FULL ACCOUNT FOR: *Mimosa pudica*

**System:** Terrestrial

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
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<tbody>
<tr>
<td>Plantae</td>
<td>Magnoliophyta</td>
<td>Magnoliopsida</td>
<td>Fabales</td>
<td>Fabaceae</td>
</tr>
</tbody>
</table>

**Common name**

cogadrogadro (English, Fiji), co gadrogadro (English, Fiji), tottalavaadi (Tamil), vao tuitui (Samoa), touch-me-not (English), shameplant (English), attaapatti (Telugu), shamipatra (Sanskrit), pikika'a (English, Aitutaki Atoll), marie-honte (English), action plant (English, Australia), shameweed (English, Australia), ngandrongandro (English, Fiji), morivivi (English), shamebush (English, Australia), mimosa (English, Australia), sensitive plant (English), limemeirh (English, Pohnpei Island), vergonzosa (English, Australia), humble plant (English, Australia), rakau pikika'a (English, Rarotonga Island), tita pikika'a (English, Cook Islands), dormidera (English), live and die (English, Australia), betguen sosoa (English, Guam), pope ha'avare (English, Society Islands), chuimui (Hindi), samangaa (Sanskrit), sensitive grass (English), Kruidje-roer-me-niet (Dutch), lazza bati (English, Bangladesh), rakau 'avarevare (English, Ngaputoru Island), rakau pikika'a (English, Mangaia Island), tita 'avarevare (English, Miti'aro Island), Sinnpflanze (German), mechiuaiu (English, Palau), mayhont (English), honteuse (English), reesamani (Gujarati), Almindelig mimose (Danish), lajavathi (Bengali), laajak (Bengali), Gemeine Mimose (German), tuntokasvi (Finnish), sensitive (French), Raktapaadi (Sanskrit), tita ‘avarevare (English, Ma’uke Island), muttidare muni (Kannada), lajavanthi (Hindi), namaskaar (Sanskrit), sensitiva (Spanish), lajouni (Hindi), Lajialu (Hindi), laajari (Marathi), laajaalu (Sanskrit), thoehe jegri (English, India), khadiraka (Sanskrit), sleeping grass (English), ti mawi (English), tuitui (English, Samoa), memege (English, Niue), puteri malu (English, Brunei), mateoloi (English, Tonga), tho ngandrongandro (English, Fiji), vao fefe (English, Samoa), lajalu (English, India), shamelady (English, Australia), la'au fefe (English, American Samoa/Samoa), dorme (English), pua hilahila (English, Hawaii), togop-togop (English, Sabah, Malaysia), tho kandrodandro (English, Lau Island), lajja (English, India), paope 'avare (English, Ngaputoru Island), pikika'a (English, Palmerston (Avarau) Island), rakau 'avare (English, Atiu Island), tiape pikika'a (English, Cook Islands)
Summary

Mimosa pudica is native to South America, but has become a pantropical weed. It was introduced to many countries as an ornamental plant and is still widely available for sale. Mimosa pudica has become a pest in forest plantations, cropland, orchards and pasture. Mimosa pudica is used as a medicinal plant in many regions.

Species Description

*Mimosa pudica* is a more or less prostrate creeper; with cylindric stems reddish-brown, prickly; leaves immediately fold by pulvini if touched or jarred; pinnae 4, often reddish; leaflets 12-25 pairs, linear, acute, bristly; 9-12mm long, 1.5mm wide; flowers pink, in globose heads, nearly 1cm in diameter, axillary, peduncle up to 2.5cm long; pods crowded, flat, prickly-bristly, indented between the few (2-4) seeds, to nearly 2cm long; seeds about 2mm broad, rounded, brown (Stone, 1970; in PIER, 2005; CSIS, undated). It may reach up to 1 metre in height, although it usually grows 15-45cm high (CSIS, undated; Francis, undated; Land Protection, 2006). It is described variously as an annual, biennial or perennial plant (Wu et al., 2003; USDA, 2006; PIER, 2005).

Notes

When touched, an *Mimosa pudica* plant quickly folds its leaflets and pinnae and droops downward at the petiole attachment. The leaves also droop at night, and when exposed to rain or excessive heat. This response may be a defense against herbivorous insects, leaching loss of nutrients, or desiccation (Francis, undated).

*M. pudica* has been identified as having potential for phytoremediation of arsenic polluted areas in Thailand (Visoottiviseth et al., 2002).

Lifecycle Stages

In Puerto Rico, *M. pudica* plants live 1 to 2 years. Seedlings grow slowly for 2 or 3 months and then accelerate, reaching 0.5 to 2m of extension at the end of the first year. Growth of plants that survive into the second year is much slower. Potted and fieldgrown individuals are sensitive to overwatering (Bui, 2001). This species has been successfully tested and recommended for erosion control plantings using potted material at a spacing of 60 x 60cm (Coimbra and Magnanini, 1953) (all from Francis, undated).

In China, the flowering season from March to October, with fructescence from May to November (CSIS, undated).
Uses
The seeds and other plant parts of *M. pudica* contain mimosine, and extracts of the plant have been shown in scientific trials to be a moderate diuretic, depress duodenal contractions similar to atropine sulphone, promote regeneration of nerves, and reduce menorrhagia. Antidepressant activity has been demonstrated in humans (Martínez *et al.*, 1996). Root extracts are reported to be a strong emetic (Guzmán, 1975) (all from Francis, undated). *M. pudica* is used as a part of traditional medicine in SE and S Asia (Biswas and Mukherjee, 2003; Amitendu *et al.*, 2004; Rajan *et al.*, 2002; Ahmad and Holdsworth, 2003). See [here](http://www.iucngisd.org/gisd/species.php?sc=1002) for details on the ethnobotanical uses of *M. pudica*.

*M. pudica* is also a popular ornamental plant, as its leaves will fold up when stimulated by touch, heat or wind (Whatcom Seed Company, 2006; GRIN, 2006), and is also used for soil improvement (GRIN, 2006).

Habitat Description
*Mimosa pudica* occurs in croplands, orchards, pastures, mowed areas, roadsides, areas disturbed by construction, moist waste ground, open plantations, and weedy thickets (PIER, 2005; Francis, undated). It may grow as a single plant or in tangled thickets. *M. pudica* grows from near sea level up to 1,300m in elevation (Holm *et al.*, 1977; in Francis undated) and in areas with annual precipitations from about 1000 to over 2000mm. It is frost-sensitive (Francis, undated).

*M. Pudica* is shade intolerant and does not compete with tall vegetation or grow under forest canopies. The species' roots produce carbon disulfide, which selectively inhibits colonization of the rhizosphere by mycorrhizal and pathogenic fungi (Feng *et al.*, 1998; in Francis, undated). *M. Pudica* is primarily found on soils with low nutrient concentrations, as it is probably outcompeted on richer soils (Magda *et al.*, 2006). It grows on most welldrained soils, even scalped or eroded subsoils. It requires disturbed soils to establish itself. Repeated burning may encourage its spread in pastures (Siregar *et al.*, 1990; in Francis, undated).

Reproduction
In the Philippines, *Mimosa pudica* flowers all year round, and may produce as many as 675 seeds per plant per year (Holm *et al.*, 1977). The species is both wind (Chieng and Huang, 1998) and bee-pollinated (Payawal *et al.*, 1991). Air-dry seeds from Puerto Rico weighed an average of 0.0065 ± 0.0002 g/seed. Seeds are transported by means of the bristles on the edges of their pods that cling to clothing or to the fur of mammals (Francis, undated).
General Impacts
*Mimosa pudica* forms a dense ground cover, preventing reproduction of other species (PIER, 2005). It has become a serious weed in fields of corn, soybeans, tomatoes, upland rice, coconut, bananas, sugarcane, coffee, oil palms, papayas, coconuts, and rubber in many tropical areas. It is particularly troublesome where hand pulling of weeds is practiced, as its thorns can cause painful wounds. On the other hand, it is tolerated or valued as a forage plant in pastures (Holm *et al*., 1977; Turbet and Thuraisingham, 1948; in Francis, undated). In fact, sheep grazing is reported to control *M. pudica* in pastures and plantations (Simonnet, 1990; in Francis, undated). The root nodules have been shown to fix nitrogen (Pokhriyal *et al*., 1990; in Francis, undated). Thickets of *M. pudica* may be a fire hazard when dry (PIER, 2005).

Management Info
Preventative measures: A Risk assessment of *Mimosa pudica* for the Pacific region was prepared by Pacific Island Ecosystems at Risk (PIER) using the Australian risk assessment system (Pheloung, 1995). The result is a score of 18 and a recommendation of rejection for import into Australia.

A Risk assessment of *Mimosa pudica* for Florida was prepared by Gordon *et al* 2008. The result is a score of 17 and a recommendation of rejection for import into Florida.

Physical: Hand weeding is difficult due to the presence of thorns and a woody root (Wagner, 1983; in PIER, 2005). Repeated burning may in fact encourage the spread of *M. pudica* in pastures (Magda *et al*., 2006).

Chemical: It is susceptible to several herbicides, including dicamba, glyphosate, picloram and triclopyr (Parsons and Cuthbertson, 1992). Very sensitive to picloram (0.25 lb/acre), sensitive to triclopyr. Dicamba and 2,4-D poor. Soil applied tebuthiuron effective (Motooka *et al*., 2002) (all from PIER, 2005).

In pasture situations, dicamba and fluroxypyr can be used to control *M. pudica*. Thorough wetting of all leaf surfaces is essential. If plants are disturbed before spraying, the leaves will fold up and the herbicide will be ineffective. Ensure all spraying is done with forward booms or ahead of operators with knapsack sprayers (Land Protection, 2006).


Coir dust, a waste from coconut processing, can be used as a mulch in pineapple crops to suppress *M. pudica* and other weeds (Van Mele *et al*., 1996). Sheep grazing is reported to control the dominance of *M. pudica* in pasture (Magda *et al*., 2006; Francis, undated).


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

Review:
ALIEN RANGE

[1] CAMBODIA  [34] CHINA
[10] TONGA  [8] UNITED STATES

BIBLIOGRAPHY

46 references found for *Mimosa pudica*

Management information


Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will maintain, manage and enhance the database with current and newly published information, reports, journal articles etc.


Summary: This paper discusses the invasive impacts of *M. pudica* in French Guiana.


Summary: This website provides comprehensive information about weed species in the Pacific, including distribution and management information.


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]


Summary: This article discusses the potential for biological control of weed species.


Summary: This article discusses the potential for biological control of weed species in the Pacific.

General information

Summary: This paper describes the weed plants of rubber plantations in Kerala, India.


Summary: This paper examines the use of plants in traditional medicine in Sabah, East Malaysia.


Summary: This paper provides details about species of the genus Mimosa in Bangladesh.


Summary: This paper describes the species of genus Mimosa which are present in Cuba.


Summary: This paper discusses the biodiversity which can be found in a rice field ecosystem in Sri Lanka.


Summary: This paper provides an assessment of the biodiversity of the Muthurajawela Wetland Sanctuary in Sri Lanka.

Barrington, pers. comm., 2007


Summary: This paper gives details about the vegetation composition in the Rio Bravo Conservation and Management Area in Belize.


Chinese Species Information Service. Undated.


Summary: This paper examines the impacts of the introduced bumblebee Bombus terrestris (Apoidea: Apidae).


Summary: This paper provides details on the vegetation of the small islands near Viti Levu and Ovalau in Fiji.


Summary: This paper examines the impacts of the introduced bumblebee on native vegetation in Tasmania, Australia.


Summary: This paper discusses the state of the Bhadra Wildlife Sanctuary in India.


Summary: This paper outlines the species of Mimosaceae present in Guinea, western Africa.


Summary: This paper discusses the deliberate plant introductions to the USA over the past two centuries.

Meyer, J.-Y. pers. comm., 2007


This website provides a list of common names which are used for M. pudica in a variety of languages. Available from: http://www.plantnames.unimelb.edu.au/Sorting/Mimosa.html [Accessed 17 May 2006]


Summary: This paper details the use of M. pudica as a medicinal plant in Tamil Nadu, India.


Summary: This paper discusses the management of weeds in arable landscapes in southeastern Nigeria.


Summary: This article discusses the use of traditional medicine by the people of the Nilgiri Hills, India.


Summary: This paper discusses the use of plants in traditional medicine in Bangladesh.


Summary: This report provides details about the invasive plant species of the Cook Islands.


Summary: This paper presents an analysis of the invasive plant species which are present in Palau.


Summary: This article provides information about the invasive species in Vietnam's forests.


Summary: This paper outlines the invasive plant species of the Mekong Delta in Vietnam.


Summary: This paper outlines the biodiversity which can be found in the Upper Imbang-Caliban watershed of the North Negros Forest Reserve in the Philippines.


USDA-ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland.

Summary: This database provides basic information on M. pudica.


USDA PLANTS profile. Mimosa pudica.

Summary: This database provides basic information on M. pudica distribution in the USA.


Whatcom Seed Company. 2006.

Summary: This website provides a list of garden plants which can be purchased over the internet.


Summary: This paper provides details on the naturalized members of Fabaceae in Taiwan, including M. pudica.


Summary: This document was produced by WWF Australia, and provides information about invasive and potentially invasive garden plants in Australia.