

EFFECT OF APPLICATION TIMING AND PRODUCT APPLICATION RATE ON HERBACEOUS WEED CONTRL DURING THE GROWING SEASON FOLLOWING SITE PREPARATION USING TANK MIXES WHICH INCLUDE SULFOMETURON. A.W. Ezell and J.L. Yeiser, Mississippi State University, Starkville and Stephen F. Austin State University, Nacagdoches, TX.

ABSTRACT

A total of 10 herbicide treatments (Table 1) were replicated these times at locations in Mississippi and Texas. These herbicide treatments were applied at three separate timings (August, September and October). In addition, three replications of untreated check plots were installed and evaluated. The purpose of the study was to evaluate the effect of application timing and application rate on the herbaceous weed control resultant from the inclusion of sulfometuron methyl in the site preparation tank mixture. Plots were evaluated prior to treatment (August, 2000) to assess woody stem coverage and then in April, May, June, July, and August of 2001 to evaluate herbaceous weed control. Final woody stem assessments were completed in November, 2001.

In Mississippi, the only effect from application timing was the reduced amount of clear ground in the September treatment plots. The study site was extremely droughty at the September application time, and since these type treatments had been tested twice previously using September applications with excellent results, the reduced control is attributed to site conditions and not timing. Otherwise, the study indicated that August or October timings could be effective for such treatments (Table 2). In Texas, control varied somewhat and the early season follow-up (Trt. 1) and the higher rate in September provided better control than the August treatments (Texas site had no October treatments).

In an evaluation of rate response, the consistent trend was that 2 ounces of Oust® provided notably less control than the 3 ounce rate. However, increasing the application rate to 4 ounces did not improve control (Table 2).

Overall the site prep tank mixture provided very good to excellent control of the tree species, irrespective of application timing. Differences in total stem reduction were related more to species presence in plots than to application timing (Table 3).

In summary, inclusion of Oust® in fall site prep applications can provide herbaceous weed control during the ensuing growing season with little concern regarding application timing. Extremely droughty site conditions should be avoided for best results. Also, 3 ounces of Oust® appears to be the most cost effective rate.

Table 1. Treatment list for 2000 DuPont Fall Oust site prep study.

Treatment No.	Herbicide and Rate/A ¹	Timing
1	4 qts. Krenite + 24 oz. Chopper (fb 3 oz. Oust in 03/01)	August 1
2	4 qts. Krenite + 24 oz. Chopper + 2 oz. Oust XP	August 1
3	4 qts. Krenite + 24 oz. Chopper + 3 oz. Oust XP	August 1
4	4 qts. Krenite + 24 oz. Chopper + 4 oz. Oust XP	August 1
5	4 qts. Krenite + 24 oz. Chopper + 2 oz. Oust XP	September 1
6	4 qts. Krenite + 24 oz. Chopper + 3 oz. Oust XP	September 1
7	4 qts. Krenite + 24 oz. Chopper + 2 oz. Oust XP	October 1
8	4 qts. Krenite + 24 oz. Chopper + 3 oz. Oust XP	October 1
9	4 qts. Krenite + 24 oz. Chopper	October 1
10	64 oz. Chopper	October 1
11	Untreated	n/a

¹ 1% v/v X-77 surfactant was added to all treatments.

Table 2. Average percent clear ground by time of observation (herbaceous cover only) – (average all reps)

Trt. No	Time of Observation				
	April	May	June	July	August
August	percent				
1	100a	100a	98a	98a	82a
2	100a	100a	97a	93a	50b
3	99a	98a	97a	93a	76a
4	100a	99a	98a	95a	67ab
September					
5	100a	99a	96a	93a	38b
6	99a	98a	94a	86a	39b
October					
7	100a	100a	98a	97a	67ab
8	100a	100a	96a	96a	76a
9	100a	96a	86a	41b	15c
10	100a	97a	72b	41b	15c
11	28b	2b	0c	0c	0c

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

Table 3. Percent reduction of principal woody species in 2000 DuPont Fall Oust study – Mississippi (Average all reps).

Trt. No	Species ¹				
	SWG	REM	BLC	Trees	Total
	percent				
1	100.0a ²	100.0a	96.7a	97.7a	89.3a
2	100.0a	96.3a	100.0a	95.9a	81.5ab
3	100.0a	100.0a	100.0a	100.0a	91.1a
4	98.3a	93.3a	93.3a	90.0a	83.5ab
5	100.0a	100.0a	100.0a	93.5a	82.4ab
6	91.7a	93.3a	100.0a	87.0a	62.2b
7	97.8a	95.8a	00.0a	97.1a	76.2ab
8	100.0a	94.9a	87.8a	87.3a	79.1ab
9	100.0a	100.0a	88.3a	95.6a	85.6ab
10	100.0a	100.0a	100.0a	93.9a	88.2ab
11	50.6b	41.7b	-133.3b ³	15.1b	0.4c

¹SWG = sweetgum, REM = red maple, BLC = black cherry, Trees = all tree species (no shrubs), Total = all woody species (including shrubs).

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

³Negative values indicate an increase in the number of stems