

Individual Plant Foliar Sprays on Greenbriar

Charles R. Hart, Extension Range Specialist, Stephenville
Will Hatler, Extension Program Specialist, Stephenville
Nicholas B. Hoffman, County Extension Agent, Freestone County
Marty J. Vahlenkamp, County Extension Agent, Hood County
Jon Gersbach, County Extension Agent, Milam County
Gideon Jennings, County Extension Agent, Hill County
Mark Arnold, County Extension Agent, Ellis County
Chris Schneider, County Extension Agent, Johnson County
Todd Vineyard, County Extension Agent, Erath County

SUMMARY

Greenbriar control trials were established in 2007 and 2009 to evaluate several different herbicides, rates, and surfactants. Individual plant leaf spray applications were established at two sites in 2007 and seven sites in 2009 in various counties throughout central Texas. Final evaluations have been made in the 2007 treatments, and initial evaluations will be available one year post-treatment on those installed in 2009.

OBJECTIVES

Greenbriar is a tough, woody, invasive plant and a significant problem in areas of central to East Texas. Several herbicides alone, in tank mixes, and with differing surfactants are evaluated in this project to determine the best control for Greenbriar.

MATERIALS AND METHODS

Individual plant leaf spray applications were established on June 18, 2007 in Freestone County and July 3, 2007 in Hood County. The site in Freestone County was located on the Maysel property and the site in Hood County was located on the Rockin H property. Each site included the same herbicides and rates. The Maysel site treatments had a total spray volume of 4 gallons, while the Rockin H property treatments had a 2 gallon total spray volume. Also, each treatment had 0.25 % v/v Topfilm surfactant added to the herbicide mix.

Plots installed in 2007 were individually treated using backpack sprayers equipped with an X26 nozzle at the Maysel site and an X28 nozzle at the Rockin H site. Each plot was variable in size. Treatments were visually evaluated for percent brown-out at 40-60 days after treatment and for percent mortality at 120 – 150 days, and 1 and 2 years after treatment.

Additional plots were installed in May-August of 2009 in seven counties throughout central Texas. Sites were established on May 20 in Milam, May 21 in Hill, May 29 in Johnson, June 18 in Hood, June 26 in Ellis, July 14 in Freestone, and August 3 in Erath Counties. Plots installed in 2009 were individually treated using backpack sprayers equipped with an X8 nozzle. Each plot was variable in size and had a total spray volume of 1 gallon. The Milam and Hill County sites received identical treatments of Pasturegard, Surmount, Remedy, or MAT28 paired with various surfactants. All other sites received identical treatments of Pasturegard, Surmount, Remedy, and Chaparral combined with methylated seed oil (MSO). Herbicides and rates for all sites are presented in Table 1.

Table 1. Herbicides and rates for Greenbriar control plots established 2007 and 2009.

Treatment			
No.	Herbicide	Rate	Material/plot
Freestone & Hood Co. sites (2007) – Topfilm at 1% was added to all treatments			
1	Remedy	2.00% v/v	307.2 ml
2	Remedy + Cimarron Plus	2.00% v/v 1 g/gal	307.2 ml 4.0 g
3	Remedy + Cimarron Plus	2.00% v/v 2 g/gal	307.2 ml 8.0 g
4	Forefront	2.00% v/v	307.2 ml
5	PD2	2.00% v/v	307.2 ml
6	Surmount	1.00% v/v	153.6 ml
7	Vista	1.00% v/v	153.6 ml
Milam & Hill Co. sites (2009)			
1	Pasturegard	2.00% v/v	76.8 ml
	Topfilm	0.25% v/v	9.6 ml
2	Surmount	2.00% v/v	76.8 ml
	Topfilm	0.25% v/v	9.6 ml
3	Remedy	2.00% v/v	76.8 ml
	Topfilm	0.25% v/v	9.6 ml
4	Pasturegard	2.00% v/v	76.8 ml
	MSO	1.00% v/v	38.4 ml
5	Surmount	2.00% v/v	76.8 ml
	MSO	1.00% v/v	38.4 ml
6	Remedy	2.00% v/v	76.8 ml
	MSO	1.00% v/v	38.4 ml
7	Pasturegard	2.00% v/v	76.8 ml
	NIS	0.25% v/v	9.6 ml
8	Surmount	2.00% v/v	76.8 ml
	NIS	0.25% v/v	9.6 ml
9	Remedy	2.00% v/v	76.8 ml
	NIS	0.25% v/v	9.6 ml
10	MAT28	2.00% v/v	76.8 ml
	MSO	1.00% v/v	38.4 ml
Johnson, Hood, Ellis, Freestone & Erath Co. sites (2009) – MSO at 1% was added to all treatments			
1	Pasturegard	2.00% v/v	76.8 ml
	Chaparral	2.00 g/gal.	2.0 g
2	Surmount	2.00% v/v	76.8 ml
	Chaparral	2.00 g/gal.	2.0 g
3	Remedy	2.00% v/v	76.8 ml
	Chaparral	2.00 g/gal.	2.0 g
4	Pasturegard	2.00% v/v	76.8 ml
5	Surmount	2.00% v/v	76.8 ml
6	Remedy	2.00% v/v	76.8 ml
7	Chaparral	2.00 g/gal.	2.0 g
8	Chaparral	4.00 g/gal.	4.0 g
9	Chaparral	6.00 g/gal.	6.0 g

RESULTS AND DISCUSSION

Visual percent brown-out estimates were made to the 2007 plots at sixty days post-treatment on the Maysel site and forty days post-treatment on the Rockin H site. Also, percent mortality evaluations were made 150 days and one year after treatment on the Maysel site, and 120 days and one year after treatment on the Rockin H site. The Maysel site showed greater percentage brown-out in the first evaluations of short-term treatment effect. Initial mortality evaluations revealed negligible results for treatments 5-8 at both sites. Remedy at 2% had the most potential at one year after treatment. The Maysel site was shredded and retreated by the landowner prior to the second year site visit, making evaluation impossible. Treatment effect continued to decline at the Rockin H site at 2 years after treatment, with plot 2 showing the highest mortality at 35% (Figure 1). Results for all the evaluations are shown in Table 2. Treatments applied in 2009 will be evaluated for initial apparent mortality at one year after treatment.

Table 2. Percent brown or percent mortality at various dates after treatment of greenbriar foliar IPT plots.

Plot No.	Herbicide	Rate	% Brown	% Mortality	% Mortality	% Mortality
			60 DAT	150 DAT	1 YAT	2 YAT
Freestone Co. site			60 DAT	150 DAT	1 YAT	2 YAT
1	Remedy	2.00% v/v	100%	90%	20%	-
2	Remedy + Cimarron Plus	2.00% v/v 1 g/gal	100%	75%	5%	-
3	Remedy + Cimarron Plus	2.00% v/v 2 g/gal	100%	40%	5%	-
4	Forefront	2.00% v/v	90%	60%	10%	-
5	PD2	2.00% v/v	95%	10%	5%	-
6	Surmount	1.00% v/v	100%	10%	5%	-
7	Vista	1.00% v/v	60%	10%	0%	-
Hood Co. site			40 DAT	120 DAT	1 YAT	2 YAT
1	Remedy	2.00% v/v	99%	90%	50%	20%
2	Remedy + Cimarron Plus	2.00% v/v 1 g/gal	99%	90%	40%	35%
3	Remedy + Cimarron Plus	2.00% v/v 2 g/gal	99%	90%	30%	20%
4	Forefront	2.00% v/v	30%	90%	10%	5%
5	PD2	2.00% v/v	70%	50%	0%	5%
6	Surmount	1.00% v/v	90%	30%	0%	0%
7	Vista	1.00% v/v	15%	30%	0%	0%

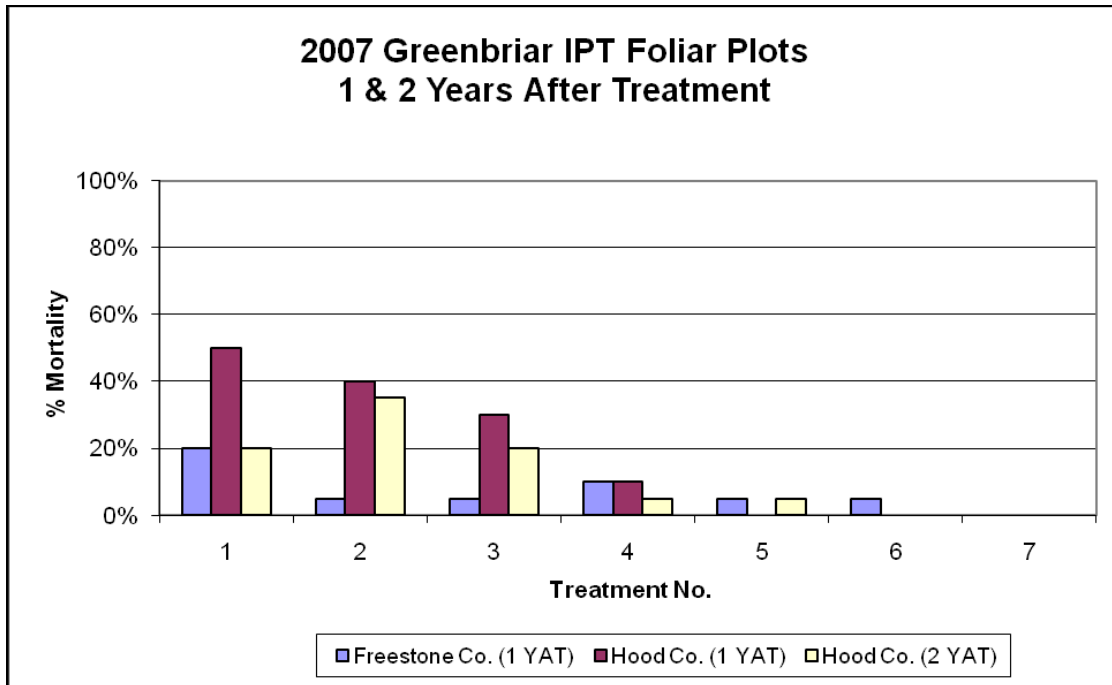


Figure 1. Percent mortality estimates at 1 and 2 years after foliar IPT on greenbriar plots installed in 2007.

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