

Weed Snapshot: Chinese tallow (*Triadica sebifera*)

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Background

Chinese tallow is a deciduous tree from Asia. Legend has it that Benjamin Franklin brought over Chinese tallow from Asia in the 1700s as a source for tallow (wax) production. It is unknown if there is any truth in that story. During the 1960s and 70s, it was promoted by many land-grant universities as an ornamental tree. It was especially popular in Florida for many reasons. It was fast growing, free of most pest and diseases, tolerant of a wide variety of soil conditions, and showy with bright, attractive foliage in the fall. Unfortunately, these attributes that made it a popular ornamental tree, also made it the ideal invasive tree. Chinese tallow has become a serious invasive tree throughout the eastern United States.

Identification

Chinese tallow is a member of the spurge family. It is a medium sized tree with pale grey bark with some furrows. It has unique leaves that make it easy to identify. The alternately arranged leaves are rhombic shaped. Rhombic leaves are diamond shaped and are widest in the middle and narrow to a point at both ends (see image 1). The leaves also have a pronounced drip tip that allows water to drain off the leaves. Chinese tallow produces drooping yellow-green flowers that superficially resemble those of oak trees. Its seeds are born in white clusters that give Chinese tallow its other common name, the popcorn tree (see image 2). Chinese tallow produces copious amounts of seeds that are often eaten and spread by birds.

Biology and Control

One of the reasons Chinese tallow has become such an invasive weed, is its ability to tolerate different habitats. It survives on both upland and wetland habitats. It has become a major problem in both Paynes Prairie and the wetlands of south Georgia. It can still be found growing as an ornamental in Alachua County, but most of the time it grows in fields or disturbed sites. Mechanical control is not a recommended strategy for controlling Chinese tallow unless the trees are in the seedlings stage. Otherwise, the entire tree including the roots needs to be dug up, a costly and labor intensive operation. Chinese tallow trees that are cut down have the ability to re-sprout from the stump. This ability is known as coppicing. Chinese tallow trees with multiple trunks are ones that have re-sprouted from a cut stump. Chemical control is the most effective option for managing Chinese tallow. Foliar applications are only recommended for seedling and sapling trees. The best chemical control methods are basal bark, cut stump and hack and squirt treatments.

For all these methods unless the applicator is going to treat a large number of trees, it is best to mix up only a small amount of the herbicide solution. Start with mixing up a pint or quart of the herbicide solution. A little goes a long way for these applications.

Basal Bark Applications

Basal bark treatment involves spraying the trunk with a mixture of herbicide and penetrant oil. The penetrant oil allows the herbicide to absorb through the waxy bark and into the phloem tissue of the tree. Basal bark applications can be made with a squirt bottle or sprayer. The oil soluble, ester formulation of triclopyr (Remedy Ultra, Garlon 4, Element 4) is the recommended herbicide to control Chinese tallow. Once inside the phloem, the herbicide will be transported to the roots of the tree. Some herbicide labels will have diesel or kerosene listed for use as penetrant oils; however, this is not recommended due to environmental contamination. Basal oil is a plant based oil that is available from several different manufactures. It causes less bark scaring than diesel and allows for a more thorough absorption of the herbicide. It also has a more pleasing smell and is more environmentally friendly. These applications work best when the tree is 6 inches or less in diameter. The trunk is then sprayed with the oil-herbicide mixture. Apply the herbicide in a 20% solution in oil. The trunk needs to be sprayed from ground level up to 1.5 feet. Make sure to spray the entire circumference of the trunk. If only half the trunk is sprayed, then only half the tree will die. Basal bark applications can be done any time of the year. These applications are not fast acting and will take 3-6 months to kill the tree.

Cut Stump Applications

For trees that are larger than 6 inches in diameter, other application methods are needed to get the herbicide inside the tree. One of these methods is the cut stump treatment. For this application method the stump needs to be cut close to the ground and as level as possible. Stumps with an uneven surface will cause the herbicide to run off. Cut stump treatments can be applied with a paint brush, squirt bottle, or sprayer. For stumps that are larger than 4 inches in diameter, only the outer ring needs to be treated (see image 3). The interior the stump is made up of dead heartwood and will not absorb any of the herbicide. For smaller stumps (less than 4 inches in diameter) the entire surface can be treated. Make sure to add a marker dye to the spray solution to indicate which stumps have been treated. Ideally, stumps should be treated with the herbicide as soon as possible. Water soluble herbicides can be used for up to 15 minutes after the tree is cut down. Garlon 3A is the water soluble amine formulation of triclopyr. Apply it within a 50% solution with water. After 15 minutes, sap will cause the stump to harden off making it difficult for a water soluble herbicide to penetrate. To overcome this, apply the ester formulation of triclopyr in a 25% solution with basal oil. Fall is the best time for cut stump applications. In spring, positive sap pressure can reduce herbicide intake into the roots.

Hack and Squirt

Hack and squirt applications are useful for when an applicator needs to remove a tree, but does not want to cut it down. The applicator uses a hatchet to hack small incisions around the circumference of the tree trunk. One hack should be made for every 4 inches in DBH (diameter at breast height). For example, if a tree has a DBH of 20 inches than 5 hacks should be made around the tree. The incisions need to be chopped at a downward angle creating cup shape incisions. The herbicides are then squirted into the incisions. Make sure the herbicide solution stays in the cup shape incisions and does not run out. The recommended rate is a 50% solution of triclopyr amine in water. Herbicides should be applied at the rate of 1 squirt per hack. Hack and squirt applications can be made any time of the year. However, like cut stump treatments, spring applications may result in incomplete control due to positive sap pressure.

Table 1. Dilution rate for herbicide solutions

Herbicide rate	Container size		
	1 pint	1 quart	1 gallon
20%	3.2 oz herbicide/12.8 oz of oil or water	6.4 oz herbicide/25.6 oz of oil or water	25.6 oz herbicide/102.4 oz of oil or water
25%	8 oz herbicide/8 oz of oil or water	16 oz herbicide/16 oz of oil or water	64 oz herbicide/64 oz of oil or water
50%	8 oz herbicide/8 oz of oil or water	16 oz herbicide/16 oz of oil or water	64 oz herbicide/64 oz of oil or water

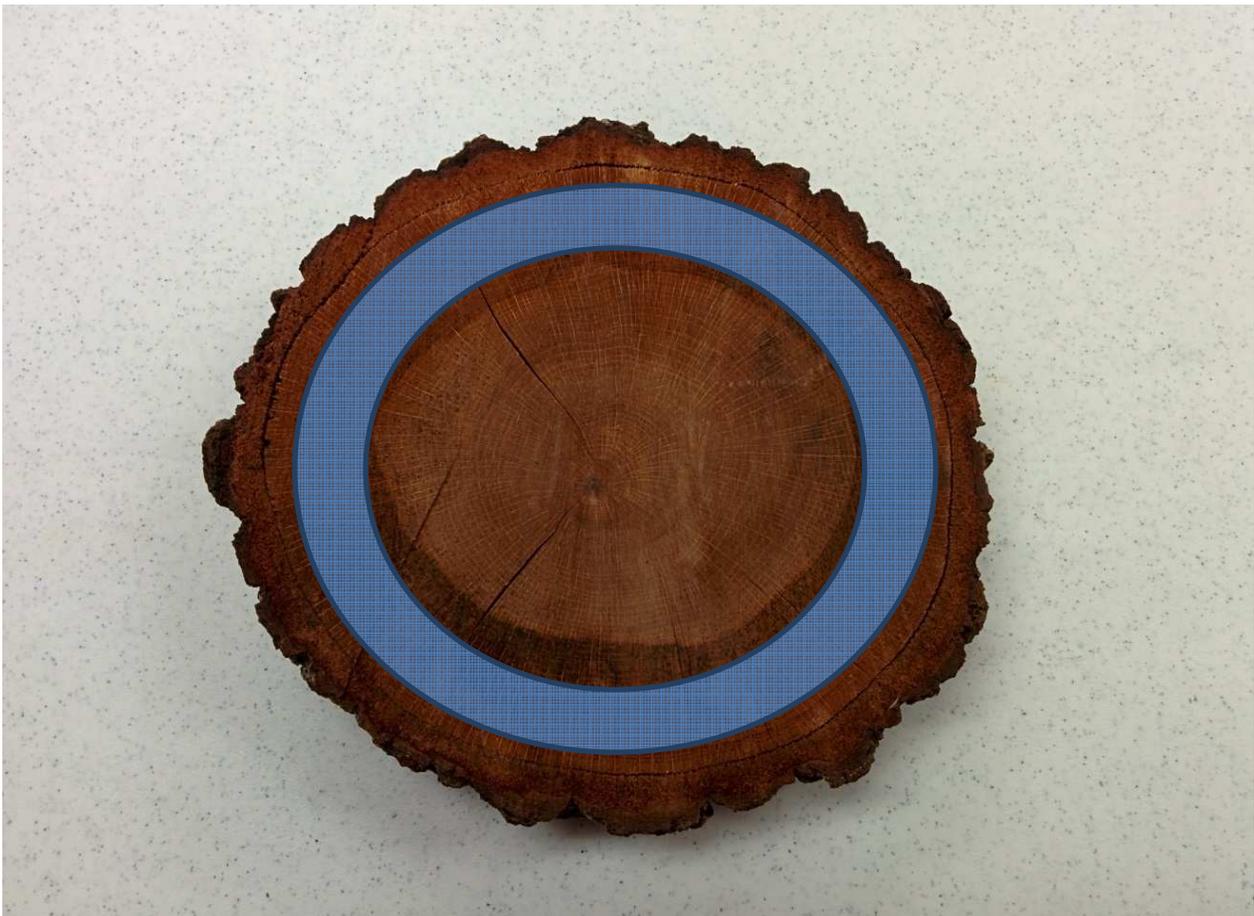
Image 1



Image 2



Image 3



To simplify information available, it is sometimes necessary to use trade names of products, equipment and firms. No endorsement is intended, nor is criticism implied of similar products, equipment and firms not mentioned.

References

Ferrell, J. K. Langeland, and B. Sellers. 2012. *Herbicide Application Techniques for Woody Plant Control*. UF/IFAS Extension Service. <http://edis.ifas.ufl.edu/ag245>
