Ailanthus altissima 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Sapindales	Simaroubaceae

Common name Chinese sumac (English), tree-of-heaven (English, USA), stinking shumac (English)

Synonym

Similar species *Carya illinoinensis, Rhus typhina, Juglans nigra*

Summary Ailanthus altissima is a very aggressive plant, a prolific seed producer (up to 350,000 seeds in a year), grows rapidly, and can overrun native vegetation. It also produces toxins that prevent the establishment of other plant species. The root system is aggressive enough to cause damage to sewers and foundations.

view this species on IUCN Red List

Species Description
Ailanthus altissima is a small to medium-sized tree of the mostly tropical Quassia family. It has a smooth, grey bark with compound leaves which are alternate, odd-pinnate, with 11-25 lanceolate leaflets. Most leaflets have one to three coarse teeth near their base. Mature trees can reach 24 metres or more in height. Flowers occur in panicles at the ends of branches and the male flowers produce a strong odour, described as the smell of burnt peanut butter. The leaves, when crushed, also produce a distinctive odour. Seeds are centred in a papery sheath called a samara. The samaras are slightly twisted or curled and twirl as they fall to the ground. The wood of *Ailanthus altissima* is soft, weak, coarse-grained, and creamy white to light brown in colour.

Notes
Male flowers are conspicuous and ill smelling, attracting many insects. Female flowers are less odorous and less conspicuous.

Lifecycle Stages
Established trees produce numerous suckers from the roots and sprout vigorously from cut stumps and root fragments. Seedlings establish a taproot three months after germination. *A. altissima* probably lives for no more than 100 years in North America (usually less) but the root system and its sprouts can persist for a longer time.

Uses
The wood is often used in China for lumber, fuelwood and other products. In the U.S. it is occasionally used for low-grade lumber, pulpwood and fuelwood. The toxin produced in the bark and leaves of *A. altissima* is being studied as a possible source for a natural herbicide. It is used in traditional herbal medicine in China.

Habitat Description
Ailanthus altissima establishes itself readily on disturbed sites, such as railroad embankments, highway medians, fencerows, and roadsides. In naturally forested areas, *A. altissima* may become established in areas disturbed by storms or infestations. *A. altissima* has the ability to grow in poor soils and under stressful environmental conditions. It grows in full sun and thrives in poor growing conditions. Germination rates are high, provided soil has adequate moisture. It is well adapted to heavy clays and other soils with low nutrient and oxygen content.

Reproduction
Ailanthus altissima reproduces both sexually (seeds) and asexually (vegetative sprouts). Flowering occurs late in the spring (June in the middle Atlantic region of eastern United States). The species is dioecious (trees have either male or female flowers). A single tree can produce around 325,000 to 350,000 seeds a year. Trees grow quickly, as stump sprouts grow up to 3cm per day.

Nutrition
Ailanthus altissima is well adapted to heavy clays and other soils with few nutrients.

General Impacts
All over the United States, *Ailanthus altissima* has become a pest of agricultural, urban and forested areas. Seedlings and root suckers of *A. altissima* grow rapidly and spread prolifically and thus quickly out-compete many native species for sunlight and space. It also produces a toxin in its bark and leaves. As it accumulates in the soil, the toxin inhibits the growth of other plants. The root system is capable of damaging sewers and foundations.

Management Info
Preventative measures: A Risk assessment of *Ailanthus altissima* for Australia was prepared by Pacific Island Ecosystems at Risk (PIER) using the Australian risk assessment system (Pheloung, 1995). The result is a score of 12 and a recommendation of: reject the plant for import (Australia) or species likely to be a pest (Pacific).

Pathway
Was commonly available from nurseries by 1840

Principal source:

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Phil Pannill, Maryland Dept. of Natural Resources - Forest Service.

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ALIEN RANGE

[1] EUROPE
[1] FRANCE
[1] GIBRALTAR
[1] MEDITERRANEAN AREA
[1] SAINT HELENA
[38] UNITED STATES

Red List assessed species 3: EN = 1; VU = 1; LC = 1;

Onosma tornensis **EN**
Pulsatilla grandis **LC**
Silene hicesiae **VU**

BIBLIOGRAPHY

8 references found for **Ailanthus altissima**

Managment information

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European and Mediterranean Plant Protection Organization (EPPO), 2005. Reporting Service 2005, No. 9.
Summary: The EPPO Reporting Service is a monthly information report on events of phytosanitary concern. It focuses on new geographical records, new host plants, new pests (including invasive alien plants), pests to be added to the EPPO Alert List, detection and identification methods etc. The EPPO Reporting Service is published in English and French.
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Summary: Report on description, habitat, distribution, threats and control.

Hu, S. 1979. *Ailanthus*. Arnoldia. 39(2):29-50.
Summary: Report on description, habitat, distribution, threats and control.

Swearingen, J. M. and P. Pannill. 1999. Tree-of-Heaven (*Ailanthus altissima*). Washington, DC: National Park Service, Plant Conservation Alliance, Alien Plant Working Group.
Summary: Report on description, ecological threat, current management approaches, distribution and habitat in the United States, background.

Varnham, K. 2006. Non-native species in UK Overseas Territories: a review. JNCC Report 372. Peterborough: United Kingdom.
Summary: This database compiles information on alien species from British Overseas Territories.
Available from: http://www.jncc.gov.uk/page-3660 [Accessed 10 November 2009]

Virginia Department of Conservation and Recreation and the Virginia Native Plant Society. 1999. *Ailanthus altissima* (Miller) Swingle
Summary: Report on description, habitat, distribution, threats and control.

General information

ITIS (Integrated Taxonomic Information System), 2004. Online Database *Ailanthus altissima*
Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.
Available from: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=28827 [Accessed December 31 2004]