



Medium Risk / Impact
in all regions of the Okanagan

Widespread in some areas, but limited distribution in other
locations with significant potential to spread in the region.

Tree of Heaven

Ailanthus altissima

AKA: stinking sumac, Chinese sumac, varnish tree, stink tree, paradise tree

DESCRIPTION

- Grows to 24 meters in height and 1.8 m in diameter
- Pale gray bark, light brown twigs
- Large pinnately compound leaves
- Resembles sumacs and hickories, but is easily recognized by the glandular, notched base on each leaflet and by the offensive odour it emits
- Blooms in late spring creating small flowers ranging in color from green to orange
- Flowers form a loose cone shape
- Fruit is flat, papery, and twisted

Tree of heaven first arrived to North America in the late 1800s, brought to California by Chinese miners during the gold rush. Its common name refers to its rather tall height. It is a competitive, fast-growing tree that reproduces primarily by seed. It produces up to 300,000 seed per tree in a year, which can be spread by wind, water, birds, and farm equipment. Seeds remain viable in the soil for no more than a year or two. Tree of heaven can also regrow from the stump or lateral roots if cut or disturbed.



Tree of heaven

HABITAT

Native to central China and Taiwan, it can tolerate poor soils and can grow in disturbed urban areas where it sprouts up in alleys, sidewalks, parking lots and streets. In rural areas, tree of heaven can grow in fields, along roadsides, lakeshores, and forest edges. Tree of heaven is intolerant of flooding and deep shade. It is now widespread throughout British Columbia.

LOOK-A-LIKE

Tree of heaven is often confused with native sumacs, such as the **smooth sumac** (*Rhus glabra*). Tree of heaven can be distinguished from smooth sumac by its pungent odour when its leaves and stems are crushed. Some describe the smell as burnt rubber. The other noticeable difference between these species is in the leaves; smooth sumac leaves are serrated and/or toothed while tree of heaven leaves are smooth. Sumac also has bright red leaves in the fall. Tree of heaven is also sometimes confused with black walnut (*Juglans nigra*).



Sumac in fall

IMPACT AND RISKS

- Prolific seed producer and can successfully compete with native vegetation.
- Can develop dense thickets of cloned trees.
- Chemicals in leaves, bark, roots and seed that suppress the growth and germination of surrounding plants (i.e. allelopathic effect).
- The aggressive root system can cause damage to sewers and foundations.
- Tree of heaven is the preferred host of the Spotted Lanternfly, an invasive insect that is regulated in Canada because of its threat to the grape, fruit tree and forestry industries, as well as the environment.
- Tree of heaven is a preferred host of the brown marmorated stink bug, an invasive insect that is regulated in Canada.
- In some people, tree of heaven pollen causes allergic reactions and exposure to sap or plant parts can cause skin irritation.



PREVENTION AND MITIGATION

- Do not trade or grow tree of heaven.
- Regularly patrol your property for invasive trees and immediately control or remove new seedlings.
- Cooperate with adjacent landowners and encourage them to prevent invasive tree spread.
- Immediately re-vegetate disturbed, bare soils with a suitable seed mixture that provides dense, early colonization to prevent invasion.
- Do not move contaminated soils to a new area.



TREATMENT AND DISPOSAL

- Seedlings can be hand-pulled or dug out when the soils are moist
- Young trees (trunk diameter 8 cm or less) can be pulled out using a tree wrench; ensure the entire root is removed
- Mowing and brush-cutting can suppress trees, but are only effective if re-sprouts are continually cut throughout the growing season for multiple consecutive years; re-sprouts can be treated with herbicide
- Girdling can help to provide control; in the spring when trees are actively growing, manually cut away bark and cambial tissues around the trunk as close to the ground as possible using an axe
- Cut down large trees, ideally before seeds mature, and apply herbicide to the stump to prevent re-growth; re-cut sprouts and apply herbicide each growing season
- Chipping is an effective means of disposal for limbs and trunks
- Chemical control is also an option; before applying herbicides, read the label for full use and precautionary instructions
- For further information on the selection and application of chemicals to protect your crop, contact AgriService BC at 1-888-221-7141 or email AgriServiceBC@gov.bc.ca
- A mite has been identified as a promising biological control agent (natural insect enemy) for tree of heaven and is currently being researched in North America; studies have found significant damage to seedlings and new spring growth, indicating that this mite is sufficiently host-specific

Project funding and support provided by:

