

RATE RESPONSE FROM APPLICATIONS OF PREMIX IMAZAPYR AND GLYPHOSATE FOR USE IN SITE PREPARATION. A.W. Ezell and J.L. Yeiser. Mississippi State University, Starkville, and Stephen F. Austin State University, Nacagdoches, TX.

ABSTRACT

To evaluate the efficacy of premix combinations of imazapyr and glyphosate, a total of six herbicide treatments were replicated three times at sites in Mississippi and Texas. Three replications of an untreated check were also evaluated (table 1) to evaluate treatment efficacy, woody stems were counted pretreatment (Aug, 2000) and one year after treatment (Aug, 2001). Brownout was evaluated at 4 WAT, and herbaceous competition control was evaluated in May and August of the growing season after application (2001).

The three higher rates of the premix (Trts. 3,4,5,6) resulted in acceptable brownout, and would adequately carry a site preparation burn. In herbaceous control, all treatments except the lowest premix rate (Trt. 3) provided good response in May, 2001, but by August, only the highest rate (Trt 6) maintained substantial amounts of clear ground.

Control of woody stems varied by species. In Texas, principal species were yaupon, American beautyberry, and loblolly pine, all of which are resistant to imazapyr and lower rates of glyphosate (Table 3).

On that site, overall control was poor and treatments could not be separated statistically. In Mississippi, woody species included sweetgum, red maple, black cherry, sassafras, and post oak. All herbicide treatments were extremely effective on these species (Table 4), and only when all species were examined could any treatment differences be found. Although not statistically significant, a rate response difference was noted between Trt. 3 and Trt. 4. This response was also evident when "sums of heights" was used as the evaluation criterion (Table 4).

Overall, this premix product appears to work well. As always, the species complex on the site should dictate choice of products and rates. Of the applications tested in this study, the 102.2 oz/A rate appeared to be most cost-effective.

Table 1. List of Treatments in BASF Site Prep Study.

Treatment No.	Herbicide and Rate/A
1	Untreated
2	48 oz Chopper + Sun – It oil (12.5% v/v)
3	Imazapyr/Glyphosate Numbered Cpd – 51.1 oz
4	Imazapyr/Glyphosate Numbered Cpd – 102.2 oz
5	Imazapyr/Glyphosate Numbered Cpd – 153.3 oz
6	Imazapyr/Glyphosate Numbered Cpd – 204.4 oz

Table 2. Percent stem reduction for principal woody species in 2000 BASF site prep study by treatment (avg. all reps)-TX

Treatment No.	Species			
	Yaupon	AMB ¹	Pine	Total
Percent				
1	-78b ^{2 3}	-98a	-60a	-79a
2	57a	-97a	-139a	-59a
3	8ab	-59a	-77a	-43a
4	-39ab	-58a	-21a	-39a
5	-62b	-43a	-92a	-66a
6	-2ab	-27a	-44a	-25a

¹AMB=American beautyberry

²Values in a column followed by the same letter do not differ at $\alpha=0.05$

³Negative values indicate an increase in stems

Table 3. Percent stem reduction for principal woody species in 2000 BASF site prep study by treatment (avg. all reps.)

Treatment No.	Species ¹					Total
	SWG	REM	BLC	SAS	POO	
	percent					
1	3.0b ²	41.7b	-200.0b ³	50.0b	-126.7b	1.4b
2	100.0a	100.0a	100.0a	100.0a	100.0a	98.4a
3	100.0a	100.0a	100.0a	100.0a	100.0a	90.4a
4	100.0a	100.0a	100.0a	100.0z	100.0a	97.7a
5	100.0a	100.0a	100.0a	100.01	100.0a	98.3a
6	100.0a	100.0a	100.0a	100.01	100.0a	99.5a

¹ SWG= sweetgum, REM = red maple, BLC = black cherry, SAS = sassafras, POO = post oak.

² Values in a column followed by the same letter do not differ at $\alpha = 0.05$.

³ Negative values indicate and increase in stems.

Table 4. Percent reduction in “sum of heights” for all woody species in 2000 BASF site prep study (avg. all reps)

Percent Reduction		
Treatment No.	TX	MS
1	-121b ^{1 2}	-20.6c
2	4a	98.6a
3	-44a	88.6b
4	-23a	97.5a
5	-19a	99.0a
6	-4a	99.8a

¹Values in a column followed by the same letter do not differ at $\alpha=0.05$

²Negative values indicate an increase