

Fence Row Herbicide Evaluation: Efficacy of Control

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OBJECTIVE

The objective of this study was to determine effective, cost-efficient methods of controlling undesirable fence row vegetation using various herbicides, application rates and methods. Treatments were applied on a fence row in Jefferson County, Georgia.

All of the treatments were applied on 15 September 2005, except for a Tordon 101 treatment which was applied to kudzu in late August 2005. The demonstration site was evaluated one month post-treatment (October 2005), 12 months post-treatment (20 September 2006), and 19 months post-treatments (11 April 2007).

CONSTRAINTS and PRECAUTIONS

A constraint for landowners is that many of the most effective herbicides are labeled as “restricted use”. Such products require a person to possess a valid pesticide applicators license to be able to purchase and legally apply the herbicides. Contact your local county Extension agent for information on obtaining a Pesticide Applicators License. Any time herbicides are applied it is essential to follow the application rates listed on the label, and to wear appropriate personal protective equipment (clothing, gloves, goggles) as indicated on herbicide label.

The effectiveness of the herbicide application depends on the 1) coverage, making sure the product was applied to the target area; 2) application rate, using the appropriate mixture (oz/ac or % solution); and 3) timing, time of year and weather conditions the day of application are essential.

!Herbicide Use Precautions!

Escort: Do not use near longleaf pine (foliar and soil active)

Tordon: Do not use near desirable trees (soil active)

Chopper: Do not use near desirable hardwoods (soil and foliar active)

Garlon: Do not apply to foliage or bark of desirable trees (foliar active, basal active in oil mixture)

Razor Pro: Do not apply to foliage of desirable trees (foliar active)

Cost estimation (per 100 linear feet of fence row)

(Unit Conversions: 43,560 ft²/ac; 128 oz/gal)

Step 1: Acquire price per gallon of herbicide you intend to use.

Step 2: Determine the amount of herbicide needed to control unwanted species based on a “per acre” basis;

(a) Calculate average spray swath width for complete coverage (14 feet is used in the following example);

(b) Divide 43,560 ft² (area of one acre) by swath width (14 ft) to determine the total length of a single swath of required width equaling one acre in area (Example: 43,560/14 = 3,111 linear feet);

(c) Divide 3,111 by 100 ft to determine the number of 100 foot “runs” you can spray (Example: 3,111/100 = 31 runs, each 100 ft long)

Step 3: Use the calculated number of runs (31 from example above) to determine cost per 100 feet of fence row sprayed.

Cost Estimation (per 100 feet of fence row)				
Product	Cost/unit*	Application Rate	Cost/acre	Cost/100 ft**
Chopper	\$148/gal.	32 oz/ac (most hardwoods)	\$37	\$1.20
Escort	\$13/oz.	5 oz/ac (for Kudzu)	\$65	\$2.10
Razor Pro	\$20/gal.	96 oz/ac (most hardwoods)	\$15	\$0.48
Remedy	\$95/gal	32 oz/ac (for Kudzu)	\$23.75	\$0.77
Tordon 101	\$39.50/gal.	168 oz/ac (for Kudzu)	\$51.85	\$1.67

* Product prices as of June - August 2007

** Costs for individual stem basal treatment and percent solution formulations are harder to estimate.

Herbicide & Rate	Control/Efficacy Rating* & Other Observations
Basal Spray Treatments	
Garlon 4 (Triclopyr) @ 20% solution + penetrant	Good, long-term control of chinaberry, privet, and water oak (<i>Photo Series 1a</i>). Some wild plum, water and willow oaks were still living; basal spray application may have missed.
Pathfinder II (Triclopyr) – RTU (Ready To Use)	Excellent, long-term control of chinaberry, released honeysuckle (<i>Photo Series 1b</i>).
Low Volume Foliar Spray Treatments [Low volume (< 30 gal/ac); Applied with backpack or ATV mounted sprayer system]	
Chopper (Imazapyr) @ 64 oz/ac	Poor, near- to mid-term control of kudzu; Good control of greenbrier and pokeberry. (<i>Photo Series 2</i>)
Chopper @ 48 oz/ac	Excellent, long-term control of sweetgum, black cherry, greenbrier, wild plum, and privet; Fair control of hackberry; Did not kill 3-6 feet loblolly pine saplings (stunted terminal growth), released ragweed and goldenrod. (<i>Photo Series 5</i>)
Tordon 101 (Picloram) @ 168 oz/ac	Good to Excellent, long-term control of kudzu; Released honeysuckle; Fair to Good control of greenbrier; Poor control of sweetgum; Herbicide interception by kudzu canopy may have reduced control of understory plants. (<i>Photo 3</i>)
Escort (Metsulfuron) @ 5 oz/ac	Good, long-term control of kudzu; Fair to Good control of greenbrier; Fair control of privet and pokeberry; Poor control of hackberry and water oak, No control of winged elm; Encroachment of greenbrier and privet after 19 months post-treatment. (<i>Photo Series 4</i>)
Razor Pro (Glycophosate + Surfactant) @ 5% solution	Excellent, mid-term control of sweetgum, privet, winged elm, and chinaberry; Good control of kudzu; Fair control of pokeberry, and only poor to fair control of greenbrier; Fair to good long-term control overall; Release of ragweed and goldenrod observed.
Razor Pro @ 5% solution + Chopper @ 32 oz/ac	Good to excellent, mid-term control of chinaberry and privet; Good control of winged elm; Poor to fair control of hackberry and pokeberry; released ragweed and goldenrod. Regrowth of Winged elm 19 months post-treatment. (<i>Photo Series 6</i>)
High Volume Foliar Spray Treatments [High volume (50-100 gal/ac); Applied with a tractor mounted sprayer system]	
Remedy (Triclopyr) @ 32 oz/ac	Good to excellent, long-term control of kudzu (some regrowth, but had a very large canopy originally); Fair control of greenbrier; No effect on pokeberry; Trumpet creeper and honeysuckle recolonizing; Regrowth of blackberry 19 months post-treatment. (<i>Photo Series 7</i>)
Escort @ 5 oz/ac	Excellent, long-term control of kudzu; Release of grasses (crab and dallis), ragweed, and sida.
*Control Ratings: Excellent = 90-100%; Good = 80-89%; Fair 70-79%; Poor < 70% Efficacy Rating: Near-term = 1 month post-treatment; Mid-term = 12 months post-treatment; and Long-term = 19months post-treatment	



Photo Series 1. Chinaberry photos. (a) Garlon 4 (@ 20%) +penetrant and (b) Pathfinder II RTU basal spray; areas prior to treatment (top left; 15 September 2005); 12 months post-treatment (top right; 20 September 2006); and 19 months post-treatment (bottom left; 11 April 2007).



Photo Series 2. Kudzu photos. Chopper @ 64 oz/ac broadcast spray areas prior to treatment (left; 15 September 2005) and 12 months post-treatment (right; 20 September 2006).



Photo 3. Tordon 101 (@5.25 qts/ac) 13 months post-treatment (20 September 2006).



Photo Series 4. Kudzu photos. Escort (@ 5 oz/ac) pre-treatment (top left; 15 September 2005), one month post-treatment (top right; October 2005), and 19 months post-treatment (bottom left; 11 April 2007).



Photo Series 5. Privet, sweetgum, black cherry, greenbriar, wild plum, and hackberry photos. Chopper (@ 48 oz/ac) pre-treatment (top left; 15 September 2005), 12 months post-treatment (top right; 20 September 2006), and 19 months post-treatment (bottom right; 11 April 2007).



Photo Series 6. Privet, sweetgum, winged elm, hackberry, and pokeberry photos. Razor Pro (@ 5% soln) + Chopper (@ 32 oz/ac) pre-treatment (left; 15 September 2005) and 12 months post-treatment (right; 20 September 2006).



Photo Series 7. Kudzu photos. Remedy (@ 1 qt/ac) pre-treatment (top left; 15 September 2005), one month post-treatment (top right; October 2005), and 19 months post-treatment (bottom left; 11 April 2007).

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CITATION

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