Melia azedarach 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Sapindales	Meliaceae

Common name

persischer Flieder (German), Persian lilac (English), chuan liang zi (Chinese), indischer Zedrachbaum (German), lilas des Indes (French), syringa berrytree (English), Sichuan pagoda-tree (English), arbre à chapelets (French), umbrella tree (English), amargoseira-do-Himalaio (Portuguese), sendan (Japanese), pride-of-India (English), white cedar (English), Indian lilac (English), jazmin (Spanish), margosa tree (English), bakain (English, Fiji), tira (English, Cook Islands), 'inia (English), para'isu (English, Guam), paraíso (Spanish), dake (English), sili (English), sita (English, Tonga), tili (English, Niue), lelah (English, Pohnpei), melia (Spanish), prais (English, Yap), alelaila (English, Puerto Rico), chinaberry (English), 'ilinia (English, Hawaii)

Synonym

Melia japonica , var. *semperflorens* Makino
Melia azedarach , var. *japonica* (G. Don) Makino
Melia toosendan , Siebold & Zucc.
Melia australis , Sweet
Melia sempervirens , Sw.
Azedarach amena , Raf.
Azedarach deleteria , Medik.
Azedarach sempervirens , Kuntze forma *incisodentata* Kuntze
Azedarach sempervirens , Kuntze forma *subdentata* Kuntze
Azedarach sempervirens , Kuntze forma *longifoliola* Kuntze
Azedarach sempervirens , Kuntze
Azedarach sempervirens , Kuntze var. *glabrior* Kuntze
Azedarach sempervirens , Kuntze var. *dubia* (Cav. ex M.Roem.) Kuntze
Azedarach sempervirens , Kuntze forma *typica* Kuntze
Azedarach sempervirens , Kuntze var. *australasica* (Juss.) Kuntze
Azedarach sempervirens , Kuntze forma *squamulosa* (C.DC.) Kuntze
Azedarach sempervirens , Kuntze forma *arguta* (DC.) Kuntze
Azedarach sempervirens , Kuntze forma *sambucina* (Blume) Kuntze
Azedarach speciosa , Raf.
Melia angustifolia , Schumach.
Melia arguta , DC.
Melia australasica , Juss.
Melia azedarach , L. var. *sempervirens* L.
Melia azedarach , L. var. *subtripinnata* Miq.
Melia azedarach , L. var. *glabrior* C.DC.
Melia azedarach , L. forma *umbraculifera* (G.Knox) Rehder
Melia azedarach , L. var. *umbraculiformis* Berckmans & L.H.Bailey
Melia azedarach , L. subvar. *intermedia* Makino
Melia azedarach , L. var. *squamulosa* C.DC.
Melia azedarach , L. var. *incisa* Miq.
Melia azedarach , L. var. *umbraculifera* G.Knox
Melia azedarach , L. var. *japonica* (G.Don) Makino
Melia azedarach , L. var. *cochinchinensis* (Pierre) Pellegr.
Melia azedarach , L. var. *sambucina* (Blume) Miq.
Melia azedarach , L. var. *australasica* (Juss.) C.DC.
Melia azedarach , L. var. *javanica* Koord. & Valeton
Melia azedarach , L. forma *albiflora* Makino
Melia azedarach , L. var. *glandulosa* Pierre
Melia azedarach , L. var. *biglandulosa* Pierre ex Pellegr.
Melia azedarach , L. var. *intermedia* (Makino) Makino
Melia azedarach , L. subvar. *semperflorens* (Makino) Makino
Melia azedarach , L. var. *acuminatissima* Miq.
Melia azedarach , L. var. *floribunda* (Carri&#65533;re) Morren
Melia birmanica , Kurz
Melia bogoriensis , Koord. & Valeton
Melia candollei , Juss.
Melia cochinchinensis , M.Roem.
Melia commelinii , Medik.
Melia composita , Willd.
Melia composita , Willd. var. *cochinchinensis* Pierre
Melia dubia , Cav. ex M.Roem.
Melia azedarach , L. var. *umbraculifera* Knox
Azedarach vulgaris , M.Gómez
Melia floribunda , Carri&#65533;re
Melia florida , Salisb.
Melia guineensis , G.Don
Melia hasskarlii , K.Koch
Melia japonica , G.Don var. *squamulosa* C.DC.
Melia japonica , G.Don var. *semperflorens* Makino
Melia japonica , G.Don
Melia japonica , Hassk.
Melia javanica , M.Roem.
Melia orientalis ,M.Roem.
Melia robusta , Roxb. ex G.Don
Melia sambucina , Blume
Melia superba , Roxb.
Antelaea javanica , Gaertn.

Similar species

Meliaceae

Summary

Melia azedarach is a tree of the mahogany family that is native to Australasia and often planted as an ornamental shade tree. It invades along roadways, fencerows and other disturbed areas. Melia azedarach has also been found in upland grasslands, woodlands, pastures and riparian areas. Melia azedarach requires open sun, but adapts to a wide range of soil moisture conditions. It grows between sea level and 700 metres in open dry habitats and is highly resistant to insects and other pathogens. It produces much fruit, which is consumed by birds that disperse the seeds. Melia azedarach also reproduces vegetatively by forming root suckers, which allows it to spread and form dense, thickets.

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Species Description

M. azedarach is described as a small to medium-sized shrub or tree in the mahogany family (Meliaceae). Branches are stout, with purplish bark dotted with buff-coloured lenticels. Leaves are twice to three-times compound, alternate, and puberulent to glabrous. Leaflets are 2-8cm long, serrate or crenate, dark green above, often with sparse hairs along the veins, and lighter green and generally smooth below. The inflorescence is a panicle from leaf axils and from leafless nodes on the lower part of the new growth. The perfect flowers are 5-parted. Sepals are green, 1.5-2mm long. Petals are pinkish lavender, ligulate, 1-1.3cm long. Stamens are united into a cylindrical, dark purple tube, 6-8mm long, and cut at the apex into 15-25 slender teeth. Each flower has ten anthers. Flowers are fragrant. (Batcher, 2000) states that the fruit is a stalked, one-seeded drupe that is greenish yellow to yellowish tan, globose, and 1-1.5cm in diameter (Burks 1997).

Notes

Batcher (2000) states that the fruits are poisonous to humans and to some other mammals. *M. azedarach* has a shallow root system, generally within the top 70cm of the soil, and allocates most of its photosynthate into aboveground shoots (Toky and Bisht 1993, in Batcher 2000).

Lifecycle Stages

Batcher (2000) notes that *M. azedarach* seeds are highly tolerant to desiccation, surviving to 3.5% moisture content. The seeds can remain viable for prolonged periods--up to at least 26 months (Hong and Ellis 1998, in Batcher 2000).

Uses

Batcher (2000) notes that *M. azedarach* is often planted as an ornamental shade tree. It has also been used as an abortifacient, an antiseptic, a purgative, a diuretic, an insect repellent, etc. (HerbWeb 2000, in Batcher, 2000).

Habitat Description
Batcher (2000) states that *M. azedarach* invades along road rights of way, fencerows, and other disturbed areas. It has also been found in upland grasslands, woodlands, and riparian areas in the southeastern U.S. (Randall and Rice, unpublished, in Batcher 2000) and in southwestern Africa (Everett *et al.* 1989, Henderson and Musil 1984, in Batcher, 2000). PIER (2003) states that it grows between sea level and 700m in open dry habitats. It favours old fields, abandoned lots, roadsides, and other disturbed areas (C.W. Smith 1985, in PIER 2003). *M. Azedarach* has begun to invade relatively undisturbed floodplain hammocks, marshes, and upland woods in Florida (Langeland and Burks 1998). In Texas, riparian woodlands and upland grasslands have also been extensively invaded (Randall and Rice, unpublished, in Batcher 2000). In Hawai'i, it is naturalized in dry, disturbed areas, especially gulches and pastures to 610m elevation (Wagner *et al.* 1999). In Fiji, it is cultivated or sparingly naturalized at low elevations (Smith 1985, in PIER 2003). Batcher (2000) states that based on general descriptions of habitat, it is likely that *M. Azedarach* requires open sun, is not shade tolerant, and is adapted to a wide range of soil moisture conditions. It is highly tolerant of heat and drought (Time Life Plant Encyclopedia Virtual Garden 1999, in Batcher 2000).

Reproduction
Batcher (2000) states that *M. azedarach* has a high degree of reproductive vigor. It flowers and fruits when it reaches the size of a shrub. Fruits are long maturing, large in number, and persist past leaf fall. It is a prolific seed producer, and birds readily disperse them. It also reproduces vegetatively by forming root suckers. Batcher (2000) states *M. azedarach* can reach 6-8 metres in height within four or five years. Maximum height can be 12-16 metres.

Nutrition
Melia azedarach is highly tolerant of poor soil conditions (Time Life Plant Encyclopedia Virtual Garden 1999, in Batcher 2000).

General Impacts
Batcher (2000) states that *M. azedarach* can invade disturbed and relatively undisturbed areas, and by doing so, it can decrease native biodiversity. It has numerous defenses against insects and other plant pathogens, giving it a competitive advantage over many native species (Nardo *et al.* 1997, Neupane 1992, Vallardes *et al.* 1997, in Batcher 2000). Its leaf litter can increase the pH of soils and add nitrogen, significantly altering soil chemistry (Noble *et al.* 1996, in Batcher 2000). Leaf litter of *M. azedarach* was also effective in reducing aluminum levels in soil (Noble *et al.* 1996, in Batcher 2000). Decaying leaf litter can enhance the soil concentration of mineralizable nitrogen by an amount comparable to nitrogen-fixing legumes (Singh *et al.* 1996, in Batcher 2000). This invasive plant can also successfully reproduce vegetatively, forming dense thickets (Langeland and Burks 1998). These characteristics have contributed to its establishment throughout much of the southeastern United States, where it negatively affects native populations of plants and animals.

Management Info
Preventative measures: A Risk Assessment of *Melia azedarach* for Hawai'i and other Pacific islands was prepared by Dr. Curtis Daehler (UH Botany) with funding from the Kaulunani Urban Forestry Program and US Forest Service. The alien plant screening system is derived from Pheloung *et al*. (1999) with minor modifications for use in Pacific islands (Daehler *et al.* 2004). The result is a score of 14 and a recommendation of: \"Likely to cause significant ecological or economic harm in Hawai'i and on other Pacific Islands as determined by a high WRA score, which is based on published sources describing species biology and behaviour in Hawai'i and/or other parts of the world.\"
If *M. azedarach* is controlled during the early stages of establishment, the potential for successful management is high. The potential for large-scale restoration of wildlands where it has already become established, however, is probably lower due to requirements for longer-term efforts. The best control of *M. azedarach*, as reported by land stewards/managers, occurs with the appropriate use of chemical methods.
Chemical: In an article describing herbicide control measures for many of the invasive exotic species in Florida, Kline and Duquesnel (1996) recommend the following methods, herbicides and equipment, for the chemical control of *M. azedarach*. For basal bark treatments (which can be applied to a range of stem sizes, from saplings to large trees) the use of 10% Garlon 4 is recommended. A back-pack sprayer, spray gun or a hand-held spray bottle can be used for application. For cut-surface treatment (which could be tree-injection, girdle (frill) method or a cut stump treatment) the use of 50% Garlon 3A is recommended. Back-pack sprayers or pump-up sprayers are suitable for cut-surface treatments. For foliar spray 1% (high volume) Garlon 3A is recommended. The authors report that the effectivness of the basal bark and cut-surface treatments are 'excellent' and that of the foliar spray is 'good'.
Mechanical: The authors of a study into the clonal strategies of *M. azedarach* state that injury to the plant, by animal-mediated injury at a local scale or by fire on a large scale induced prolific resprouting - thus increasing the density and spread of the species. The authors demonstrate that excised roots initiate the development of adventitious buds and suckers (Tourn *et al.* 1999).

Pathway
As noted earlier, this species has been introduced in new ranges as an ornamental shade tree. In North America it was introduced around 1830 as an ornamental in South Carolina and Georgia (Gordon and Thomas 1997, in Langeland and Burks 1998).Batcher (2000) states that in the New World it is commonly cultivated as a shade or reforestation tree.

Principal source: Batcher, 2000. Element Stewardship Abstract for *Melia azedarach*
Langeland, K.A. and Burks, K. C (Eds) 1998. Identification and Biology of Non-Native Plants in Florida's Natural Areas, University of Florida. *Melia azedarach*
PIER (Pacific Island Ecosystems at Risk) 2003. *Melia azedarach*.

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

Review: K. C. Burks, Florida Natural Areas Inventory, Florida State University, Tallahassee, FL, USA

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ALIEN RANGE

[1] ANGUILLA
[1] ATLANTIC - WESTERN CENTRAL
[1] BOLIVIA
[5] COOK ISLANDS
[1] ECUADOR
[7] FRENCH POLYNESIA
[2] ARGENTINA
[1] BERMUDA
[1] CENTRAL AMERICA
[1] DOMINICAN REPUBLIC
[2] FIJI
[1] GUADELOUPE

[1] GUAM
[1] ITALY
[1] MARTINIQUE
[1] MEXICO
[1] NAURU
[1] NIUE
[3] NORTHERN MARIANA ISLANDS
[1] PITCAIRN
[1] REUNION
[2] SAINT HELENA
[1] SOUTH AMERICA
[3] TONGA
[1] URUGUAY
[1] HONG KONG
[1] KIRIBATI
[1] MAYOTTE
[4] MICRONESIA, FEDERATED STATES OF
[1] NEW CALEDONIA
[1] NORFOLK ISLAND
[2] PALAU
[1] PUERTO RICO
[1] SAINT BARTHELEMY
[2] SOUTH AFRICA
[1] SWAZILAND
[19] UNITED STATES
[1] VIRGIN ISLANDS, U.S.

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