

INVASIVE PLANT FACTSHEET

Chinese tallow (*Triadica sebifera* All.)

Problems: Chinese tallow forms dense stands of trees that outcompete native plant communities and degrades native ecosystems in wetlands and riparian habitats. Leaves having high levels of acidic tannin reducing herbivory, which alters soil composition due to leaf decomposition. Sap and unripe fruits are also mildly toxic if ingested.

Regulations: This tree is on the MS noxious weed list, but it is not on the federal noxious weed list.

Description: Chinese tallow is a deciduous tree that can grow up to 60 feet tall in a wide range of habitats ranging from drought conditions to wetlands. The bark of the tree is fissured and light gray in color, and the branches transition from light gray to green. The pendant shaped leaves reach approximately two to three inches in length and turn deep red to maroon in the fall. Small yellow flowers with no petals grow along an eight inch long, dangling spike. In August, the tree produces fruit at the terminals of the branches in dark green to brown three-lobed capsules that split to reveal waxy white bulbs, similar to popcorn (hence the other common name popcorn trees). Chinese tallow trees produce an average of 100,000 seeds each season.

Dispersal: Chinese tallow is native to China and Japan and was introduced to the Carolina region of the United States as a seed oil crop and an ornamental in 1776. It is mainly found in the southeastern region of the country along with an increased presence in California. Seeds are spread by birds and water currents, but this tree will also regrow from stumps and root fragments. Chinese tallow was originally found in coastal Mississippi but has since spread across the entire state.

Control Strategies: **Physical** - it is possible to pull seedlings by hand, but this is labor intensive. **Mechanical** - cutting trees prior to flowering is ensures that seed production is reduced, but fragmentation and suckering from roots is likely to occur with this method. **Biological** - there are no known biological control mechanisms for Chinese tallow. **Chemical** - the herbicides triclopyr, glyphosate, imazamox, and imazapyr are effective Chinese tallow control options; however, application method may vary depending on tree size and site characteristics (Table 1).

Acknowledgements: This project was funded by the Mississippi Aquatic Invasive Species Council through the Mississippi Department of Environmental Quality from a grant provided by the U.S. Fish and Wildlife Service.

References

Turnage, G. 2019. A Brief Introduction to Factors Affecting Water Quality, Aquatic Weed Control, Herbicide Labels, & Mixing Calculations. Mississippi State University, Geosystems Research Institute Report #5084. Pp. 22.

Enloe SF, K Langeland, J Ferrell, B Sellers, and G MacDonald. 2018. Integrated management of non-native plants in natural areas of Florida. University of Florida, Center for Aquatic and Invasive Plants. 35 pp.

Miller JH, ST Manning, and SF Enloe. 2015. A management guide for invasive plants in southern forests. USDA Southern Research Station, Technical Report SRS-131. 133 pp.

Self, B. 2020. Herbicidal Control of Invasive Tree, Shrub, and Vine Species in Mississippi. Mississippi State University, Extension Service Publication #3474.

Tables and Figures

Table 1. Chemical control strategies for Chinese tallow; the first row for each herbicide is the amount of formulated product needed for commercial applications (100-gal solution), the second row is the amount of product needed for private landowners (25-gal of solution; typical ATV sprayer size); all rates are in imperial units (see Turnage 2019 for instructions on calculating ac-ft; and to gain a greater understanding of how aquatic plant management and aquatic ecosystem processes affect each other).

| HERBICIDE ^{*,†} | SPOT RATE | BROADCAST RATE | SURFACTANT | NOTES |
|--------------------------|-----------|----------------|------------|---|
| Triclopyr | CUT STUMP | 50% | - | Apply immediately after cut |
| Triclopyr | 2% | 2 gal/ac | 1% (1 gal) | Apply to seedlings/saplings (<10 ft height) |
| | | 0.5 gal | 1 qt | |
| Imazamox | 2% | 0.5 gal/ac | 1% (1 gal) | Apply to seedlings/saplings or mature trees |
| | | 1 cup | 1 qt | |
| Imazapyr | 0.75% | 3 qt/ac | 1% (1 gal) | Apply to seedlings/saplings (<10 ft height) |
| | | 3 cups | 1 qt | |

*Triclopyr rates are based on a 3 lb./gal amine formulation, imazamox rates are based on a 1 lb/gal formulation, and imazapyr rates are based on a 2 lb./gal formulation; see Turnage (2019) regarding herbicide labels and formulation determination.

†This table is meant to be an aid in mixing herbicide solutions; it is not meant to be used as a replacement for herbicide label recommendations.



Figure 1. Image of Chinese tallow leaves (left) and saplings (right). Image credit: L – C Evans (Univ. Illinois; www.bugwood.org); R – RD Wallace (Univ. Georgia; www.bugwood.org).

Author Contact Information:

Gray Turnage, PhD.
Assistant Research/Extension Professor
Mississippi State University, Geosystems Research Institute
2 Research Blvd., Starkville, MS 39759
662-325-7527, Gturnage@gri.msstate.edu
www.gri.msstate.edu

