

# *Paederia foetida*

Maile pilau

Rubiaceae

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## OVERVIEW

*Paederia foetida* (maile pilau), native to eastern Asia, is cultivated in warm regions of the world as an ornamental vine. *P. foetida* has become invasive in several places where it has been introduced including the southern United States and Hawai'i. In Hawai'i, this species is naturalized on the islands of Kaua'i, O'ahu, Maui, and Hawai'i where it is often locally common in disturbed mesic forest, coastal sites, dry forest, and subalpine woodland, 1-1,830 m (1-6,004 ft) (Starr et al. 1999, Wagner et al. 1999). *P. foetida* thrives in both wet lowland areas as well as in dry mid-elevation sites. On Maui, *P. foetida* seems to spread by vegetative means and is not very widespread yet.

## TAXONOMY

**Family:** Rubiaceae (coffee family) (Wagner et al. 1999).

**Latin name:** *Paederia foetida* L. (Wagner and Herbst 1995, Wagner et al. 1999)

**Synonyms:** *Paederia scandens* (Lour.) Merr., *Gentiana scandens* Lour., *Paederia magnifica* Noronha, nom. nud., *Paederia tomentosa* Blume (Wagner and Herbst 1995, Wagner et al. 1999, GRIN 2003).

**Common names:** Maile pilau, stinkvine (Wagner et al. 1999, PLANTS 2003).

**Taxonomic notes:** The genus *Paederia* is made up of about 50 species of tropical origins (Wagner et al. 1999).

**Nomenclature:** The genus name *Paederia* is derived from the Greek word *paederos*, which means opal, in reference to the transparent drupes of some of the species in the genus.

**Related species in Hawai'i:** There are no other known species in the genus *Paederia*.

## DESCRIPTION

"Twining, malodorous vines; stems to 2-7 m long, puberulent in lines or sometimes glabrous. Leaves opposite, oblong-lanceolate to ovate, 4.5-14 cm long, 2-5 cm wide, glabrous except lower surface with tufts of hairs in axils of primary veins, margins entire, ciliate when young, becoming glabrate, apex acuminate or acute, base cuneate to rounded or subcordate, petioles 2-5 cm long, stipules ca. 1.5-1.7 mm long, short-acuminate, short-fimbriate-ciliate to ciliate. Flowers in cymes 2-12 cm long, sometimes several grouped together +- with subtending leaves and forming panicles up to 30 cm long; hypanthium ca. 1.5 mm long; calyx lobes deltate, ca. 0.4-0.5 mm long; corolla white to pale yellow with a dark rose purple center, the tube ca. 7-11 mm long, densely floccose externally, purplish within with long, clavate, purple hairs, the lobes scarcely spreading, margins

crisped-undulate; stamens inserted at different levels, included. Fruits yellowish brown to red, glossy, subglobose, 4-6 mm in diameter." (Wagner et al. 1999).

## **BIOLOGY & ECOLOGY**

**Cultivation:** *P. foetida* is cultivated as an ornamental vine. *P. foetida* was originally introduced to Florida in 1897 as a potential fiber crop (Possley and Brazis 1998).

**Invasiveness:** *P. foetida* thrives in a variety of habitats and has aggressive growth. Vines climb on desirable shrubs and trees, weighing them down and impeding regeneration below the dense shade. In Florida, *P. foetida* invades pasture land and is troublesome along highways and on powerlines (Pratt 2003).

**Pollination:** Not known.

**Propagation:** *P. foetida* can be propagated from seeds and cuttings.

**Dispersal:** *Paederia foetida* is dispersed throughout the world by humans who grow and cultivate the plant for ornamental or other purposes. In the United States and in Hawai'i, it is suspected that seeds are spread by fruit eating birds. In Florida, spread is also known to occur when plants are discarded in yard waste (Possley and Brazis 1998).

**Pests and diseases:** Not known.

## **DISTRIBUTION**

**Native range:** *Paederia foetida* is native to eastern Asia (Wagner et al. 1999). At the northern limit of its native range in Japan, temperatures reach as low as -10 to -20 celcius, suggesting some tolerance to temperate climates (Pratt 2003). In its native range, *P. foetida* occurs in the following habitats: grassy hillsides, secondary forests, open places in primary forests, river banks, waste grounds, in hedges and thickets, roadsides, and on fences and urban areas (Pratt 2003).

**Global distribution:** *Paederia foetida* is cultivated and naturalized in the southern United States and Hawai'i. In the United States, *P. foetida* is located in the central and northern regions of Florida, as well as in Texas, Georgia, North Carolina, South Carolina, Mississippi and Alabama (PLANTS 2003, Pratt 2003). Elsewhere, *P. foetida* is an aggressive weed on Christmas Island and Mauritius (PIER 2003).

**State of Hawai'i distribution:** In Hawai'i, *P. foetida* was first recorded from O'ahu in 1854 (Wagner et al. 1999). *P. foetida* is now naturalized and locally common on Kaua'i, O'ahu, Maui, and Hawai'i where it is often locally common in disturbed mesic forest, coastal sites, dry forest, and subalpine woodland, 1-1,830 m (1-6,004 ft) (Starr et al. 1999, Wagner et al. 1999). In the wet disturbed lowlands of Hilo, *P. foetida* is fairly common and attains a dense growth that can climb high up into trees and often forms a blanket on the vegetation it climbs covers.

**Island of Maui distribution:** On Maui, *P. foetida* is not widespread anywhere, but is locally common in areas of Wailua, and is occasionally observed in Lahaina, Makawao, Keokea, and Hana. Vines are often seen climbing on surrounding vegetation forming a blanket and reaching heights up to at least 10 m (33 ft) in the canopy. On Maui, plants seem to spread vegetatively from original plantings to nearby areas. Plants occur mostly in yards, waste areas, and on the sides of roads. Occasionally flowers are observed. Fruits have not been observed. It is not present in natural areas yet on Maui.

## **CONTROL METHODS**

**Physical control:** It may be possible to remove *P. foetida* mechanically, though there is a lot of biomass and regrowth is likely.

**Chemical control:** Recommendations from Florida suggest the use of triclopyr and glyphosate products for controlling *P. foetida* (Possley and Brazis 1998).

**Biological control:** Work is currently being done in Florida to evaluate the potential for biological control of *P. foetida*.

**Cultural control:** The public could be discouraged from growing *P. foetida*, especially near natural areas.

**Noxious weed acts:** *Paederia foetida* is a declared noxious weed in the states of Alabama and Florida (GRIN 2003).

## **MANAGEMENT RECOMMENDATIONS**

*P. foetida* is an aggressive smothering vine that tolerates a variety of habitats and climatic regimes and is known to become a pest in areas where it is introduced including the southern United States and Hawai'i. On Maui, *P. foetida* is established in the Wailua area and is occasionally cultivated elsewhere. It is not widespread on Maui yet, but would be difficult to control at this time. It is not known from natural areas on Maui yet. The public could be encouraged not to grow this species to prevent further spread in Hawai'i.

## **REFERENCES**

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