in its path (other plants, buildings, road signs) and eventually kill other plants it covers because it blocks out sunlight. Kudzu will also girdle

stems and tree trunks, break branches, and uproot trees and shrubs through the masses of vegetation produced. Kudzu has been reported to grow roughly one foot per day once established.

MANAGEMENT

Preventative: Total eradication of kudzu is necessary to prevent re-growth. This requires continuous monitoring and thoroughness when treating. To prevent reestablishment, replanting after treatment is critical. Prevent the production of viable seed and destroy the plant's ability to reproduce vegetatively.

Cultural: Young colonies can be eradicated in three to four years if plants are overgrazed or persistently cut back repeatedly during the hottest temperatures of summer. Close grazing for three to four years can totally eliminate kudzu when at least 80% of the vegetative growth is continuously removed by livestock. An old rule of thumb is 8 goats per acre stocking rate for kudzu control.

Mechanical: The massive root system and crowns must be destroyed for long term control of kudzu. Cut vines just above ground level and destroy all cut material. Close mowing every month for two growing seasons or repeated cultivation may be effective. Pre-burning, cutting, hand digging and disking will weaken the roots and aid in control when used in conjunction with herbicides.

Biological: Biological control agents are being investigated, but the recent introduction of Asian soybean rust is thought to be very devastating to kudzu.

Chemical: Glyphosate, clopyralid (Transline), metsulfuron (Escort) and aminopyralid (Milestone VM) can be used to control kudzu. Follow label directions and precautions.

Glyphosate (5% solution) can be an effective option for small stands growing up poles or fences in residential areas. However, glyphosate is weak on kudzu and repeat applications will be necessary. Likewise, clopyralid (Transline) is effective on young stands where kudzu is not well established. Clopyralid (21 fl. oz/A or 0.5% solution) is more effective than glyphosate and is safe to apply near trees, but can only be used in selected north Florida counties (see Transline label for specifications). Metsulfuron (Escort 4 oz/A) and aminopyralid (Milestone VM 7 fl. oz/A) are highly effective on

kudzu and commonly approach 100% control. Metsulfuron may cause damage to selected hardwoods if applied over the rootzone.

REFERENCES AND USEFUL LINKS:

Floridata Homepage: <http://www.floridata.com>

University of Florida Center for Aquatic and Invasive Plants:
<http://aquat1.ifas.ufl.edu/welcome.html>

University of Florida's Cooperative Extension Electronic Data Information Source:
<http://edis.ifas.ufl.edu/index.html>

Langeland, K.A. and K. Craddock Burks. 1998. Identification and Biology of Non-Native Plants in Florida's Natural Areas. IFAS Publication SP 257. University of Florida, Gainesville. 165 pp.

The Plant Conservation Alliance's Alien Plant Working Group. Weeds Gone Wild: Alien Plant Invaders of Natural Areas: <http://www.nps.gov/plants/alien/index.htm>

Pacific Island Ecosystems at Risk (PIER). Plant Threats to Pacific Ecosystems:
<http://www.hear.org/pier/threats.htm>

Invasive Plants of the Eastern United States: <http://www.invasive.org>

USDA Natural Resources Conservation Service. Plants Database: <http://plants.usda.gov>

Kansas Department of Agriculture, Plant Protection and Weed Control Program:
<http://www.accesskansas.org/kda/Plantpest/PestManagement/plant-pestmanagement-kudzu.htm>

Missouri Department of Conservation: Vegetation Management Guidelines for Kudzu:
<http://www.conservation.state.mo.us/nathis/exotic/vegman/fifteen.htm>

Mature Plant

- Vines grow >100 feet long
- Stems ½ to 4 inches in diameter
- Some old stumps in Georgia >12 in
- Spreads by seeds, runners, rhizomes, rooting vines



Massive taproot
>7 inches diameter
>6 feet long
Up to 30 vines per root crown

Leaves

- Alternate arrangement
- Compound leaf with 3 leaflets
 - Leaflets up to 4 inches across
 - Entire or deeply 2-3 lobed
 - Hairy margins



Flowers and Fruit

- Flowers purple and highly fragrant
- Long hanging clusters
- Brown flattened seed pods
- Contain only 1 to 2 viable seeds

