Merremia tuberosa 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Solanales	Convolvulaceae

Common name liane-jaune (French), quinamacal (Spanish), quiebra machet (Spanish), quiebra caje- te (Spanish), bejuco de golondrin (Spanish), foco de luz (Spanish), Ceylon morning glory (English), bara- asa-gao (Japanese), rosa de barranco (Spanish), Brazilian jalap (English), xixcamátic (Náhuatl)

Synonym *Ipomoea tuberosa* , L.
Batatas tuberosa , (L.) Bojer
Operculina tuberosa , (L.) Meisn.

Similar species

Summary *Merremia tuberosa* is a climbing vine that is native to Mexico and parts of central America that has become invasive on various Pacific islands and parts of the United States. The vine overgrows tall hardwood forest canopies and smothers native trees and shrubs. Its population on Niue is reported as especially aggressive.

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Species Description
Merremia tuberosa is a long, climbing vine. Its leaves are simple and the blades are circular in outline, 6-16 cm long and wide, the base is cordate, and margins are palmately 5-7 lobed almost to the base. The lobes are 8-20 cm long, 9-20 cm wide, ovate, 3-9 cm long, 1-5 cm wide, and leaf margins are entire. Its stems are basally woody, perennial, twining, and glabrous. Flowers usually occur in clusters and fully bloom in sunlight and close under cloudy conditions and in the dark. The corolla is yellow, glabrous, funnelform, contortiplicate, enclosed by the sepals in bud, and comprised of 4 petals 5-6 cm long. It has 3 petioles which are 6-18 cm long and glabrous. Its pedicels are 15-18 mm long, claviform, glabrous, and enlarge in fruit. Its sepals are unequal, with the outer two longer than the inner three. They are oval to almost orbicular, with a rounded apex, membranous apically, somewhat herbaceous basally, and 23-25 mm long. Its sepals equally enlarge in fruit. The inner three are oblong, 12-20 mm long. Its filament is unequal, 2.5-3 cm long, glandular, and pubescent. The pistil is glabrous, 4-locular, and the stigma is globose. It has tuberous taproots. The fruits are globose to depressed globose and 3-3.5 cm in diameter. The calyx is accrescent, with fruiting sepals divergent but supporting the fruit. 1-4 seeds occur per fruit and are black to dark-brown, ovoid, 1.5-2 cm long, smooth surfaced, and covered with short, erect, puberulent indumentum (Austin, 1998; Motooka *et al*, 2003).

Lifecycle Stages
Merremia tuberosa is a perennial vine that produces bright yellow morning-glory-like inflorescences in the late fall. Fruits occur abundantly in early winter. By late December and early January die backs occurs. Its seeds remain viable for several years and germinate readily even in conditions of low light (Langland & Stocker, 2001; PIER, 2008).

Uses
The roots of *Merremia tuberose* contain resins that were formerly used across the tropics and in Europe as laxatives. Now plants are grown for their flowers and ornamental fruits that are used by florists. Its grated root was historically found useful for those that have swollen bellies and whose intestines rumble. A mixture was also drunk while fasting, to purge, and to lower fever (Austin, 1998).

Habitat Description
Merremia tuberosa is known to grow in mesic forests from 0-1,400 m elevation. It is a climbing vine that grows over trees or other surfaces and prefers high levels of sunlight. It is also reported to require fertile, well-drained soils (Smith, undated; PIER, 2008).

Reproduction
Merremia tuberosa reproduces primarily through seed production and also by vegetative fragmentation. It produces an abundant seed set in the winter that germinate readily (PIER, 2008; Langland & Stocker, 2001).

General Impacts
Merremia tuberosa is known to overgrow and smother tall hardwood forest canopies. This perennial vine blocks sunlight from trees and the understory, killing native trees and shubs. *M. tuberosa* has been especially problematic on the island of Niue where it has spread quickly and aggressively (Space & Flynn, 2000). It is also reported to be toxic to animals and humans and should not be ingested by either (Smith, undated; PIER, 2005; Motooka *et al*, 2003; Orapa, 2003; Space & Flynn, 2000; Staples 2010).

Management Info
Preventative measures: A Risk Assessment of *Merremia tuberosa* 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 'High Risk' score of 12 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.\"
Chemical: A study evaluated two types of herbicide applied by backpack sprayer for the treatment of *M. tuberosa* in Florida. Garlon 4 at 10% concentration applied to the basal surface of *M. tuberosa* was evaluated to achieve excellent control. Garlon 3A at 50% applied to cut surfaces of *M. tuberosa* achieved good control. Both herbicides are recommended to be applied to cut stems as it is evident which stems were effectively treated and which were missed within a week of application (Kline & Duquesnel, 1996; Langland & Stocker, 2001).
Physical: Seedlings of *M. tuberosa* may be hand-pulled (PIER, 2008). \n
Biological control: The use of a biological control for *M. tuberosa* has been recommended and is being investigated (Dovey *et al*, 2004).

Pathway
Merremia tuberosa was spread through as a medicine throughout Europe when it was discovered in Mexico, and subsequently through horticulture trade around the world. The roots contain resins that formerly were used across the tropics and in Europe as laxatives. Now it is grown and introduced for their flowers and ornamental fruits that are used by florists (Austin, 1998).

Principal source: Austin, Daniel F. 1998. Xixicamatic or wood rose (*Merremia tuberosa*, Convolvulaceae): Origins and dispersal. Economic Botany. 52(4). Oct.-Dec., 1998. 412-422.
Pacific Islands Ecosystems at Risk (PIER), 2008. *Merremia tuberosa* (L.) Rendle, Convolvulaceae
Smith, Clifford W., Undated. Impact of Alien Plants on Hawaiis Native Biota

Compiler: Comité français de l'UICN (IUCN French Committee) & IUCN SSC Invasive Species Specialist Group (ISSG)

Review: Dr. Daniel F. Austin, Center for Sonoran Desert Studies, Arizona-Sonora Desert Museum

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ALIEN RANGE

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[1] INDIA
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[1] MARSHALL ISLANDS
[1] MAURITIUS
[2] MICRONESIA, FEDERATED STATES OF
[1] NIUE
[1] PERU
[1] PUERTO RICO
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[1] SRI LANKA
[1] TAIWAN
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[2] UNITED STATES MINOR OUTLYING ISLANDS
[1] VIRGIN ISLANDS, U.S.
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[1] CHINA
[1] CUBA
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[1] MARTINIQUE
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[1] NEW CALEDONIA
[3] NORTHERN MARIANA ISLANDS
[1] PHILIPPINES
[1] REUNION
[2] SAMOA
[1] SWEDEN
[1] TONGA
[3] UNITED STATES
[1] VENEZUELA

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