

## Effect of carrier volume and adjuvant with foliar applications of triclopyr on Brazilian peppertree

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Brazilian peppertree (*Schinus terebinthifolia* Raddi) is a troublesome invasive shrub that grows across many wetland environments in Florida. It is notorious for prolific epicormic sprouting from the root collar and lateral roots following management efforts, and this greatly frustrates management efforts. Although high and low volume foliar treatments with triclopyr are common, there is a lack of data examining how application volume might influence triclopyr efficacy. Furthermore, assessment of different adjuvant types in relation to triclopyr efficacy and carrier volume are also lacking. To address this, greenhouse experiments were conducted from 2019 to 2020 at the University of Florida Center for Aquatic and Invasive Plants in Gainesville, Florida. Triclopyr was applied to Brazilian peppertree at  $1.12 \text{ kg ae ha}^{-1}$  in conjunction with either a protein-based adjuvant at three rates ( $0.6$ ,  $1.2$ , and  $2.3 \text{ L ha}^{-1}$ ) or a standard methylated seed oil (MSO) at  $1.2 \text{ L ha}^{-1}$ . Both were tested at low ( $187 \text{ L ha}^{-1}$ ) and high ( $935 \text{ L ha}^{-1}$ ) carrier volumes. We found that the protein-based adjuvant's performance was independent of rate and there were very few differences in triclopyr efficacy when applied with either adjuvant. No treatment effects were observed on percent defoliation at 75 or 180 d after treatment (DAT). Regardless of adjuvant type, plants treated at  $187 \text{ L ha}^{-1}$  exhibited 2.7 fewer epicormic shoots per plant and  $\sim 11\%$  lower live cambium height at 180 DAT compared to those treated at  $935 \text{ L ha}^{-1}$ . After plants were excised at 180 DAT and allowed to regrow for 60 d, plants treated at the lower carrier volume regrew 1.6 fewer epicormic shoots per plant, which equated to  $\sim 25\%$  less biomass per plant compared to those treated at the high carrier volume. Spray card data indicated adjuvant type did not influence above- or below- canopy spray coverage. However, the high application volume resulted in greater spray coverage both above and below the canopy than the low application volume. These data suggest that reducing carrier volume for triclopyr applications to peppertree can result in greater efficacy and this work supports the need for future research and development of low carrier volume application techniques for use in foliar triclopyr operations targeting Brazilian peppertree.