

***Ardisia crenata***  简体中文 正體中文

**System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Primulales	Myrsinaceae

## Common name

### Synonym

*Ardisia crenulata*, G. Lodd.  
*Ardisia crenulata*, (Lodd.)

### Similar species

### Summary

*Ardisia crenata* is an ornamental, cultivated for its very decorative red fruit, but it is easily naturalised and has become highly invasive in mesic forests in several regions of the world (e.g. Mascarene Islands, Hawaii, Seychelles) where it causes a reduction in the presence and diversity of native understorey plant species. Its fruit is easily spread by indigenous or introduced birds.



[view this species on IUCN Red List](#)

## Species Description

*Ardisia crenata* is a small erect evergreen shrub up to 1.5m tall, growing in multistemmed clumps with only flowering branches. Leaves alternate to 21cm long and 1-4cm wide, dark green above, waxy, glaborous with 12 to 18 pairs of lateral nerves, merging into a distinct marginal nerve which is slightly raised below. Flowering branches lateral or axillary clusters, up to 10cm long with few leaves. Flowers are small, bisexual, white to pink, often drooping below foliage. Petaloid components pinkish white, anthers yellow. Fruit is a red, glaborous 1 seeded drupe, 5-8 mm in diameter. Populations with white berries also exist (Langeland, 2007; PIER, 2007; Sellers, 2007).

## Notes

A recent study comparing wild genotypes of *Ardisia crenata* within its native range in Japan with the genotype currently invading north central Florida concluded that traits selected for the ornamental cultivar may increase its invasiveness in non-native habitat. Cultivar phenotypes found in Florida have dense foliage, compared to those found in Japan, which produces greater self shading and a slower growth rate. Dense foliage is more advantageous in the more open forests of Florida due to light availability. One area of the study revealed that very few seedlings were found growing within a 1 metre radius of adult plants for the Japanese genotypes, 5 or less, while up to 631 seedlings were found within a 1 metre radius of adult plants for the Florida genotypes. The thick carpet of seedlings found beneath adult plants can out compete native plants such as wildflowers (Kitajima, 2006).

## Lifecycle Stages

*Ardisia crenata* reaches sexual maturity around 20cm in height when lateral branches start developing. Each lateral branch lives for two years, producing vegetation in the first year and flowers and fruit in the second year. Shoot extension and leaf production are generally limited to July through September after flowering. Seeds are intolerant to dessication. Viable seeds retained through out the year on the plant. Seeds have the ability to germinate within a range of 4 to 10 of soil pH, with germination rates of 84 to 98 percent within 40 days (Kitajima, 2006; Langeland, 2007).

## Uses

*Ardisia crenata* is cultivated and planted in many countries as an ornamental shrub (PIER, 2007).

## Habitat Description

*Ardisia crenata* thrives in the understory of mesic forests, often found in dense patches containing between 100 and 300 stems per m<sup>2</sup> (Kitajima, 2006; Langeland, 2007).

## Reproduction

Angiosperm, dicotyledonous. Sexual. Easily propagated by seed or cutting, only established by seed in the wild. Reaches reproductive maturity around 20cm in height when lateral branches start developing. Vivaciously resprouts after cutting or fire. Each drupe contains one seed inside a fleshy membrane (Kitajima, 2006; Langeland, 2007).

## Nutrition

*Ardisia crenata* thrives in productive, well drained soils with partial to heavy shade in the understory of mesic forests (PIER, 2007; Langeland, 2007). Growth rates of *A. crenata* have been positively correlated with soil phosphorus levels (Bray, 2003).

## General Impacts

Considered a high risk invasive in many areas, *Ardisia crenata* often invades the understory of mesic forests from areas where it is planted or cultivated for ornamental purposes. *Ardisia crenata* can significantly reduce native species diversity when present, regardless of density. It significantly increases shade in understories, often shading out native seedlings. While there is no published data supporting the theory that *A. crenata* is poisonous, it is suspected to be the agent of death of livestock in two separate cases in Florida (Langeland, 2007; Sellers, 2007).

## Management Info

Preventative measures: A [Risk Assessment of \*Ardisia crenata\*](#) for Hawaii 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 result is a score of 7 and a recommendation of: \"reject the plant for import (Australia) or species likely to be of high risk (Pacific).\"

Management areas should be closely monitored for presence and frequency of *Ardisia crenata*. It should be subject to inter-island quarantine or banned from importation to non-native locations. *A. crenata* is already barred from importation into French Polynesia (Space and Flynn, 2002). Eradication is most effective when performed within first 1 to 2 years of presence before seed production begins (Langeland, 2007).

Physical: Hand pulling seedlings is effective where soil disturbance is acceptable (PIER, 2007).

Chemical: Chemical application of glyphosate can be used on dense populations while larger, individual specimens may be cut down and stumps treated with herbicide or treated with a basal application of triclopyr. Suppression may be accomplished through complete foliar applications of 5% v/v of Garlon 4 or Remedy. Garlon 4 or Remedy can be applied to the basal bark in an 18% v/v solution, applying no more than 8 quarts per acre and/or less than 10% of total grazed area when applying more than 2 quarts per acre. Always follow labeling instructions when applying herbicides (PIER, 2007; Sellers, 2007).

**Principal source:** [Langeland, K.A. and Burks, K.C. 2007. Identification and Biology of Non-Native Plants in Florida's Natural Areas. \*Ardisia crenata\*](#)

Kitajima, K. and Fox, A. M. and Sato, T. and Nagamatsu, D. 2006. Cultivar selection prior to introduction may increase invasiveness: evidence from *Ardisia crenata*.

[Sellers, B. A. and Langeland, K. A. and Ferrell, J. A. and Meisenberg, M. and Walter. 2007. Identification and Control of Coral Ardisia \(\*Ardisia crenata\*\): A Potentially Poisonous Plant.](#)

[PIER, 2007. \*Ardisia crenata\* Pacific Island Ecosystems at Risk.](#)

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## ALIEN RANGE

**[2] AUSTRALIA**

**[1] FIJI**

**[1] REUNION**

**[4] UNITED STATES**

**[1] COOK ISLANDS**

**[1] MAURITIUS**

**[1] SEYCHELLES**

## BIBLIOGRAPHY

17 references found for *Ardisia crenata*

### Management information

Kitajima, K. and Fox, A. M. and Sato, T. and Nagamatsu, D. 2006. Cultivar selection prior to introduction may increase invasiveness: evidence from *Ardisia crenata*. *Biological Invasions*: Volume 8, Number 7, October 2006, pp. 1471-1482.

**Summary:** This article is an interesting look into the phenotypic and genotypic differences between specimens of *Ardisia crenata* found within its native range in Japan versus specimens found as invasives in north central Florida. The article concludes that traits chosen for the ornamental cultivar of *A. crenata* commonly found in Florida contribute to its pervasiveness as an invasive species.

[Langeland, K.A. and Burks, K.C. 2007. Identification and Biology of Non-Native Plants in Florida's Natural Areas. \*Ardisia crenata\* pp. 100-101. University of Florida, IFAS publication Number 257.](#)

**Summary:** This book is a great reference for a wide range of invasive plants found in Florida's natural areas. For each species featured there is information on the botanical description, ecological significance, distribution, and life history.

Available from: <http://plants.ifas.ufl.edu/identif.html> [Accessed 10 March 2008]

[Meisenburg, M. J. and Fox, A. M. 2002. What role do birds play in dispersal of invasive plants? \*Wildland Weeds\*, summer 2002, Volume 5, Number 3, pp. 8-14. Florida Exotic Pest Plant Council.](#)

**Summary:** This article looks into the role of birds in the dispersal of specific invasive plants, referring to other publications as well as research within the University of Florida.

Available from: [http://www.fleppc.org/publications/Wildland%20Weeds/WW\\_Summer%202002.pdf](http://www.fleppc.org/publications/Wildland%20Weeds/WW_Summer%202002.pdf) [Accessed 10 March 2008]

[Sellers, B. A. and Langeland, K. A. and Ferrell, J. A. and Meisenberg, M. and Walter. 2007. Identification and Control of Coral Ardisia \(\*Ardisia crenata\*\): A Potentially Poisonous Plant. SS AGR 276. University of Florida, IFAS Extension.](#)

**Summary:** This article gives a brief biological summary of *Ardisia crenata* including a warning of possible toxicity and concludes with specific control methods.

Available from: <http://edis.ifas.ufl.edu/AG281> [Accessed 10 March 2008]

[Space, J. C. and Flynn, T. November 2002. Report to the Government of the Cook Islands on Invasive Plant Species of Environmental Concern. U.S.D.A. Forest Service, Pacific Southwest Research Station, Institute of Pacific Islands Forestry, Honolulu, Hawaii, USA.](#)

**Summary:** This report is a broad and in depth description of invasive plants throughout the Cook Islands. It is a good source for distribution and management information within the Cook Islands.

Available from: [http://www.hear.org/pier/pdf/cook\\_islands\\_report.pdf](http://www.hear.org/pier/pdf/cook_islands_report.pdf) [Accessed 10 March 2008]

[Tunison, J. T. and Zimmer, N. G. 1992. Success in Controlling Localized Alien Plants in Hawaii Volcanoes National Park. \*Alien Plant Invasions in Native Ecosystems of Hawaii: Management and Research\*. Cooperative National Park Resources Studies Unit, University of Hawaii, Manoa.](#)

**Summary:** This volume is an organized group of publications addressing invasive species management in Hawaii with specific insight into management of such species within National parks.

Available from: <http://www.hear.org/books/apineh1992/pdfs/apineh1992.pdf> [Accessed 10 March 2008]

### General information

Baret, S., Rouget, M., Richardson, D. M., Lavergne, C., Ego, B., Dupont, J., & Strasberg, D. 2006. Current distribution and potential extent of the most invasive alien plant species on La Réunion (Indian Ocean, Mascarene islands). *Austral Ecology*, 31, 747-758.

**Summary:** L'objectif de ce papier est d'identifier les zones prioritaires en matière de gestion des invasions biologiques à La Réunion en modélisant la distribution actuelle et potentielle d'une sélection de plantes parmi les plus envahissantes.

Bray, S.R. and Kitajima, K. and Sylvia, D. M. 2003. Mycorrhizae Differentially Alter Growth, Physiology, and Competitive Ability Of An Invasive Shrub. *Ecological Applications*: Vol. 13, No. 3, pp. 565-574. Ecological Society of America 2003.

**Summary:** This article gives a brief biological summary of *Ardisia crenata* before going into depth about the affects of mycorrhizae on its growth.

[Conservatoire Botanique National De Mascarin \(BOULLET V. coord.\) 2007. - \*Ardisia crenata\* Index de la flore vasculaire de la Réunion \(Trachéophytes\) : statuts, menaces et protections. - Version 2007.1](#)

**Summary:** Base de données sur la flore de La Réunion. De nombreuses informations très utiles.

Available from: <http://flore.cbnm.org/index2.php?page=taxon&num=08c5433a60135c32e34f46a71175850c> [Accessed 28 March 2008]

[ITIS \(Integrated Taxonomic Information System\), 2008. Online Database \*Ardisia crenata\* Sims.](#)

**Summary:** An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

Available from: [http://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=183614](http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=183614) [Accessed 8 April 2008]

[Kueffer, C. & Lavergne, C. 2004. Case studies on the status of invasive woody plant species in the Western Indian Ocean. Réunion. FAO. 36 p](#)

**Summary:** Available from: <http://www.fao.org/forestry/webview/media?mediald=6842&langId=2> [Accessed 26 March 2008]

Macdonald, I.A.W., Thibaud, C., Strahm, W.A., & Strasberg, D. 1991. Effects on alien plant invasions on native vegetation remnants on La Réunion (Mascarene Islands, Indian Ocean). *Environmental Conservation*, 18, 51-61.

**Summary:** Cet article est le premier à proposer une hiérarchisation des plantes les plus envahissantes de La Réunion. 33 plantes ont été ainsi classées en utilisant une méthode développée en Afrique du Sud. Les bases d'une stratégie de lutte contre les plantes exotiques envahissantes sont également formulées.

Mandon-Dalger, I., Clergeau, P., Tassin, J., Rivière, J., & Gatti, S. 2004. Relationships between alien plants and an alien bird species on Réunion Island. *Journal of Tropical Ecology*, 20, 635-642.

**Summary:** Ce papier analyse le rôle des oiseaux exotiques dans la dissémination de certaines plantes exotiques envahissantes de la Réunion.

[PIER \(Pacific Island Ecosystems at Risk\) 2007. \*Ardisia crenata\*](#)

**Summary:** This site is set up by the Institute of Pacific Islands Forestry to profile plant threats to Pacific ecosystems in partnership with the United States Forest Service. A highly reliable site.

Available from: [http://www.hear.org/pier/species/ardisia\\_crenata.htm](http://www.hear.org/pier/species/ardisia_crenata.htm) [Accessed 10 March 2008]

Tassin, J., Rivière, J.N., Cazanove, M., Bruzzes, E. 2006. Ranking of invasive woody plant species for management on Réunion Island. *Weed research* 46, 388-403

**Summary:** L'inventaire de 318 espèces de plantes ligneuses introduites à la Réunion, permet d'en identifier 132 comme naturalisées dans les écosystèmes naturels. 26 de ces espèces choisies parmi les plus envahissantes ont été classées en fonction de leur impact biologique sur les écosystèmes indigènes.

[USDA, ARS. 2008. \*Ardisia crenata\*. National Genetic Resources Program. Germplasm Resources Information Network \(GRIN\), February, 2008. National Germplasm Resources Laboratory, Beltsville, Maryland.](#)

**Summary:** This taxonomy website, provided by the USDA, is a great source for common names and some distribution information of plants. Available from: <http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?3880> [Accessed 10 March 2008]

[USDA, NRCS. 2008. \*Ardisia crenata\* The PLANTS Database \(<http://plants.usda.gov>, 15 May 2008\). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.](#)

**Summary:** Available from: <http://plants.usda.gov/java/profile?symbol=ARCR80> [Accessed 10 March 2008]