

Kudzu Control

in Forests, Rights-of-Way & Natural Areas



Figure 1. Kudzu infestations are often difficult to control.

Kudzu (*Pueraria montana* [Lour.] Merr.) is the most well-known invasive plant in the southeastern United States. Its aggressive and smothering growth habit makes it a serious weed problem in many noncrop environments including forests, rights-of-way, and natural areas. Kudzu control is often difficult and may take several years of aggressive treatment, especially for older patches that have persisted for decades.



Figure 2. Kudzu vines can hide logs, stumps, ditches, and anything abandoned in the area making mowing hazardous.

Q: Will repeated mowing or cutting work in removing kudzu?

Repeated mowing that removes more than 80 percent of the leaf area every month of the growing season for a few years can substantially weaken or kill a stand of kudzu. Generally, this option is only possible in abandoned old fields where steep slopes and rugged terrain are not an issue.

Mowing kudzu along field edges will only provide limited suppression if the vines originate beyond the mowed area. Mowing patches of kudzu may be hazardous as dense growth can hide ditches, stumps, fallen logs, rocks, gullies, sinkholes, and virtually anything abandoned in the area.

An additional drawback is that the tough, fibrous vines frequently clog mowing machines. Vines may also persist beneath the mowing height, further increasing the difficulty of control.



Figure 3. To stop new kudzu vine growth, cut just below the root crown and remove it from the soil.

Q: I tried to dig up kudzu and found a huge woody root. Do I need to remove the whole root to stop new growth?

No, you do not need to remove the whole root. The large root is a storage organ loaded with energy reserves, but it has no ability to sprout. Kudzu grows from seed and from root crowns. You can see these root crowns if you follow a vine to where it roots in the soil. Dig just a little around it and you will see several buds, new sprouts, or mature vines emerging from just at or below the soil surface. This is the root crown.

To stop new kudzu vine growth, cut just below the root crown and remove the root crown from the soil. Kudzu cannot regrow from below the root crown, and it does not sprout from lateral roots. Sometimes vines may be buried under a few inches of organic matter and leaf litter. This gives them the appearance of lateral roots, but they are not. Buried vines can root, making control more difficult because these hidden vines may produce many new shoots.

Q: What is the best tool to remove the root crowns?

Use a shovel or pick ax to expose the base of the root crown. Then use a sharp hatchet, mattock, ax, or a small handsaw to cut the root below the root crown. A shovel or hoe is not adequate for the job as the roots are very fibrous or woody. Pruning shears may work for cutting smaller root crowns, but will not work for large root crowns.

Typically, root crown removal is not practical over a large area, but it may be especially useful for eliminating resistant root crowns following herbicide treatment.

Q: What are my herbicide options for kudzu treatment?

Several herbicides are labeled for kudzu control in rights-of-way, forests, and natural areas. For homeowner kudzu control, see Extension publication ANR-2168, “Kudzu Control in Residential Areas.” With the exception of glyphosate, none of the herbicides in table 1 can be safely used in homeowner landscape settings. In all situations, always read and follow the herbicide label.

Q: What are my best options for kudzu control in pine plantations?

Kudzu control within pine stands may require a multiherbicide approach because of differences in the tolerance of pine species to labeled herbicides.

For site preparation treatments, aminopyralid and picloram are the two most effective herbicide options. Aminopyralid may also be used in directed spray applications for conifer release in young conifer stands. However, aminopyralid may cause severe injury if applied to conifer foliage or to the root zone of overstory trees. This eliminates it as an option if kudzu is growing into the canopy.

An exception is longleaf pine, which is more tolerant of aminopyralid, allowing its use for controlling kudzu in young longleaf. Otherwise, clopyralid is the safest herbicide for kudzu control in canopies of loblolly, longleaf, shortleaf, and slash pine. Metsulfuron can also be used to treat kudzu in loblolly and slash pine, but it is not labeled for use in longleaf or shortleaf pine.

Q: What is the best option on noncropland and right-of-way sites?

Aminocyclopyrachlor, aminopyralid, and picloram products are extremely effective for kudzu control on noncrop and rights-of-way areas.

Q: What is the best option to treat kudzu growing along water?

Triclopyr amine and glyphosate are generally weak on kudzu as stand-alone tools. However, they may be useful where kudzu control is required along water (see table 1).

Table 1. Foliar Applied Herbicides Recommended for Kudzu Control

Herbicide Active Ingredient	Herbicide Name	Broadcast Rate (Product/A)	Spot Treatment Rate	Site Uses
Aminocyclopyrachlor + metsulfuron	Streamline	9.5 to 11.5 oz./A.	7.5 to 11.5 oz./100 gal.	ROW, natural areas
Aminocyclopyrachlor + metsulfuron + imazapyr	Viewpoint	16 to 20 oz./A.	13 to 20 oz./100 gal.	ROW, natural areas
Aminopyralid	Milestone VM	7 oz./A.	7 oz./100 gal. 14 oz./100 gal ¹ .	ROW, natural areas
Aminopyralid + metsulfuron	Opensight	3.3 oz./A.	3.3 oz./100 gal.	ROW, natural areas
Aminopyralid + triclopyr	Milestone VM Plus, Capstone	9 pt./A.	9 pt./100 gal. 9 qt/100 gal ¹ .	ROW, forests ² , natural areas
Clopyralid	Transline	1.33 pt./A.	21 oz./100 gal.	ROW, forests, natural areas
Dicamba + 2,4-D	Veteran 720	1 gal./A.	1 gal./100 gal.	ROW, forests
Metsulfuron	Escort, generics	3 to 4 oz./A.	3 to 4 oz./100 gal.	ROW, forests, natural areas
Picloram + 2,4-D ³	Tordon 101M	2 gal./A.	2 gal./100 gal.	ROW, forests
Picloram	Tordon K	0.5 gal./A.	0.5 gal./100 gal.	ROW, forests
Triclopyr ester	Garlon 4 Ultra	1 to 2 gal./A.	1.5 gal./100 gal.	ROW, forests, natural areas
Triclopyr amine	Garlon 3A	--- ⁴	1 to 3 gal./100 gal.	ROW, forests, natural areas, aquatic
Glyphosate	Accord Concentrate, others	0.75 gal./A.	1.5 gal./100 gal.	ROW, forests, natural areas, aquatic ⁵

¹ Not more than 50 percent of an acre may be treated at this rate.

² See label for specific forestry uses.

³ All products containing picloram are Restricted Use pesticides.

⁴ Not recommended as a stand-alone broadcast treatment.

⁵ Only specific glyphosate products are labeled for use in water.

Q: What is the best time of year to treat kudzu?

Late summer through early fall is the optimal treatment period for kudzu. However, treatments may be applied beginning in the early summer. Avoid treating in the spring before leaves have fully expanded. Do not treat kudzu that is severely drought stressed or when a hard frost is expected within 2 weeks of treatment.



Figure 4. Broadcast spray application can be used on kudzu.

Q: How many herbicide treatments will be required to completely kill kudzu?

Kudzu root crown age is important in the outcome of herbicide treatment. Young kudzu root crowns can generally be killed with a single treatment. However, older root crowns may require repeated treatments for 3 to 5 years. Seed may lie dormant in the soil for many years, and these herbicides do not kill dormant seed.

Q: Kudzu bugs are abundant in the kudzu I am treating. Will they eliminate my kudzu problem?

Current data indicates that kudzu bugs may be reducing the vigor and competitive ability of kudzu. This is most evident in recent observations of early successional plants such as common ragweed, goldenrod, and blackberry appearing in kudzu patches infested with high numbers of kudzu bugs. Kudzu's smothering growth typically inhibits the growth of most early successional plants. While this is a good sign, the bugs are not likely to eradicate kudzu, even at very high numbers.



Figure 5. Kudzu bugs feed on plant sap.



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For more information, contact your county Extension office. Visit www.aces.edu/directory.

The pesticide rates in this publication are recommended only if the product(s) is registered with the Environmental Protection Agency and the Alabama Department of Agriculture and Industries. If a registration is changed or canceled, the rate listed here is no longer recommended. Read and follow all directions on the label. Trade names are used only to give specific information. Alabama Extension does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

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Q: Is there a best time to spray if kudzu bugs are present in the patch?

Assuming you want to try to kill kudzu bugs along with the kudzu, timing is important. Although herbicide sprays are not directly injurious to kudzu bugs, if treatment is done when most kudzu bugs are immature (before they can fly), you may locally reduce the population as the juveniles will starve as the kudzu dies. However, kudzu bug adults will move when the kudzu begins to die after treatment. If your goal is to maximize kudzu control regardless of the kudzu bugs, treatment in the late summer after kudzu bugs have inflicted season-long damage may be the optimal application timing.

Q: What is the best approach to control kudzu patches that are growing on the edge of soybean fields?

This scenario is sensitive, and great care should be taken when treating kudzu. Fencing the kudzu-infested areas and using intensive grazing or repeated mowing are probably the two safest approaches. However, neither will be feasible in many situations. In terms of herbicide options, every herbicide listed in table 1 can be lethal through drift to soybeans (all herbicides listed), volatility (triclopyr ester and dicamba), or herbicide soil residual activity (aminocyclopyrachlor, aminopyralid, clopyralid, metsulfuron, and picloram).

Glyphosate is a safe option for use along field margins of Roundup Ready soybeans at 2.5 to 3.3 quarts per acres. However, the maximum single in-crop application rate is 44 ounces per acre with a total in-crop use of 64 ounces per acre per season. Given that glyphosate is generally weak on kudzu, the low rates used may only provide kudzu suppression. However, it is the safest approach for kudzu management when soybeans are nearby.



Figure 6. Controlling kudzu growing near soybean fields can be a challenge. (Photo credit: David Moorhead, University of Georgia. Bugwood.org)