



*Ailanthus altissima*

WA – Class C Noxious Weed, Prohibited Plant List

OR – Class B Noxious Weed

## Tree-of-Heaven

Stinking Quassia, Copal-Tree

**Family:** Simaroubaceae

**Origins:** Native to Taiwan and China, Tree-of-Heaven was first introduced to the United States in 1784 as a garden ornamental.

**Range:** Recorded on every continent except Antarctica and in 44 of the United States.

**Habitat:** Tree-of-Heaven typically grows near forest edges, disturbed habitats, roadsides, railroad embankments, abandoned lots, and urban parks. It tolerates temperate to subtropical and humid to arid climates.

**Impact:** Tree-of-Heaven outcompetes native plants by forming dense thickets and releasing allelochemicals into the soil, inhibiting the growth of neighboring plants. It is a preferred host for the Spotted Lanternfly, a crop-damaging invasive insect. A single Tree-of-Heaven can produce 325,000 seeds per year, viable in the soil for one year. Lateral roots grow up to 50 feet in length and can produce new sprouts; cut branches can form roots if left on the moist ground.

**Description:** Tree-of-Heaven is a rapidly-growing deciduous tree, reaching heights of 100 feet. Alternate compound leaves range from 1 to 4 feet in length, with 10 to 40 leaflets. Smooth, lance-shaped leaflets are green to blue-gray above and whitish below due to small, fuzzy hairs. When crushed, the leaves and all plant parts give off a strong odor, often similar to peanut butter or popcorn. Leaf scars on the bark are heart-to-shield-shaped. Young bark is yellow to brown, eventually turning light brown to gray, with diamond-shaped cracks. Plants are primarily dioecious, with male and female flowers on separate plants, but bisexual flowers can develop. Flowers clusters are up to 12 inches wide with small light green to yellow flowers about 1/3 inch wide. Large seed pods cluster at stem tips. Seeds are encased in a twisted papery wing, changing color from green, yellow, red, and brown.

**Common Look-Alikes:** Black Walnut, Smooth Sumac, Staghorn Sumac.

*\*Not known to be toxic.*

### Integrated Pest Management - Control Methods

Integrated Pest Management (IPM) combines various methods such as mechanical, cultural, biological, and chemical controls to manage pests. IPM offers the possibility of improving the efficiency of pest control while reducing its negative environmental impacts. For more information, see the Cowlitz County Noxious Weed's IPM Resources & Strategy Guide or contact your local Noxious Weed Control Board to develop a customized IPM plan.

### Non-Herbicide Control

**Mechanical**  
 (pulling, cutting,  
 digging, etc.)

Cutting alone is not effective; the creeping roots underground will re-sprout and may encourage new growth.



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<b>Cultural</b>	Growing plants with a tight canopy or over-seeding with a competitive grass species can discourage new seedlings from germinating.
<b>Biological</b>	Goats and sheep destroy the above-ground portion of smaller trees and may weaken the root system.

### Herbicide Control

<b>Glyphosate</b> (Rodeo, Killzall, Kleenup, Roundup)	<p><b>Timing:</b> Foliar treatment when leaves are fully expanded; frill treatments (hack and squirt) in late summer to early fall.</p> <p><b>Remarks:</b> Only spray to the intended target; will injure vegetation on contact; refer to the label for use in aquatic areas; may be mixed with Dicamba for best results.</p> <p><i>Foliar:</i> Treatments should be made only to small trees; spray complete uniform coverage but not to the point of runoff.</p> <p><i>Frill:</i> A simple guideline for the number of hacks is one per 3 inches of diameter, with a minimum of two. It is essential to space the cuts, leaving intact bark between them. If the stem is girdled completely, the herbicide cannot translocate to the roots; spray herbicide solution into hacks immediately using a squirt bottle, filling the cuts.</p>
<b>Triclopyr Ester / Triclopyr Amine</b> (Garlon 4 / Garlon 3A, Element 3A)	<p><b>Timing:</b> Foliar treatment when leaves are fully expanded; frill (hack and squirt) and basal bark treatment in late summer to early fall.</p> <p><b>Remarks:</b> Spray complete uniform coverage; dust on plants may reduce effectiveness; refer to the label for use in aquatic areas.</p> <p><i>Foliar:</i> Treatments should be made only to small trees; spray complete uniform coverage but not to the point of runoff.</p> <p><i>Frill:</i> A simple guideline for the number of hacks is one per 3 inches of diameter, with a minimum of two. It is essential to space the cuts, leaving intact bark between them. If the stem is girdled completely, the herbicide cannot translocate to the roots; spray herbicide solution into hacks immediately using a squirt bottle, filling the cuts.</p> <p><i>Basal Bark:</i> Spray the bottom 12 to 15 inches off the ground completely around the stem; spray complete uniform coverage but not to the point of runoff.</p>
<b>Imazapyr</b> (Imazapyr, Arsenal, Habitat)	<p><b>Timing:</b> Frill (hack and squirt) and basal bark treatments in late winter/early spring and summer.</p> <p><b>Remarks:</b> Soil residual herbicide may be harmful to nearby tree species; it may result in bare ground around the base of the tree; refer to the label for use in aquatic areas.</p> <p><i>Frill:</i> A simple guideline for the number of hacks is one per 3 inches of diameter, with a minimum of two. It is essential to space the cuts, leaving intact bark between them. If the stem is girdled completely, the herbicide cannot translocate to the roots; spray herbicide solution into hacks immediately using a squirt bottle, filling the cuts.</p> <p><i>Basal Bark:</i> Spray the bottom 12 to 15 inches of bark off the ground completely around the stem; spray complete uniform coverage, but not to the point of runoff.</p>

\* Cowlitz County Noxious Weed Control Board does not endorse any product or brand name. Brand names are listed as an example only. Other commercial products may contain the listed active chemical for herbicide control. Always read and follow the safety protocols and rate recommendations on the herbicide label. **The Label is The Law.**

This control sheet includes excerpts from the Written Findings of the Washington State Noxious Weed Control Board (WSNWCB), [nwcb.wa.gov](http://nwcb.wa.gov). Herbicide information from the PNW Weed Management Handbook (ISBN 978-1-931979-22-1) and product labels.