Tree of Heaven

Description: Tree-of-heaven (*Ailanthus altissima*), commonly referred to as ailanthus, is a rapidly growing deciduous tree native to both northeast and central China, as well as Taiwan.

Size: Tree-of-heaven has rapid growth and can grow into a large tree, reaching heights of 80 feet and up to 6 feet in diameter.

Bark: The bark of tree-of-heaven is smooth and brownish-green when young, eventually turning light brown to gray, resembling the skin of a cantaloupe.

Leaves: Tree-of-heaven leaves are pinnately compound, meaning they have a central stem in which leaflets are attached on each side. One leaf can range in length from 1 to 4 feet with anywhere from 10 to 40 leaflets. The leaflets are lance-shaped with smooth or "entire" margins. At the base of each leaflet are one to two protruding bumps called glandular teeth. When crushed, the leaves and all plant parts give off a strong, offensive odor.

Twigs: The twigs of tree-of-heaven are alternate on the tree, stout, greenish to brown in color, and lack a terminal bud. They have large **V- or heart-shaped leaf scars** when broken off. The twigs easily break to expose the large, spongy, brown center, or pith.





LOOK-a-likes This species is easily confused with some of our native trees that have compound leaves and numerous leaflets, such as staghorn sumac, black walnut, and hickory. The leaflet edges of these native trees all have teeth, called serrations, while those of tree-of-heaven are smooth. The foul odor produced by the crushed foliage and broken twigs also unique to tree-of-heaven.

CONTROL

Due to its extensive root system and resprouting ability, tree-of-heaven is difficult to control. Treatment timing and following up the second year are critical to success. Mechanical methods, as cutting or mowing, are ineffective, as the tree responds by producing large numbers of stump sprouts and root suckers.

Hand pulling young seedlings is effective when the soil is moist and the entire root system is removed. Small root fragments are capable of generating new shoots.

To control tree-of-heaven, target the roots with systemic herbicides applied in mid- to late summer (July to onset of fall color) when the tree is moving carbohydrates to the roots. Herbicide applications made outside this late growing season window will only injure aboveground growth. Following treatment, repeated site monitoring for signs of regrowth is critical to prevent reinfestation.

Herbicides applied to foliage, bark, or cuts on the stem are effective at controlling tree-of-heaven. Cut stump herbicide applications do not prevent root suckering and should not be utilized. There are many effective herbicides available for use on tree-of-heaven, including dicamba, glyphosate, imazapyr, metsulfuron methyl, and triclopyr. For most treatments we recommend using herbicides containing the active ingredients glyphosate or triclopyr because they have practically no soil activity and pose little risk to nontarget plants through root uptake.

Hack-and-squirt herbicide applications are highly selective with a concentrated herbicide solution applied to downward-angled cuts in the stem. For effective hack-and-squirt applications, apply the herbicide solution to cuts spaced evenly around the stem. Leaving uncut living tissue between the hacks allows the herbicide to move to the roots. Again, make applications in mid- to late summer.

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Bud Break												
Flowering and Seed Ripening												
Foliar or Stem Treatment												
Cutting after Treatment												