

# Peppertree Adjuvants and Carrier Volume

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## Introduction

*Schinus terebinthifolia*, commonly referred to as Brazilian peppertree, is a shrub that reaches over 30 feet in height with a tangling, thicket of branches. This plant is one of the most aggressive and wide-spread of all the pesky invasive plants in Florida. Peppertree invades aquatic and terrestrial sites; greatly reducing quality native habitat.

## Current Conditions

Peppertree is notorious for prolific sprouting from the trunk and roots; this greatly frustrates current management efforts.

There are various control methods to manage peppertree such as: mechanical and physical cutting, biological control agents, and chemical solutions. Physical control methods like cutting and mulching machines are labor intensive and do not provide long-term control due to peppertree's prolific resprouting. Similarly, the effectiveness of the recently released biological control agent, Brazilian peppertree thrips, is still uncertain. Therefore, chemical solutions like tricolopyr are important to examine as they are cost effective and can be applied by a variety of techniques.

## So What?

Brazilian peppertree is very difficult for land managers to control. UF/IFAS Center for Aquatic and Invasive Plants (CAIP) researchers explored using lower carrier volumes that yield a higher efficiency and less waste.

OVER **700,000** ACRES  
IN FLORIDA  
ARE **INFESTED** WITH  
**BRAZILIAN**  
**PEPPERTREE**



## SPRAY DEPOSITION

Spray coverage (%) was measured above and below the plant's canopy with spray cards. Spray puddling frequency was measured and observed during treatment.



Spray coverage  
above canopy



Spray coverage  
below canopy



Frequency of spray puddling

## Efficacy on peppertree

180 days after spray treatment, the resprouted peppertree growth was collected and measured in grams. Below are two different peppertree examples of resprout growth 180 days after treatment.



## Experiment

**Greenhouse experiments were conducted from 2019 to 2020 at the UF/IFAS CAIP.**

Researchers evaluated spray coverage and puddling frequency immediately after treatment (Table 1). As well as, resprout biomass 180 days after treatment (Figure 1).

These measurements allowed UF/IFAS CAIP researchers to evaluate peppertree response to two different carrier volumes: 20 and 100 gallons per acre (GPA).



## Objective

Evaluate the role of carrier volume for foliar triclopyr applications

## Results

In almost all cases, the higher carrier volume (100 GPA) resulted in more epicormic shooting and plant growth than the lower carrier volume (20 GPA).

This indicates that peppertree management may be more effective under lower carrier volume treatments over longer periods of time.

**Reducing carrier volume appears to be more precise and more effective, while resulting in less herbicide runoff.**

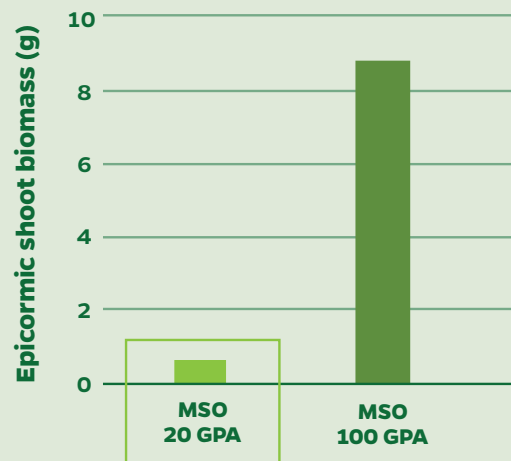
**Table 1**

Spray coverage and spray puddling frequency above and below the peppertree canopy as affected by carrier volume treatments under greenhouse conditions. On average, 20 GPA had less spray coverage and puddling immediately after treatment. This did not impact overall efficacy.

MAIN EFFECT	SPRAY COVERAGE		FREQUENCY OF PUDDLING	
	ABOVE CANOPY	BELOW CANOPY	ABOVE CANOPY	BELOW CANOPY
CARRIER VOLUME (GPA)	..... % .....			
20	89%	62%	8%	2%
100	96%	85%	51%	14%

**Figure 1**

Peppertree shoot biomass 180 days after treatment in response to methylated seed oil (MSO) and carrier volume (GPA). On average, at 20 GPA peppertree plant resprout biomass weights were less than 0.7 g; compared to the average 9 g of resprouting measured from 100 GPA treatments.



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