



Miconia

Miconia calvenscens and all other *Miconia* species

DECLARED CLASS 1



Miconia calvenscens' striking foliage (Photo by DPI&F)



Miconia calvenscens sapling (Photo by K. Galway)

Overview

Three species of miconia have been found in Australia. *Miconia calvenscens* is a small tree, which grows up to 15 m tall. It has large leaves that have iridescent purple undersides. *Miconia nervosa* and *M. racemosa* are both shrubs that grow up to 3 m tall. The seeds of these three species are contained in small black-purple or brown fruit that are dispersed primarily by birds. All three species are a significant threat to our rainforests.

Description

Habit

Miconia calvenscens is a small tree, growing up to 15 m tall. It has the ability to form a monoculture, providing complete canopy closure and dense shade.

Miconia racemosa and *Miconia nervosa* are both scrambling shrubs that may reach a height of about 3 m.

Leaves and stems

Miconia calvenscens has large leaves up to 70 cm long with three large veins on each leaf, running from the base to the tip. The underside of the leaves is a deep iridescent purple.

Miconia racemosa leaves can grow up to 20 cm long and each leaf has five distinct veins that all begin and end at the same points at the base and tip. The smaller, transverse veins make a deep 'quilted' pattern on the leaf surface. Leaves form in opposite pairs.

Leaves on *Miconia nervosa* have an elongated tip and can grow up to 25 cm long. The venation shows two distinct points of intersection near the base of the leaf. The leaf surfaces have small hairs. The stems and underside of the leaf are a light red colour.

Flowers and seeds

The flower of *Miconia calvenscens* are pink or white, approximately 5 mm long and occur in a large panicle that can contain 1000–3000 individual flowers. The ripe fruit are black to purple, 6 mm in diameter and contain up to 200 small seeds.



The underside of a *Miconia calvenscens* leaf. Note the large size and the iridescent purple colour (Photo by K. Galway)



Leaves of *Miconia racemosa*, showing the distinct three-lateral vein pattern (Photo by DPI&F)



Miconia nervosa leaf (Photo by DPI&F)

The problem

Miconias are aggressive trees and shrubs that have the ability to invade rainforest areas, displace native plant species and affect the habitat of native fauna. The ecosystems at risk are primarily the coastal tropical and sub-tropical rainforests of eastern Australia. Miconias also have the potential to degrade crop, plantation and pasture areas.

Birds are attracted to the fruit, which can be spread large distances from the parent tree. Seeds can persist in the soil for more than eight years.

Gardeners value the attractive large, purple leaves of *Miconia calvenscens* and have spread it as a garden ornamental.

Miconia calvenscens has become a major weed in the Society Islands (which includes Tahiti), the Hawaiian Islands and other Pacific islands. In the Hawaiian Islands, this plant is known as the 'purple plague' and it is considered the greatest plant threat to the remaining wet forest ecosystems on the islands. In Tahiti, by 1996, *Miconia calvenscens* had become established over 65% of the island (70 000 hectares) in dense stands, with up to 880 trees per hectare.

Life cycle

Flowering and fruiting of *Miconia calvenscens* begins when the plant is 4–5 years old and can take place several times during a year. Each fruit contains up to 200 seeds.

Habitat and distribution

Miconia calvenscens has been present in Australia since the 1960s, when it was introduced to the Townsville Botanical Gardens. It was taken from there to other botanical gardens along the east coast and was sold by nurseries. As of January 2007, all active infestations have been contained to north Queensland.

In Australia, *M. calvenscens* has the potential to invade areas receiving a rainfall of 1800 to 2000 mm per year. This includes the northern coastal and inland areas of Queensland, the Northern Territory and Western Australia.

The only known infestation of *Miconia racemosa* was discovered near Kuranda, north Queensland in 2002. The only known infestation of *Miconia nervosa* was discovered in Australia at Whyanbeel, near Mossman, north Queensland in 2004.

Methods of spread

Because of its attractive foliage, *Miconia calvenscens* has been subject to sale and distribution via gardeners. Its spread from gardens has mainly occurred via frugivorous (fruit-eating) birds. *Miconia nervosa* and *Miconia racemosa* also produce fruit that are attractive to birds.

Seed may also be spread via mud sticking to vehicles, machinery, footwear and animals.

Current status

Populations of *Miconia calvenscens* have been located in six shires in North Queensland.

Miconia nervosa has been found in only one location in the Douglas shire and one infestation of *Miconia racemosa* has been found in the Mareeba shire.

All the miconias are the target of a national cost-shared eradication program, managed by Biosecurity Queensland (a business group of the Department of Primary Industries and Fisheries) with financial support from other states and the federal government, which commenced in 2001.

Progress is being made towards eradication of *Miconia racemosa* and *Miconia nervosa* as they are not sought after garden plants. Surveys of areas surrounding the known infestations have not found additional plants.

Declaration details

All miconia species (*Miconia calvenscens*, *M. racemosa* and *M. nervosa*) are Class 1 declared plants under the *Land Protection (Pest and Stock Route Management) Act 2002*. A class 1 pest is not commonly present in Queensland and, if introduced, would cause a serious economic, environmental or social impact. Landholders are required to keep their properties free of declared Class 1 weeds. It is a serious offence to introduce, keep or sell Class 1 weeds without a permit.

Control methods

The most effective control of small miconia plants is by pulling them out by the roots, placing them off the ground and lodging them in nearby trees to dry out. Large plants are more appropriately treated using the cut stump herbicide application technique where the appropriate herbicide is applied to the cut stump

as soon as the plant is cut down. The tops of these plants should not be left lying on the ground, as they can easily re-shoot.

There are no herbicides registered specifically for the control of miconia in Queensland.

Further information

If you think you have found any of these plants please contact your nearest local government pest officer or Department of Primary Industries and Fisheries office.

Further information is available online at: <www.dpi.qld.gov.au> or <www.weeds.org.au>.



Fruit of *Miconia calvenscens* (Photo by DPI&F)



Flower panicles of *Miconia calvenscens* (Photo by S. Brooks)

Fact sheets are available from DPI&F service centres and the DPI&F Information Centre phone (13 25 23). Check our web site <www.dpi.qld.gov.au> to ensure you have the latest version of this fact sheet. The control methods referred to in this Pest Fact should be used in accordance with the restrictions (federal and state legislation and local government laws) directly or indirectly related to each control method. These restrictions may prevent the utilisation of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, the Department of Primary Industries and Fisheries does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.

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