Pacific Pests, Pathogens & Weeds - Fact Sheets

https://apps.lucidcentral.org/ppp/

Merremia (446)

Relates to: Weeds

Photo 1. Merremia, *Merremia peltata*, smother 6-10 m tall trees.

Photo 2. Merremia, *Merremia peltata*, as a ground cover at the margins of a forest.

Photo 3. Merremia, *Merremia peltata*, over wild hibuscus and pandanus, aside a road (Fiji).

Photo 4. Massive area of merremia, *Merremia peltata* (Fiji).

Photo 5. Merremia, *Merremia peltata*, leaves, showing the point of attachment on the underside.

Photo 6. Merremia, *Merremia peltata*, flower.

Photo 7. Merremia, *Merremia peltata*, flowers and seeds.

Common Name

Merremia

Scientific Name

Merremia peltata. It is a member of the Convolvulaceae.

Distribution

Restricted. South and Southeast Asia, East Africa, North America (Canada), Oceania. It is recorded from Australia, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Marshall Islands, New Caledonia, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu, and Wallis and Futuna.

It is native to the Malaysia-Indonesia region. Suggestions that it is native to American Samoa, Samoa, Tonga, and Vanuatu are disputed, but it has become naturalised in the South Pacific region.

Invasiveness & Habitat

A very important invasive weed of the humid tropics, from coastal areas up to 700 m where it can dominate bush fallows and forests (Photos 1-4). It becomes especially aggressive in disturbed areas, smothering crops, as well as reaching to the tops of trees in logged forests, forming dense canopies that stifle regrowth.

Description

Merremia produces smooth, climbing vines, from underground tubers, up to 30 m long that twine at the tips. The vines are woody at the base up to 10 cm diameter. Leaves, alternate along the stems, almost round, up to 30 cm across, purple-veined below, with wavy margins and pointed tips; leaf stalk is joined to the blade at the lower surface near the centre (Photo 5). Flowers are funnel-shaped, white (but there are yellow types), 5-6 cm long (Photos 6&7). The seeds are furry, one to four inside a round capsule (Photo 7).

Spread

Spread can be rapid, with vines growing up to 30 cm a day, and new plants forming as root develop from the nodes. Over longer distances spread is by seed, although there are reports of low seed vitality from Solomon Islands. Seeds and cuttings can be transported by machinery. Deliberate introductions occur when the weed is planted as an ornamental, or as a ground cover to protect land from erosion.

Impact

In Solomon Islands, the removal of the tree canopy during logging promotes massive growth of *Merremia*, which has to be removed before replanting can begin, as well as kept in check during the early life of the young trees. Coconut replanting schemes of the 1980s estimated *Merremia* control to be 30% of recurrent annual costs.

Damage to forest by cyclones is also said to be a factor contributing to the increased aggressiveness of *Merremia* in Pacific islands, with Cyclones Ofa and Val that struck Samoa in the early 90s given as examples.

Uses

Tubers said to be edible in Malaysia. It is promoted as a rapidly growing ground cover following land disturbances reducing erosion. Reported to be useful in healing skin burns.

Management

BIOSECURITY
Countries not yet infested by *Merremia* should consider all likely pathways for entry, and apply quarantine measures accordingly. Special consideration should be given to the part played by the domestic and international trade in ornamental plants in the spread of this invasive weed. Seeds can be bought on the internet.

In Solomon Islands and Vanuatu, *Merremia* is among the top 10 worse weeds.

Meremmia peltata is on the Global Invasive Species Database (2020) of information about alien and invasive species that negatively impact biodiversity, managed by the Invasive Species Specialist Group of the IUCN Species Survival Commission.

BIOLOGICAL CONTROL
Little known.

CULTURAL CONTROL

- Physical & Mechanical
    - Slashing and mowing. A practical means of control if sufficient labour available; the disadvantage is that it promotes

vigorous new shoots, and stem pieces produced by the slashing or mowing can produce roots and new plants.
    - Allow cattle to feed and trample on the vines. They are said to relish *Merremia*.
    - Hand-pulling is effective, but it is very difficult to remove thick vines and tubers from the ground.
- Spacing
    - Reduce spacing of plantation trees as *Merremia* requires full sunlight to grow aggressively.
- Hygiene
    - Treat vehicles and farm machinery. If moving from areas where the weed occurs to those weed-free, wash to remove soil. This is equally important if the machinery is being imported into a country or moved within a country.

CHEMCIAL CONTROL

Waterhouse & Norris[1] state the limitations for using herbicides to control *Merremia*, including, the difficulty of spraying in 'rough country', with logging debris, dense growth of vines, and where it is difficult to guarantee rain-free periods of 4-6 hours.

Use the following herbicides:

- In Australia, MCPA is registered.
- Elsewhere, foliar applications said to be effective are: 2,4-D; MCPA; dicamba; triclopyr; picloram; glyphosate (e.g., Fiji); triclopyr + picloram.
- For cut-vine applications use triclopyr or glyphosate (e.g., Fiji).

For foliar applications, it is recommended that the plants are slashed, and the new growth is then sprayed.

Note, EU approval to use glyphosate ends in December 2022.

When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval. **Recommendations will vary with the crop and system of cultivation. Expert advice on the most appropriate herbicides to use should always be sought from local agricultural authorities.**

AUTHORS Grahame Jackson, Aradhana Deesh & Mani Mua

Information from [1]Waterhouse DF, Norris KR (1987) *Biological Control Pacific Prospects.* Inkata Press, Melbourne; CABI (2019) Merremia peltata. Invasive Species Compendium. Invasive Species Compendium. (https://www.cabi.org/isc/datasheet/33476); and Pacific Island Ecosystems at Risk (2009) Merremia peltata (L.) Merr., Convolvulaceae. (http://www.hear.org/pier/species/merremia_peltata.htm); and from Global Invasive Species Database (2020) Species profile: *Merremia peltata*. (http://www.iucngisd.org/gisd/species.php?sc=163). Photo Paitia Nagalevu, SPC, Land Resources Division, Suva, Fiji.

Produced with support from the Australian Centre for International Agricultural Research under project HORT/2016/185: *Responding to emerging pest and disease threats to horticulture in the Pacific islands*, implemented by the University of Queensland, in association with the Pacific Community and Koronivia Research Station, Ministry of Agriculture, Fiji.