

**Scientific Name:** *Paulownia tomentosa*

**Common Name:** Princess Tree

*Updated: 12/30/2015*

**A. Priority: B**

**B. Description** – Native to eastern Asia, *Paulownia tomentosa* has been widely planted for horticultural purposes in North America from Montreal to Florida and west to Missouri and Texas. This tree is moderately cold-hardy so it has spread principally in the Eastern and Southern portions of the United States. In North Carolina it poses a particular problem in the foothill and mountain regions. *Paulownia tomentosa* is capable of flowering within 8 to 10 years and a mature tree can produce millions of seeds. The seeds are small and winged, dispersing easily in the wind. This aggressive tree grows rapidly (up to 15 feet per year) in all types of disturbed habitats. Princess tree may reach a height of up to 50 feet. The bark of this tree is characteristically gray with shallow, shiny ribs. The leaves are large (5-10 inches long on mature trees), heart-shaped, and oppositely arranged along the branches. The edges of the leaves often have blunt “horns” on each side. Stump sprouts and young plants have extremely large leaves that can be up to 32 inches long. This tree flowers in April and May, usually before its leaves have fully emerged. The very, large, light purple flowers are distinctively sticky and hairy on the outside. These flowers are arranged in pyramidal clusters that are about 10 to 15 inches long. The fruits appear from April through June and the hulls persist in large brown clusters through the winter and into early spring. The seeds from these fruits are small and winged and disperse easily.

**C. Damage and threats** – Princess tree is an extremely fast-growing competitor with native species. The annual seed rain is enormous, and the seeds are easily dispersed by wind. They have been commonly documented to travel in excess of .5 mile. It is an extremely fast-growing species, and may be six to eight feet in its second year of growth. It can quickly form monocultures and displace native species. It is thought that this species comes in quickly after fire.

**D. Management Options**

**Mechanical Control:** Hand pulling Princess Tree seedlings is easiest when the soil is moist and the population is small. Pull steadily and slowly to minimize soil disturbance and tamp down the soil afterwards. In small infestations, larger plants can also be removed by digging if care is taken to remove all roots. This is not practical for larger infestations, however. It is important to verify whether young shoots are actually seedlings or sprouts from an established plant with extensive roots. If it is the latter, chemical control methods should be used if the entire plant cannot be readily removed by digging. Once the initial infestation is eradicated, hand pulling may be used to remove seedlings discovered during routine monitoring.

**Chemical Control:** Use of a systematic herbicide is the best option to control Princess Tree. We recommend using aquatic formulations of herbicides in this region to limit potentially unwanted effects to the surrounding environment.

- a. **Foliar Spray** – This method involves spraying a dilute herbicide directly onto the plants leaves. Application needs to occur when foliage is present, sometime between full leaf and the onset of fall for full effectiveness. Caution should be taken when applying herbicide with this method as non-target plants can easily be killed by drift or overspray. Application should cover at least 80% of the leaves.  
To treat, use a 2-4% solution of aquatic triclopyr in water with a 0.5% non-ionic surfactant and apply directly to leaves until just before runoff. Air temperatures must be above 65 degrees and winds should be lower than 5 mph.
- b. **Cut Stump** – This method involves cutting the stump as close to the ground as possible (no more than 5in.) and immediately applying a systematic herbicide. It is best to use this method between summer and fall, but it may be used as long as the ground is not frozen. To treat using this method, apply a 50% formulation of aquatic glyphosate or triclopyr directly to the cut stump.
- c. **Hack and Squirt** - Use an ax to make downward-angled cuts (45 degrees) into sapwood around the tree trunk as close to the ground as possible. Immediately squirt 1-2oz of a 50-60% solution of aquatic triclopyr or glyphosate into the cuts so that the bottom of the cut is covered, but liquid does not run out. Space the cuts so that about 1 to 2 inches of uncut living tissue remains between the cuts. A complete girdle can also be conducted in this fashion.
- d. **Basal Bark** - This method should be used judiciously since it takes a lot of chemical and can result in overspray. It has been used successfully in situations where no other technique is easy such as cliff faces or other exposed sites. Apply a solution of 25 percent triclopyr and 75 percent mineral oil to the basal parts of the tree to a height of 12 to 16 inches from the ground during the late winter/early spring or summer. All treatments should be followed up the next year to monitor and control basal sprouts and root suckers.

## E. Recommended Management Strategy

- a. We recommend treating all mature species first (>5in DBH) via the hack and squirt method prior to seed onset in July. This will ensure that seed production will not occur in the current year.
- b. Secondly, foliar application of all resprouts and smaller saplings should occur. Ideally, this should be conducted in the late spring following the hack and squirt treatment. Additional Hack and squirt should also be conducted at this time on any trees that were missed or did not die from the previous treatment. Depending on the size of the saplings, cut stump or basal bark applications may need to occur on species that are too tall to effectively foliar spray.
- c. The process described in b above should be repeated at least once each year for three years to ensure control.

## F. Additional and Updated Information

For additional information including photographs and the most up to date control recommendations please visit [www.wachng.org/Plants](http://www.wachng.org/Plants).