Catalog of Species Search Results

:: Catalog of Species Search

Ailanthus altissima

(Tree-of-heaven
Copal Tree)

COMMON NAME

Tree-of-heaven
Copal Tree

FULL SCIENTIFIC NAME

Ailanthus altissima (Miller) Swingle

FAMILY NAME COMMON

Quassia family

FAMILY SCIENTIFIC NAME

Simaroubaceae

IMAGES

Staminate inflorescence

Staminate inflorescence with leaves

Pistillate flowers with young fruit


Seedlings


Habit


Fruits (Samaras)


Incursion


Plants in the forest


Leaflets close-up

NOMENCLATURE/SYNONYMS

Synonyms: *Ailanthus glandulosa* Desf.

DESCRIPTION

Botanical Glossary

Ailanthus altissima is a rapidly growing dioecious tree that can reach over 18.3 m (60 ft.) in height. The leaves are 0.3-0.9 m (1-3 ft.) long . Each leaf is comprised of 11-25 ovate-lanceolate leaflets which are each 7.6-12.7 cm (3-5 in.) long. They are truncate at the base and acute or acuminate at the apex. There are usually one or more coarse teeth at the base of the leaflet, and each of these teeth has a large gland beneath it. The bark of this tree is extremely smooth and pale gray in color.

The inflorescence is pyramidal in shape and is 10.0-20.3 cm (4-8 in.) long with greenish to greenish-yellow flowers [5 mm (0.2 in.)] that appear in late spring. The staminate flowers and broken twigs have an unpleasant scent. The fruits are twisted samaras that appear from September to October on the female trees. They are yellow-green to orange-red and changing to brown in the winter, and are 5 cm (2 in.) long.

Page References Bailey 611, Fernald 953, Gleason & Cronquist 355, Holmgren 335, Magee & Ahles 697. See reference section below for full citations.

SIMILAR SPECIES

Rhus typhina L. Picture of *R. typhina*
R. glabra L. Picture of *R. glabra*
R. copallina L. (Sumacs) Picture of *R. copallina*
Juglans nigra L. (Black walnut) Picture of *J. nigra*
J. cinerea L. (Butternut) Picture of *J. cinerea*

Rhus species have pinnate leaves that are similar to *Ailanthus*

altissima leaves. However, when fruiting, *Rhus spp.* have clusters of reddish, often hairy berries as opposed to the samaras of *Ailanthus altissima*.

The pinnate leaves of *Juglans* species are also similar to the leaves of *Ailanthus altissima*. However, *Juglans* species can also be distinguished from *Ailanthus altissima* by their fruits. The fruits of *Juglans* species are hard-coated green nuts, which are easily distinguishable from the samaras of *Ailanthus altissima* .

REPRODUCTIVE/DISPERSAL MECHANISMS

The primary method of dispersal for *Ailanthus altissima* is by wind. However, the fruits are also light enough to float and could be moved by water.

DISTRIBUTION

Ailanthus altissima is native to central China. In the United States, it is found in all states except Alaska, Idaho, Michigan, Wyoming, Nevada, North Dakota, South Dakota and Minnesota. This tree has been reported in all northeastern states as well as Canada.

HISTORY OF INTRODUCTION IN NEW ENGLAND

Ailanthus altissima was brought to England from China in 1751. It was then introduced into the United States in Philadelphia, Pennsylvania in 1784 by a gardener named William Hamilton. By 1840 it was being sold by nurseries for its foliage. The first Connecticut record was in 1856. It has been used extensively for plantings in cities because of its rapid growth and resistance to air pollution. It is from these city plantings that this plant has escaped and extended its range not only into New England, but into the majority of the country.

HABITATS IN NEW ENGLAND

Abandoned Field
Agricultural Field
Coastal Beach or Dune
Early Successional Forest
Edge
Roadside
Vacant Lot
Yard or Garden

Ailanthus altissima can be found in a variety of habitats, such as disturbed urban areas, alleys, along sidewalks, along streets, fields, fencerows, woodland edges, forest gaps, and agricultural fields.

THREATS

Because of its rapid growth *Ailanthus altissima* can easily displace some native vegetation. It also produces toxins that can prevent the establishment of other plant species. The root system of the plant can cause damage to sewers and foundations. When cut down this tree can produce suckers and stump sprouts. A single tree can produce 325,000 wind dispersed seeds a year. The sap of this species may cause myocarditis (inflamation of the heart tissue) if it is internalized (Bisognano *et al*. 2005).

MANAGEMENT LINKS

The Connecticut Invasive Plant Working Group Invasive Plant Management Guide
Comprehensive management information.

The Nature Conservancy

Plant Conservation Alliance fact sheet
Includes management information.

DOCUMENTATION NEEDS

Documentation required: Photograph of habit, inflorescence.
Best time for documentation: Summer, fall.

ADDITIONAL INFORMATION

Integrated Taxonomic Information System
Taxanomic information.

PLANTS database
Distribution information and additional links.

Plant Conservation Alliance
Fact sheet

Virginia Native Plant Society
Fact sheet

Virginia Department of Conservation and Recreation
Fact sheet

Virginia Tech Dendrology
Basic description and pictures

National Invasive Species Information Center
General information and many more links

Conservation New England
History and general information from Massachusetts

USDA Forest Service
History and general information

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DATA RETRIEVAL

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MAPS OF PLANT DISTRIBUTION IN NEW ENGLAND

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