

PRIMARY SCREENING OF FORESTRY HERBICIDES FOR CONTROL OF CHINESE PRIVET (*Ligustrum sinense*), CHINESE WISTERIA (*Wisteria sinensis*), AND TRUMPETCREEPER (*Campsis radicans*). J. H. Miller, USDA Forest Service, Auburn University, AL 36849.

ABSTRACT

Exotic and native invasive plants increasingly hinder land management, use, and restoration projects. Chinese and Japanese privet are rapidly becoming major threats to future hardwood culture and currently hinder ROW management throughout the SE region. Chinese wisteria occurs as severe, dense isolated infestations in forest stands. Native trumpetcreeper can form dense ground cover under plantations that will require control before reestablishment. The objective of this research was to perform primary screening of forestry herbicides as foliar sprays on these three invasive species to identify efficacious active ingredients for further developmental research and treatment refinement. A separate study was established for each species. The study sites were in uniformly infested areas on the Piedmont near Auburn in east-central Alabama. Privet and wisteria were studied using completely randomized designs with four

and three replications, respectively. Trumpet creeper control was examined using a randomized complete block design with four replications. Plot sizes were 10 x 20 ft for privet, 10 x 10 ft for wisteria, and 12 x 24 ft for trumpet creeper. A labeled maximum or high rate of each herbicide were tested at two timings each. Applications were by a CO₂ sprayer with flat-fan nozzles and 40 gpa, except with Accord, which was at 20 or 30 gpa. Entry II at 0.25% was the surfactant used with all spray solutions. Activating rainfall occurred after 9 hours to 6 days.

Plots were rated 12 months after application using ocular estimates of percent volume reduction. Check plots were used as references, and for privet, before-treatment volumes were estimated and used in the analysis. Percents were arcsine square root transformed and data were analyzed using Tukey's HSD Test ($\alpha = 0.05$) because all treatment-timing interactions were significant.

Privet control exceeded 90 percent with Accord (glyphosate) at 1.5 gpa and Arsenal (imazapyr) at 24 opa applied in August or September, while Escort (metsulfuron) provided 89 percent control at 3.3 opa applied in August. These herbicides and rates were not significantly different. Escort in September yielded only 73 percent control. Other herbicides when averaged by timing were as follows: Garlon 4 (triclopyr) at 1.5 gpa gave 64 percent control, Oust (sulfometuron) at 6 opa gave 31 percent control, Vanquish (dicamba) at 1.5 gpa gave 27 percent control, Tordon K (picloram) at 0.5 gpa gave 12 percent control, and Transline (clopyralid) at 21 opa yielded no control.

Wisteria control exceeded 90 percent with Tordon K at 0.5 gpa in September and Garlon 4 at 1.5 gpa in both July and September. Control between 80 and 90 percent was yielded by Tordon in July, Arsenal at 0.25 gpa in September, Accord at 2 gpa in September, and Transline at 21 opa in July. Control by the remaining herbicides-timings were 73 percent with Transline in September, 70 percent by Accord in July, 55 percent with Arsenal in July, 18 percent with Escort at 4 opa in July and 12 percent in September.

Trumpet creeper control was 99.7 percent with Arsenal at 0.25 gpa and 98 percent with Accord at 2 gpa, both in July. September applications of Arsenal and Accord gave only 64 percent and 43 percent control, respectively. Tordon at 0.5 gpa, Garlon at 1.5 gpa, and Transline at 21 opa yielded 5 to 26 percent control when applied in July or September. Escort applied at 4 opa resulted in no control at either timing.

Forestry herbicides were identified that should permit eradication of these invasive plants after further treatment refinements.