GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Coccinia grandis***

Coccinia grandis 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Violales	Cucurbitaceae

Common name kundru (English, Fiji), kiuri awia (English, Marshall Islands), ivy gourd (English), aipikohr (English, Pohnpei), scarlet-fruited gourd (English)

Synonym
Bryonia grandis , L.
Coccinia cordifolia , auct. non (L.) Cogn.
Bryonia grandis , L.
Coccinia cordifolia , (L.) Cogn.var. *alceifolia*(Willd.) Cogn.
Cephalandra indica , Naudin
Coccinia cordifolia , (L.) Cogn.var. *wightiana* (M.Roem.) Cogn.
Coccinia grandis , (L.) Voigt var. *wightiana*(M.Roem.) Greb.
Coccinia indica , Wight & Arn.
Coccinia loureiriana , M.Roem.
Coccinia wightiana , M.Roem.
Cucumis pavel , Kostel.
Momordica bicolor , Blume
Momordica covel , Dennst.
Momordica monadelpha , Roxb.
Bryonia alceifolia , Willd

Similar species

Summary Coccinia grandis is a noxious vine that smothers vegetation and other objects forming a dense canopy. It acts as a host for melon fly and is a reservoir for other crop pests possibly including ring spot virus. It has become invasive in Guam, Saipan and Hawai'i where it is a severe pest in gardens, on utility poles, roadsides, and in natural areas.

view this species on IUCN Red List

Species Description
\"Dioecious perennial herbaceous vine. Stems mostly glabrous, produced annually from a tuberous rootstock; tendrils simple, axillary. Leaves alternate, simple, blade broadly ovate, 5-lobed, 5-9 x 4-9cm, acute and mucronate at the apex, cordate with a broad sinus at the base; surfaces glabrous or scaly, with 3-8 glands near the base; margins denticulate; petiole 1-5cm long. Inflorescence usually of solitary, axillary flowers. Calyx of 5 subulate, recurved lobes 2-5mm long on the hypanthium; peduncle 1-5cm long. Corolla campanulate, white, 3-4.5cm long, deeply divided into 5 ovate lobes. Stamens 3, present as staminodes in female flowers. Ovary inferior. Fruit a smooth, bright red, ovoid to ellipsoid berry 2.5-6cm long\" (PIER, 2003).

Lifecycle Stages
Seeds do not exhibit dormancy, (PIER, 2003).

Uses
The shoot tips are used in Asian cooking, (PIER, 2003).

Habitat Description
In Hawai'i, "naturalised and rapidly spreading in disturbed sites, 0-100 m" (PIER, 2003). In Fiji, "a naturalised weed of waste places, canefields, roadsides, etc., near sea level, perhaps originally intentionally introduced; a sprawling or creeping vine" (PIER, 2003).

Reproduction
Pieces of vines or cuttings, bird-dispersed seeds, probable dispersal by feral pigs. On Guam, only one sex of the plant is present (male), so spread is entirely by roots, pieces, and cuttings. The shoot tips are used in Asian cooking, so long-range dispersal is often the result of introduction by humans. (PIER, 2003)

Nutrition
The roots and stems are succulent and capable of storing water throughout the dry season, (ERDC).

General Impacts
Smothers vegetation and other objects forming a dense canopy (NMC Crees, 1997). Smothering vine, very aggressive, with extensive tuberous root system, (PIER, 2003). Acts as a host for melon fly and may also be a reservoir for ring spot virus (NMC Crees, 1997). Very aggressive weed on Guam and Saipan, in many places smothering the forest, (PIER, 2003). In Hawai'i a severe pest in gardens, on utility poles, roadsides, and in natural areas, (Thomas, 1998).

Management Info
Preventative measures: A Risk Assessment of \r*Coccinia grandis* 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 score of 21 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 *Coccinia grandis* for Australia was prepared by Pacific Island Ecosystems at Risk (PIER) using the Australian risk assessment system (Pheloung, 1995). The result is a score of 9 and a recommendation of: reject the plant for import (Australia) or species likely to be a pest (Pacific).
Physical: Cutting has little effect (PIER, 2003).
\r\nChemical: A single application of herbicide (Garlon®) may be insufficient to prevent regrowth. Roundup® is only effective against young plants. Because of its climbing habit, use of foliar herbicides is difficult without causing damage to the underlying vegetation. \"Susceptible to basal bark applications of 2,4-D or triclopyr, however finding basal stems difficult in dense stands. Foliar applications of 2,4-D, glyphosate or metsulfuron ineffective; triclopyr and dicamba, each at 1 lb/acre provided excellent knockdown of foliage. This suggests knockdown of foliage followed by basal stem treatments when the plants begin to re-sprout may be successful. Seeds do not exhibit dormancy so ivy gourd may be eradicable from a defined area.\" (PIER, 2003).
Biological: \"To control this weed, three natural enemies, *Melittia oedipus* Oberthur (Sesiidae), *Acythopeus coccinae* O'Brien (Curculionidae) and *Acythopeus burkhartorum* O'Brien (Curculionidae) were introduced to the Hawai'ian Islands from East Africa. These natural enemies are being cultured at the Quarantine Laboratory in Guam\" (PIER, 2003). In Hawai'i two species of weevils have recently been released for biological control (Thomas, 1998).Some regions, including Hawai'i, are experimenting with biological control of *A.coccinia* primarily using *Acythopeus burkhartorum* and *A. cocciniae*, two nonindigenous weevils, to control infestations of Coccinia grandis or ivy gourd, (Thomas, 1998). A decade of lower rainfall in Hawai'i has not provided ideal conditions for the proliferation of ivy gourd so the true impact of the biocontrol agents is difficult to assess (Kenneth K. Teramoto, pers. comm, 2003).

Pathway
The shoot tips are used in Asian cooking, so long-range dispersal is often the result of introduction by humans. (PIER, 2003)

Principal source: Pacific Islands Ecosystems at Risk, (PIER)

Compiler: IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Kenneth K. Teramoto. Chief, Biological Control Section, Plant Pest Control Branch, Hawaii Department of Agriculture. Hawaii USA.

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ALIEN RANGE

[2] FIJI
[1] FRENCH POLYNESIA
[1] MARSHALL ISLANDS
[3] NORTHERN MARIANA ISLANDS
[1] SAINT LUCIA
[2] TONGA
[1] VANUATU
[1] FRENCH GUIANA
[1] GUAM
[1] MICRONESIA, FEDERATED STATES OF
[1] REUNION
[1] SAMOA
[3] UNITED STATES

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