Caesalpinia decapetala 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Fabales	Fabaceae

Common name thorny poinciana (English), bois sappan (French), Arrete-boeuf (English), Mysore thorn (English), mubage (English), mauritiusdoring (Afrikaans), kraaldoring (English), ulozisi (Zulu, South Africa), caniroc (English), ufenisi (Zulu), Mauritius thorn (English), puakelekino (English, Hawaii), cat's claw (English), liane croc chien (English), wait-a-bit (English), kraaldoring (Afrikaans), shoofly (English), ubobo-encane (Zulu)

Synonym
Biancaea decapetala , (Roth)
Reichardia decapetala
Caesalpinia decapetala , var. *japonica* (Sieb. & Zucc.)
Caesalpinia sepiaria , Roxb.
Biancaea sepiaria , (Roxb.) Todaro
Reichardia decapetala , Roth
Biancaea sepiaria , (Roxb.) Tod.

Similar species *Caesalpinia subtropica, Caesalpinia scortechinii*

Summary Mysore thorn (Caesalpinia decapetala) originates from tropical and eastern Asia but is now a serious weed in many locations such as South Africa, Tanzania, Zimbabwe, Hawaii, Portugal, New Zealand and Norfolk Island. It has become a major invasive plant in South Africa and Hawaii, where it has the capability to take over large areas of agricultural land, limiting animal movement. This sprawling, thorny and noxious shrub also invades forest margins, smothering native vegetation.

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Species Description
This robust thorny evergreen shrub grows from two to four meters high or climbs to 10 meters or higher. It often forms dense thickets. The stems are covered with minute golden-hair and thorns which are straight or hooked, numerous and not in regular rows or confined to nodes. The leaves are dark green, paler underneath, not glossy, up to 30 cm long with leaflets up to 8 mm wide. The flowers are pale yellow in elongated erect clusters 10 cm to 40 cm long. Fruits are brown woody pods, flattened, unsegmented, smooth, sharply beaked at apex, about 8 cm long (PIER 2002).

Notes
The genus *Caesalpinia* contains more than 100 species, occurring in tropical and temperate regions worldwide. Seventeen species are reported from China, occurring primarily in the southwest and north (Hao *et al*. 2004).

Uses
Caesalpinia decapetala is used as a landscaping plant as a hedge or an ornamental in China and elsewhere. The bitter tasting stems and roots can be used medicinally, while other parts of the plant are useful in the chemical industry (Hao *et al*. 2004). The fruits and bark are rich in tannin. With an oil content of 35 percent, the seeds serve as a source of lubricant and soap (Hao *et al*. 2004).

Habitat Description
Caesalpinia decapetala occurs on bushy hillsides, uplands, and along streams in temperate and tropical regions (Hao *et al*. 2004).*C. decapetala* invades forest margins and gaps, plantations, roadsides and watercourses (PIER 2002). In South Africa *C. decapetala* invades riverine habitats, forest margins, savanna and timber plantations (South African National Parkes Undated). Altitudinal range is from 0 to 1500 meters (Wildy, E. pers. comm. 2004). In the Pacific, the plant is confined to dry to mesic lowland habitats (PIER 2002). In South Africa *C. decapetala* is commonly found in areas that receive between 750mm and 1000mm of rain per annum (E. Wildy pers. comm. 2004).

Reproduction
The medium-sized seeds may be dispersed by rodents and granivorous birds, but man is almost certainly the principal dispersal agent in Hawaii (PIER, 2002). Trailing branches root where they touch the ground (WESSA, 2004). The seed is spread considerable distances by running water (Starr *et al.* 2003). It is thought that in Maui the introduction may have been the result of seeds in mud on large machinery used to do road work on the Hana Hwy. (Starr *et al.* 2003).

General Impacts
Caesalpinia decapetala has a thorny smothering habit which can reduce flora and fauna habitat through forming dense monocultures. This can create a habitat for introduced pests (such as foxes, cats and rabbits in Australia). Thorns on the plant can injure wildlife and restrict access for livestock. The weed can damage fences, sheds, road signs and other infrastructure (NSW North Coast Weeds Advisory Committee 2009). \r\n\r\n
Ecosystem change (NSW North Coast Weeds Advisory Committee 2009):\r\n*C. decapetala* is capable of growing in a range of environments and soil types. Infestations alter natural ecosystems through light reduction, smothering and prevention of germination of native seedlings.\r\n\r\n
Modification of Hydrology: *C. decapetala* prefers to grow along water courses, where it forms dense thickets. These thickets restrict water flow, access to water and the movement of flood debris, which leads to increased flood damage (NSW North Coast Weeds Advisory Committee 2009). Infestations of *C. decapetala* scramble over riparian vegetation and are believed to greatly accelerate water loss by evapo-transpiration (South African National Parks Undated).\r\n\r\n
Reduction in native biodiversity (South African National Parks Undated): *C. decapetala* out-shades indigenous vegetation causing trees to collapse.\r\n\r\n
Economic (NSW North Coast Weeds Advisory Committee 2009): *C. decapetala* is a thorny plant capable of climbing and engulfing native vegetation, fences, road signs, sheds, bridges and other infrastructure. The growth and spread of *C. decapetala* restricts access to forest, roadside and riparian areas, reducing aesthetic value and potentially seriously injuring people. For these reasons it may impact tourism assets.\r\n\r\n
Agriculture (NSW North Coast Weeds Advisory Committee 2009): Beef cattle farmers and other agricultural industries may be impacted. *C. decapetala* smothers pasture lands, limits livestock movement and machinery and may damage infrastructure such as fences. The long spines of *C. decapetala* may inflict serious injury to animals.

Management Info
Preventative measures: A Risk Assessment of *Caesalpinia decapetala* for Hawaii and the Pacific was prepared by Dr. Curtis Daehler (UH Botany) with funding from the Kaulunani Urban Forestry Program and US Forest Service. The result is a score of 20 with the weed likely to cause significant ecological or economic harm in Hawaii and on other Pacific Islands.\r\n
Chemical: Possible control methods include helicopter foliar, ground foliar, cut stump and basal bark (Starr Starr & Loope 2003). Foliar spray, while costly, may be the best way to treat plants due to the numerous thorns and thicket like structure that would make basal bark or cut stump treatments difficult (Starr Starr & Loope 2003). Metsulfuron methyl based herbicides are currently registered for the control of *C. decapetala*. The herbicide should be applied when the weed is actively growing (before flowering) and should be used with a wetting agent (Rolles Undated). *C. decapetala* is also sensitive to foliar applications of glyphosate and triclopyr and to soil applications of tebuthiuron. Adequate coverage of *C. decapetala* foliage in dense infestations is difficult. Timely repeat applications (3-9 months) of triclopyr ester at 113.4grms/acre (0.25 lb/acre) allows gradual reductions and opening of the canopy and eventual control. This strategy not only stresses the *C. decapetala* over a longer period but also controls newly germinated seedlings. Accessible stems may be basal bark treated with triclopyr ester at 20% product in diesel or crop oil in very low volume applications (PIER 2002).\r\n
Physical control: *C. decapetala* is extremely prickly, and attempts at physical control must be done carefully. Molokai Invasive Species Committee (MoMISC) has targeted *C. decapetala* for eradication and is experimenting with control methods. Heavy machinery would not be an option in Hawaiian gulch due to steep and difficult terrain (Starr Starr & Loope 2003).\r\n
Biocontrol (Hill Klein & Williams 2002; Kalibbala 2009): Several surveys have been conducted in the weeds native range for phytophagous insects. Two species have been evaluated for biological control, a leaf-mining gracillariid moth (*Acrocercops hyphantica*) - which was rejected because it was not host specific - and the seed-eating weevil (*Sulcobruchus subsuturalis*) which was released in South Africa from 1999 onwards. The female weevil lays her eggs on the mature seeds and the larvae develop inside the seeds (Hill Klein & Williams 2002). The first post-release evaluation of the efficacy of the weevil (see Kalibbala 2009) found that the weevil was not well established at study sites and that weed seedling recruitment was high. *S. subsuturalis* had failed to maintain high populations on the target weed, possibly due to weevil egg predation by native ants and attacks by native parasitoids. The author recommendeds continuing to release *S. subsuturalis* using improved strategies (see Kalibbala 2009).\r\n
Integrated Pest Management: In terms of cultural control the residents of Hawaii could be discouraged from planting or spreading *C. decapetala*. Machinery and gear should be cleaned, especially if working in areas of *C. decapetala*. A substantial number of non-weedy alternative species are currently available for use as replacement species for street and garden plantings (NSW North Coast Weeds Advisory Committee 2009).\r\n
Legislative In terms of noxious weed acts *C. decapetala* is currently not on the Hawaii state noxious weed list, but is a good candidate for listing. *C. decapetala* is declared a noxious weed in South Africa (PIER 1999). It is also listed as a weed by the following three sources: Greening Australia project, University of Hawaii Botany Department, and Department of Land and Natural Resources.

Pathway
Seeds from *Caesalpinia decapetala* can contaminate agricultural produce and remain viable in the soil for up to 10 years and hence farmers, rural distributors and local weed control authorities need to promote and guard against its transportation (NSW North Coast Weeds Advisory Committee 2009).*Caesalpinia decapetala* was first introduced by ranchers for fencing (Starr *et al*. 2003) and missionaries who planted it to keep out wild animals (WESSA 2004).

Principal source: Pacific Islands Ecosystems at Risk, 2002. *Caesalpinia decapetala*

Compiler: IUCN/SSC Invasive Species Specialist Group (ISSG)
Updates under progress with support from the Overseas Territories Environmental Programme (OTEP) project XOT603, a joint project with the Cayman Islands Government - Department of Environment

Review: Eden Wildy. Alien Invader Plants Project. Wildlife & Environment Society of SA. South Africa.

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ALIEN RANGE

[3] AUSTRALIA
[1] DOMINICA
[1] FRENCH POLYNESIA
[1] KENYA
[1] MAURITIUS
[1] NEW ZEALAND
[1] REUNION
[1] SAINT VINCENT AND THE GRENADINES
[1] SWAZILAND
[1] BARBADOS
[1] FIJI
[1] GUADELOUPE
[1] MARTINIQUE
[1] NEW CALEDONIA
[1] NORFOLK ISLAND
[1] SAINT LUCIA
[2] SOUTH AFRICA
[7] UNITED STATES

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