GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Mimosa diplotricha***

Mimosa diplotricha 简体中文 正體中文 **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Fabales	Fabaceae

Common name wa ngandrongandro levu (English, Fiji), giant false sensitive plant (English), giant sensitive plant (English), wa ngandrongandro ni wa ngalelevu (English, Fiji), co gadrogadro (English, Fiji), nila grass (English), grande sensitive (French), vao fefe palagi (English, American Samoa and Samoa), la'au fefe palagi (English, Samoa), la'au fefe tele (English, Samoa), limemeihr laud (English, Pohnpei), singbiguin sasa (English, Saipan), pikika'a papa'a (Cook Islands), mechiuaiuu (English, Palau), sensitive gèante (French)

Synonym *Mimosa invisa*

Similar species

Summary Mimosa diplotricha (also referred to in the literature as Mimosa invisa) is a serious weed around the Pacific Rim, where it is the subject of several eradication programmes. Early detection and control is recommended to prevent large infestations from establishing.

view this species on IUCN Red List

Species Description

Mimosa diplotricha is a shrubby or sprawling annual vine which may also behave as a perennial. Its stems are bunching, often scrambling over other plants. Additionally, they are distinguished by four-angles, each of which consisting a line of sharp, hooked prickles. Leaves are bright green, feathery and fern-like and are arranged in an alternating pattern, with each leaf divided into five to seven pairs of segments. Each segment carries about twenty pairs of very small leaflets which close up when disturbed or injured and at night (DPIF, 2007).

Notes

Mimosa diplotricha is still often referred to as *Mimosa invisa* in the literature.

Lifecycle Stages

Mimosa diplotricha is an annual which usually flowers and seeds from April (autumn) through to the end of June (mid-winter) in Australia. In years when there has been very little cold weather, plants will seed from April through to December and some plants only 10cm high can set seeds (DPIF, 2007).

Habitat Description

Mimosa diplotricha grows best in tropical regions: high moisture and in highly fertile soils. It is known to thrive under full sunlight conditions. *M. diplotricha* is naturalised in high rainfall areas of coastal north Queensland, Australia (DPIF, 2007).

Reproduction

Mimosa diplotricha produces thousands of seeds (N. Gureja pers. comm. 2003). Seeds have been known to lie dormant for up to 50 years (DPIF, 2007).

General Impacts
Mimosa diplotricha is a major weed of cultivated areas and has the ability to climb over other plants (Schultz 2000). In the Kaziranga National Park in northeast India, the weed forms a thorny mat over the natural vegetation, preventing animals from accessing and utilising natural vegetation (N. Gureja, pers. comm. 2003). In Australia the weed chokes out cane, other crops and grassland, causing crop and pasture loss (DPIF, 2007).

Management Info
Preventative measures: A Risk Assessment of *Mimosa diplotricha* for Hawaii 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 24 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\".
A Risk assessment of *Mimosa diplotricha* for Australia was prepared by Rod Randall. The result is a score of 16 and a recommendation of: reject the plant for import (Australia) or species likely to be a pest (Pacific) (PIER, 2008).
In Australia the best management approach to controlling *M. diplotricha* has been suggested to encompass a variety of different methods, including herbicide use and biological control (DPIF, 2007).
Physical: Hand control is difficult due to spines. Plants can be slashed before seeding occurs. Slashing in pastures and other non-crop situations on a regular basis to prevent seeding provides effective control (DPIF, 2007).
Chemical: Any herbicide that is applied should be done so before seeding occurs. The weed is not susceptible to soil fumigants and short-term residual herbicides, (although it may be temporarily controlled with atrazine, diuron and hexazinone at standard to high rates). It is susceptible to translocated herbicides including sodium arsenite, 2,4-D plus atrazine, fluroxypyr and probably glyphosate at standard rates. In non-grazed infested areas 4.5 mL Starane 200 per litre of water can be used (DPIF, 2007). More details of herbicide application may be found at DPIF, 2007.
Biological: An introduced sap feeding bug, the psyllid *Heteropsylla spinulosa* has been released as a biocontrol agent for *M. diplotricha* in north Queensland, Austalia, in non-crop areas. Releases at Palikir, Pohnpei have also proven effective. (DPIF, 2007, Waterhouse 1994, in PIER 2008). In Australia it is recommended that pastures and non-crop infestations are assessed for insect abundance between November-April. (The effectiveness of insect control can be predicted by abundant insects prior to flowering commencing in early April). If insects are present in sufficient numbers, the growing tips and leaves are curled and stunted, resulting in no or minimal flower production. Slashing or herbicides should be applied if there are not sufficient numbers of insects prior to April for effective control. In pastures grazing animals tend to control this protein rich legume and prevent it dominating. Plants stunted by *Heteropsylla* attack are less spiny and are readily grazed by stock. An isolated strain of the stem-spot disease (*Corynespora cassiicola*) (indigenous to Australia) also appears specific to giant sensitive plant. One study noted that the citheroniid moth (*Psigida walker*) caused a significant extent of defoliation and the subsequent prevention of seeding of *M. diplotricha* in Brazil (Vitellia *et al.*, 2001). However, it was shown that the citheroniid moth lacked the target specificity required as it attacked several native bipinnate *Acacia* species, thus was deemed unsuitable for release (Vitellia *et al.*, 2001).

Pathway
M. diplotricha was imported into India by tea gardeners for enriching the soil as *Mimosa* species are nitrogen fixers. (N. Gurega, Pers. Comm. 2003).*M. diplotricha* seeds are transported by running water, vehicles, machinery, stock and contaminated earth (The Department of Natural Resources, Mines and Water 2006).

Principal source:

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[2] AMERICAN SAMOA
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[1] NIUE
[5] PALAU
[1] PHILIPPINES
[3] SAMOA
[1] THAILAND
[1] VIET NAM

Red List assessed species 1: VU = 1;

Rhinoceros unicornis **VU**

BIBLIOGRAPHY

17 references found for **Mimosa diplotricha**

Managment information

Department of Primary Industries and Fisheries (DPIF) 2006. Pest Series: Giant sensitive plant: *Mimosa diplotricha* (*Mimosa invisa*). The State of Queensland Government.
Summary: Available from: http://www.dpi.qld.gov.au/cps/rde/dpi/hs.xsl/4790_7289_ENA_HTML.htm [Accessed 30 April 2008]

Gureja, N. Personal communication. 16 January 2003. Wildlife Trust of India: www.wti.org.in
Summary: Information for the Wildlife Park in India. Effects and Hazards of the *M diplotricha* invasion.

Information Leaflet 2011. WARNING! The highly destructive invasive, *Mimosa diplotricha* is in Bujumbura!

PIER (Pacific Island Ecosystems at Risk) 2002. *Mimosa diplotricha*.
Summary: Information on reproduction, description, habitat, distribution, and management of *M. diplotricha*.
Available from:http://www.hear.org/pier/species/mimosa_diplotricha.htm [Accessed 11 May 2006]

Saipan Tribune, 2008. Release of bio-control insects to eradicate invasive weed OK d
Summary: Available from: http://www.saipantribune.com/newsstory.aspx?cat=1&newsID=78734 [Accessed 01 May 2008]

Schultz, G.C. 2000. Agnote: Creeping Sensitive Plant. Agricultural Development: Darwin.
Summary: Some distribution, related weeds, description and some control information.

Secretariat of the Pacific Community (SPC). 2005. ACIAR and PPS Collaborate on Plant Protection Research, *Info Newsletter No 55 - January 2005*. Secretariat of the Pacific Community.

Vitelli, M.P., Garcia, C., Lockett, C.J., West, G.M. and Willson, B.W. 2001. Host Specificity and Biology of the Moth *Psigida walkeri* (Lepidoptera: Citheroniidae), a Potential Biological Control Agent for Mimosa diplotricha in Australia and the South Pacific, *Biological Control 22*(1):
Summary: Results of biocontrol host specificity testing of moth *Psigida walkeri*.

General information

Barthelat, F. 2005. Note sur les esp&#65533;ces exotiques envahissantes &#65533; Mayotte. Direction de l&#65533;Agriculture et de la For&#65533;t. 30p
Summary: Tableau synth&#65533;tique des plantes exotiques de Mayotte class&#65533;es en fonction de leur niveau d envahissement.

Conservatoire Botanique National De Mascarin (BOULLET V. coord.) 2007. - *Mimosa diplotricha* Index de la flore vasculaire de la R&#65533;union (Trach&#65533;ophytes) : statuts, menaces et protections. - Version 2007.1
Summary: Base de donn&#65533;es sur la flore de la R&#65533;union. De nombreuses informations tr&#65533;s utiles.
Available from: http://flore.cbnm.org/index2.php?page=taxon&num=50adecfc746426ca10973a067421d0bf [Accessed 9 April 2008]

Gargominy, O., Bouchet, P., Pascal, M., Jaffre, T. and Tourneu, J. C. 1996. Consequences des introductions d'especes animals et vegetales sur la biodiversite en Nouvelle-Caledonie. Rev. Ecol. (Terre Vie) 51: 375-401.
Summary: Consequences to the biodiversity of New Caledonia of the introduction of plant and animal species.

ITIS (Integrated Taxonomic Information System), 2005. Online Database *Mimosa diplotricha*
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=503836 [Accessed 19 June 2006]
MacKee, H.S. 1994. Catalogue des plantes introduites et cultiv�es en Nouvelle-Cal�donie, 2nd edn. MNHN, Paris.
Summary: Cet ouvrage liste 1412 taxons (esp�ces, sous esp�ces et vari�t�s) introduits en Nouvelle-Cal�donie. L auteur pr�cise dans la majorit� des cas si l esp�ce est cultiv�e ou naturalis�e.
Meyer, Jean-Yves & Loope, Lloyd & Sheppard, A. & Munzinger, Jérôme & Jaffré, Tanguy. (2006). Les plantes envahissantes et potentiellement envahissantes dans l'archipel néo-calédonien : première évaluation et recommandantions de gestion.
Meyer, J.-Y. 2000. Invasive plants in the Pacific Islands. In: The Invasive Species in the Pacific: A Technical Review and Draft Regional Strategy. Sherley, G. (tech. ed). Published in June 2000 by the South Pacific Regional Environment Programme (SPREP).
Summary: Resource that includes the distribution of invasive species throughout the Pacific Islands.
Meyer, J.-Y. 2004. Threat of invasive alien plants to native flora and forest vegetation of eastern Polynesia. Pacific Science, 58, 357-375
Summary: Dans cet article, la menace croissante des plantes exotiques envahissantes est discut�e et les esp�ces les plus envahissantes sont d�crites. Des hypoth�ses sur l invasibilit� des �les sont pr�sent�es la lumi�re des observations et des donn�es r�colt�es.
Space, J.C., Waterhouse, B.M., Newfield, M. and Bull, C. 2004. Report to the Government of Niue and the United Nations Development Programme: Invasive Plant Species on Niue following Cyclone Heta.
Summary: Available from: http://www.hear.org/pier/reports/niue_report_2004.htm [Accessed 11 May 2006]