

Passiflora tarminiana



简体中文

正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Violales	Passifloraceae

Common name banana passionfruit (English), tacso amarillo (Spanish, Ecuador), tumbo (Spanish, Peru, Bolivia), curuba ecuatoriana (Spanish, Colombia), bananadilla (English), curuba india (Spanish, Colombia), curuba (French), gulián (Spanish, Ecuador), curuba quiteña (Spanish, Colombia), banana passion flower (English), banana poka (English, Hawaii), banana passion vine (English)

Synonym *Passiflora mollissima*
Passiflora mixta

Similar species *Passiflora tripartita*, *Passiflora mixta*, *Passiflora pinnatistipula*, *Passiflora antioquiensis*

Summary *Passiflora tarminiana* is an aggressively invasive tropical vine native to the Andes. It invades disturbed areas, smothers trees, reduces biodiversity and assists other invasive species, such as feral pigs, which feed on the fruit. Biological control programmes trialled in Hawaii have had very encouraging results, and New Zealand is now looking at introducing biocontrol agents. *Passiflora tarminiana* is a newly-described species, so older references to *Passiflora mollissima* (now *Passiflora tripartita* var. *mollissima* (Kunth) Holm Nielsen & Jørgensen)) may in fact be referring to *Passiflora tarminiana*.



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

Species Description

A climbing liana vine possessing trilobed, serrated leaves with soft, downy undersides, always hairless on top; minute subreniform, aristate, deciduous stipules; flower pendent; sepals and petals light pink to bright pink; floral tube light green; bracts ovate; fruit fusiform, growing larger at high elevations, to 150 g; pericarp soft and yellow to yellow-orange; pulp orange; numerous black seeds (Fruits from America, 2002).

P. tarminiana is a newly described species. It was formerly included with the species *P. mollissima*, and is still described under this name in many resources. The two species have a number of differing characteristics. *P. tarminiana* has flowers in which the petals and sepals open flat, or are reflexed back in some cases, and the sepals are close to the end of the floral tube. The nectary chamber is conspicuously wider than the floral tube. *P. tripartita* var. *mollissima* never opens its petals and sepals to more than a bell shape, and the sepals are short in relation to the length of the floral tube (Irvine, 2003). Its bracts form a narrow tube. Its stipules are much larger, embracing the stem, and permanent. *P. tarminiana* is highly tolerant or resistant to the anthracnose affecting fruits and leaves of *P. tripartita* var. *mollissima* and it regenerates more easily from the base. It seems more susceptible to attacks of Heliconiid butterfly larvae in the juvenile stage.

Notes

On the State of Hawai'i noxious weed list, where it has invaded huge areas of native forest and the fruit provides a food source for feral pigs (PIER, 2003; Smith, 1998). Also a problem species in New Zealand and South Africa (Binggeli, 1997).

P. tarminiana is often confused with *P. mollissima*. This is especially true in Hawai'i, where the 'banana poka', often described as *P. mollissima*, is actually *P. tarminiana*. *P. tripartita* var. *mollissima* is absent from Hawai'i (Irvine, 2003).

Lifecycle Stages

Adult plants can reach an age of 20 years (Binggeli, 1997).

Uses

Often cultivated for fruit and as an ornamental plant, due to its attractive flowers (Binggeli, 1997). On Kauai, banana poka vines are woven into baskets (Starr, F., pers.comm., 2003).

Habitat Description

Found in disturbed habitats. Tolerates both high and low light levels, although seedlings do not tolerate dense shade. Tolerant of occasional frosts. Naturally occurs in the Andes, between 2000 and 3600 m a.s.l. Grows in areas with mean annual rainfall between 800 and 1300mm and a mean annual temperature of 11.4 to 15.0°C. Once reaching canopy height the vines spread laterally. (Binggeli, 1997)

In its region of origin, *P. tarminiana* only exists under cultivation as a fruit crop, with a few individuals escaped from cultivation, but never forming significant wild populations.

Reproduction

Feral pigs, when present, are the principal short-distance dispersal agents. Alien frugivorous and granivorous birds, as well as man, act as long distance dispersal agents (PIER, 2003).

Grows from seed to flowering in around one year. Mainly out-crosses, although self-pollinating may occur. Fruit contains numerous seeds (Binggeli, 1997). Hybridizes easily with other *Passiflora* species of subgenera *Tacsonia* and *Manicata*.

General Impacts

P. tarminiana can rapidly reach and smother the forest canopy when the sub-canopy vegetation is disturbed either naturally, by hurricanes and other high winds, or by man or feral pigs (Smith, 1985 in PIER, 2003). *P. tarminiana* suppresses tree regeneration, topples shallow-rooted trees, kills standing trees through shading, and lowers species richness (Binggeli, 1997).

Management Info

Physical: Small plants can be hand pulled; older ones must be dug out (PIER, 2003).

Chemical: Cut vines and treat with herbicide, such as Tordon, Roundup or Escort (Binggeli, 1997; DOC, 2003).

Biological: Three biocontrol agents have been released in Hawai'i. *Cyanotricha necryia*, a foliage-feeding moth, was released in 1988 but failed to establish.

Another moth species, *Pyrausta norella*, was released in 1991. It feeds on the buds, leaves, fruit, and shoot tips of *P. tarminiana*. It has established but is not common. A leaf spot fungus, *Septoria passiflorae*, which was released in 1996, is now widespread and causing large disease epidemics. There have been *P. tarminiana* biomass reductions of 80-95% over more than 2000 ha, giving indications that the leaf spot fungus has great potential. Other agents that are being investigated include *Zapriotheca* nr. *nudiseta*, a fly that feeds on flower buds, as well as *Josia fluonia* and *J. ligata*, two species of defoliating moths (Landcare Research 1999; 2001). In damp areas *P. tarminiana* may suffer from slug herbivory (Binggeli, 1997).

Pathway

Grown for its fruit in some areas (Binggeli, 1997). Often planted as an ornamental plant because of its attractive flowers (Binggeli, 1997).

Principal source: [PIER \(Pacific Island Ecosystems At Risk\), 2003.](#)
[Binggeli, P. 1997. Woody plant Ecology.](#)

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

Review: Dr. Geo Coppens Consultant, Tropical Fruit. CIRAD. France

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ALIEN RANGE

[1] EAST AFRICA
 [2] NEW ZEALAND
 [1] PHILIPPINES
 [1] SOUTH AFRICA
 [7] UNITED STATES

[1] NEW CALEDONIA
 [1] PAPUA NEW GUINEA
 [1] REUNION
 [1] SRI LANKA
 [1] ZIMBABWE

BIBLIOGRAPHY

12 references found for *Passiflora tarminiana*

Management information

[Binggeli, P. 1997. *Passiflora mollissima* HBK. Bailey \(Passifloraceae\). Woody plant Ecology.](#)

Summary: Some useful information on *P. mollissima/tarminiana*. Minimal management information.

Available from: <http://members.lycos.co.uk/WoodyPlantEcology/docs/web-sp13.htm> [Accessed 24 January 2003].

[Gardner, D. E. 1998. *Passiflora mollissima*. University of Hawaii, Botany Department.](#)

Summary: Has information on research being conducted as to the control of this species in Hawaii.

Available from: <http://www.botany.hawaii.edu/faculty/gardner/biocontrol/banana%20poka/passiflora.htm> [accessed 24 January 2003]

[Landcare Research, 1999. What's New in biological control of Weeds? No. 13 Nov 1999.](#)

Summary: A brief article about control of banana passionfruit in New Zealand.

Available from: <http://www.landcareresearch.co.nz/publications/newsletters/weeds/wtsnew13.pdf> [Accessed 20 January 2003].

[Landcare Research, 2001. What's New in biological control of Weeds? No. 19 Nov 2001.](#)

Summary: Honey, I Shrunk the Weed. A very useful article with good pictures on the use of biological control in Hawaii.

Available from: <http://www.landcareresearch.co.nz/publications/newsletters/weeds/wtsnew19.pdf> [Accessed 20 January 2003]

[Landcare Research, 2002. What's New in biological control of Weeds? No. 21 May 2002.](#)

Summary: Has a small amount of information regarding biological control, and a footnote on *Passiflora* species in New Zealand.

Available from: <http://www.landcareresearch.co.nz/publications/newsletters/weeds/wtsnew21.pdf> [Accessed 12 August, 2003].

[PIER \(Pacific Island Ecosystems at Risk\), 2003. *Passiflora tarminiana*](#)

Summary: Contains a useful comparison between three species in the *Passiflora* spp. Ecology, synonyms, common names, distributions (Pacific as well as global), management and impact information.

Available from: http://www.hear.org/pier/species/passiflora_tarminiana.htm [Accessed 12 August, 2003]

General information

[de Eeckenbrugge, G. C., Barney, V. E., Jorgensen, P. M., and MacDougal, J. M. 2001. *Passiflora tarminiana*, a new cultivated species of *Passiflora* subgenus *Tacsonia* \(Passifloraceae\). *Novon* 11\(1\): 8-15](#)

Summary: A description of *P. tarminiana* as a new species, distinct from *P. mollissima*

[Fruits from America, 2002. CIRAD-FLHOR/IPGRI Project for Neotropical Fruits - International Plant Genetic Resources Institute 2002.](#)

Summary: A good, brief summary of information about the species with clear pictures.

Available from: http://www.ciat.cgiar.org/ipgri/fruits_from_americas/frutales/Ficha%20Passiflora%20tarminiana.htm [Accessed 12 August, 2003]

[Irvine, M. S. 2003. *Passiflora tarminiana*. ♦ 2000-2003 Myles Stewart Irvine.](#)

Summary: Contains a number of amateur pictures of *P. tarminiana*. Has good information on the differences between *P. tarminiana* and *P. mollissima*.

Available from: <http://www.passionflow.co.uk/taxiseed.htm> [Accessed 12 August, 2003]

[Meyer, Jean-Yves & Loope, Lloyd & Sheppard, A. & Munzinger, Jérôme & Jaffré, Tanguy. \(2006\). Les plantes envahissantes et potentiellement envahissantes dans l'archipel néo-calédonien : première évaluation et recommandations de gestion.](#)



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Passiflora tarminiana*

Missouri Botanical Garden, 2003. *Passiflora tarminiana*, a cultivated species of *Passiflora* subgenus *Tacsonia* (Passifloraceae). ♦ 1995-2003 Missouri Botanical Garden. Available from: <http://ridgwaydb.mobot.org/mobot/mbgpress/abstract.asp?abstractid=506> [Accessed 20 January 2003]

Summary: Contains the abstract of the paper that first described *P. tarminiana*.

Smith, Clifford W. 1998. *Hawaiian Alien Plant Studies*. University of Hawaii, Botany Department.

Summary: Minimal information, but has a little on specific infestations in Hawaii.

Available from: http://www.botany.hawaii.edu/faculty/cw_smith/pas_mol.htm [Accessed 12 August, 2003].