

PREPARING PINE SITES WITH VELPAR+DUPONT GLYPHOSATE MIXTURES. J.L. Yeiser and E.W. Ezell. Arthur Temple College of Forestry, Stephen F. Austin State University 75962 and Department of Forestry, Mississippi State University, Mississippi State, MS 39762.

ABSTRACT

The objective of this study was to assess the potential of Velpar L+DuPont Glyphosate for the control of unwanted competitors occupying pine sites.

Two sites, one in MS and one in TX, were selected for testing. In MS, the study was installed on a recently harvested site three miles north of Sturgis. Previous cover was mixed pine-hardwood. Soils at the site are clay loam with a pH=5.5. In TX, the study was established near Wells. The soil there was a sandy clay loam with pH=5.5. The site supported a mixed hardwood-pine stand that was clearcut in January 2000 before planting in January 2001.

A total of nine treatments were tested in MS. Three of the treatments were applied early (May 12, 2000) and five were applied late (June 26). Test treatments were: in May, Velpar L+DuPont Glyphosate (6+2q, 4+4q), Velpar L (8q); and in June, Velpar L+DuPont Glyphosate (6+2q, 4+4q), Velpar (8q), Chopper+Accord SP+surfactant (48+32+16oz, 16+160+16oz). In TX, seven treatments were tested. Velpar L (6q), an industry check, was applied on May 22. The five, July 22 treatments were: Accord+Chopper (160+16oz), Velpar L+DuPont Glyphosate (4+4q, 6+2q), Velpar (8q), Chopper+Accord+X77 (48+32+16oz). An untreated check and eight herbicide treatments in MS and six herbicide treatments in TX were replicated three times in a randomized complete block design.

MISSISSIPPI

All treatments and timings provided excellent control of hickory and winged elm. Similar and best control was achieved for winged elm, hickory, post oak, and overall species with Velpar+DuPont Glyphosate (6q+2q), Velpar L early (8q), and Chopper+Accord+surfactant (48oz+32oz+16oz and 16oz+160oz+16oz). Early application of Velpar+DuPont Glyphosate (4q+4q) provided poor post oak control. Values for total control may be misleading, in that the majority of stems not controlled were loblolly pine and American beautyberry. Grass and broadleaf re-colonization of plots during spring 2001 was light. By July, grass cover was similar with only one treatment, Velpar L+DuPont Glyphosate applied early (4+4q), being significantly different from other treatments. Overall, grass cover in July 2001, one year following treatment in June 2000, averaged 6% for best treatments. Similarly, significant differences in broadleaf cover were not detected until July 2001. Late applications of Velpar L+DuPont Glyphosate (6+2, 4+4) had significantly more broadleaf cover than other treatments. Best treatments yielded 10% broadleaf cover in July. Grass and broadleaf cover on untreated checks were very comparable to treatment plots suggesting herbaceous cover was not related to herbicide treatments.

July seedling survival was similar for all treatments. Early treatments averaged 60% and late 49%. The study average survival was 53%.

TEXAS

All treatments similarly controlled rootstocks of winged elm (average 83%). Ingrowth of 3 rootstocks on checks was numerically the greatest. Greater percent stem reduction resulted from treatments of Velpar L+DuPont Glyphosate (160+16oz) and Velpar L (6q), with an average of 98%, than on check, Velpar L (6+2q), Velpar L (8q), and Chopper+Accord SP (48+32+16oz) plots, which averaged 55%. Treatments providing significantly less ingrowth (0.0%), more stem reduction (98%) and more height reduction of surviving rootstocks were the industry check (Velpar L 6q in May) and Accord+Chopper (160oz+16oz). Herb re-colonization of plots during the spring of 2001 was similar in March for all treatments with 47% cover. Differences in April, May, and June were among the treated plots and untreated checks. In April, May, and June cover for treated plots and checks were: 59% 99%, 68% 101%, and 84% 113%, respectively.

After one growing season, survival (92%), height (1.36 ft), ground line diameter (0.267 in), and volume index (0.00103 ft³) were similar for all treatments.

In conclusion, Velpar+DuPont Glyphosate combinations provided excellent control of winged elm and hickory. Control of post oak and total species was inconsistent. Control of 2001 herbaceous weeds by 2000 applications was detected but insufficient to yield increases in pine seedling survival or growth.