Changes to Compendia distribution data: the distribution tables, maps and references in datasheets have been restructured to handle the data better for updating and align with a geographic standard. Further details are available on the About page.

PRA Tool for plant commodity and pest-initiated Pest Risk Analysis. Available as an addition to the CPC.

Horizon Scanning Tool for prioritizing invasive species threats.

Next: Identification of Nipaecoccus (Hemiptera: Coccomorpha:... >>
Return to Search Results

Datasheet

Nipaecoccus nipae (spiked mealybug)

Index

Pictures
Identity
Taxonomic Tree
Notes on Taxonomy and Nomenclature
Description
Distribution
Distribution Table
Risk of Introduction
Hosts/Species Affected
Host Plants and Other Plants Affected
Growth Stages
Symptoms
List of Symptoms/Signs
Biology and Ecology
Notes on Natural Enemies
Natural enemies

Summary

Last modified
25 November 2019

Datasheet Type(s)
Pest
Natural Enemy

Preferred Scientific Name
Nipaecoccus nipae

Preferred Common Name
spiked mealybug

Taxonomic Tree
Domain: Eukaryota
Kingdom: Metazoa
Phylum: Arthropoda
Subphylum: Uniramia

More information

Impact
Detection and Inspection
Similarities to Other Species/Conditions
Prevention and Control
References
Distribution Maps

Class: Insecta

Host Plants and Other Plants Affected

Annona
Annona muricata (soursop)
Annona reticulata (bullock's heart)
Annona squamosa (sugar apple)
Anthurium andreanum

More...

More information

Don't need the entire report?

Generate a print friendly version containing only the sections you need.

Generate report

Pictures

Top of page

Picture	Title	Caption	Copyright
	Adult	N. nipae on Kentia palm from the Canary Isles. Adult females 3.5 mm long, flattish and oval, with distinctive dorsal and marginal white or yellow wax cones which create a satellite appearance. Male N. nipae produce small (ca 2 mm long) waxy filamentous cocoons or tests on the foliage, often in large numbers.	Crown Copyright

Identity

Top of page

Preferred Scientific Name

Nipaecoccus nipae (Maskell, 1893)

Preferred Common Name

spiked mealybug

Other Scientific Names

Ceroputo nipae (Maskell), Lindinger, 1904
Dactylopius dubia Maxwell-Lefroy, 1903
Dactylopius nipae Maskell, 1893
Dactylopius pseudonipae Cockerell, 1897
Nipaecoccus pseudonipae (Cockerell), Beardsley, 1960
Pseudococcus magnoliae Hambleton, 1935
Pseudococcus nipae (Maskell), Cockerell, 1902
Pseudococcus pseudonipae (Cockerell), Fernald, 1903
Ripersia nipae (Maskell), Gómez-Menor Ortega
Ripersia serrata Tinsley, 1900
Trechocorys nipae (Maskell), Kirkaldy, 1904

International Common Names

English: avocado mealybug; buff coconut mealybug; coconut mealybug; nipa mealybug; sugarapple mealybug
Spanish: chinche harinosa del cocotero; piojo harinoso (Mexico)
French: cochenille du cocotier

Local Common Names

Netherlands: Palmwolluis
South Africa: palm wolluis

EPPO code

NIPANI (Nipaecoccus nipae)

Taxonomic Tree

Top of page

Domain: Eukaryota
Kingdom: Metazoa
Phylum: Arthropoda
Subphylum: Uniramia
Class: Insecta
Order: Hemiptera
Suborder: Sternorrhyncha
Unknown: Coccoidea
Family: Pseudococcidae
Genus: Nipaecoccus
Species: Nipaecoccus nipae

Notes on Taxonomy and Nomenclature

Top of page

There are apparently two forms of Nipaecoccus nipae, one with white wax and the other with yellow wax, which have often been named N. nipae and N. pseudonipae, respectively (Zimmerman, 1948; Williams and Granara de Willink, 1992). Beardsley (1960) suggested morphological differences between the adult males of the two forms but no morphological characters have been found to distinguish the adult females. In life, the yellow and white forms are often found living together and for the purposes of this work they are regarded as the same species.

Description

Top of page

In life, adult female N. nipae are 3.5 mm long, flattish and oval. They are salmon-pink to dark-red in colour, with distinctive dorsal and marginal white or yellow wax cones which create a satellite appearance. In most species of mealybug, the males, if present, are less conspicuous that the females, but male N. nipae are more numerous than females. Male N. nipae produce small (about 2 mm long) waxy filamentous cocoons or tests on the foliage, which are often present in large numbers. The male tests of N. nipae are more common and more conspicuous than those of many other mealybug species.

Authoritative identification of N. nipae involves detailed microscopic examination of slide-mounted, teneral, adult females by a competent taxonomist. For detailed morphological descriptions of the adult female, illustrations and keys to the species of Nipaecoccus that occur in North America see Ferris (1950) and McKenzie (1967), for those in Central and South America see Williams and Granara de Willink (1992) and for those in Australia see Williams (1985). Beardsley (1960) has described the morphology of the adult male.

Distribution

Top of page

N. nipae is found in Europe, Asia, Africa, North, Central and South America and Oceania (Ben-Dov, 1994; CABI/EPPO, 2005).

The collection at The Natural History Museum, London, UK contains numerous samples of Nipaecoccus from southern Asia, particularly India; all of them are N. viridis and not N. nipae. On the basis of the coverage by Williams (2004), and the absence of supporting specimens, the records of N. nipae from southern Asia are regarded as of questionable accuracy and are not included in the recent distribution map by CABI/EPPO (2005).

A tentative record for Australia (Williams, 1985), has not been included in CABI/EPPO (2005).

In northern and central Europe, including the UK, N. nipae is found in glasshouses, particularly in botanical gardens, and does not appear to occur in the open. It is therefore recorded as occasionally present in this region. In South Africa, N. nipae is mostly found in glasshouses, but is occasionally found in the open around Durban (CABI/EPPO, 2005).

Distribution Table

Top of page

The distribution in this summary table is based on all the information available. When several references are cited, they may give conflicting information on the status. Further details may be available for individual references in the Distribution Table Details section which can be selected by going to Generate Report.

Last updated: 10 Jan 2020

Continent/Country/Region	Distribution	Last Reported	Origin	First Reported	Invasive	Reference	Notes
Africa							
Algeria	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Madagascar	Present					CABI and EPPO (2005)	
Morocco	Present					CABI and EPPO (2005)	
South Africa	Present					CABI and EPPO (2005)	
Zimbabwe	Present					CABI and EPPO (2005)	
Asia							
Bangladesh	Absent, Unconfirmed presence record(s)					APPPC (1987); CABI and EPPO (2005)	
China	Present					Ben-Dov (1994); CABI and EPPO (2005)	
-Fujian	Present					CABI and EPPO (2005)	
-Guangxi	Present					CABI and EPPO (2005)	
-Hainan	Present					CABI and EPPO (2005)	
Georgia	Present					Ben-Dov (1994); CABI and EPPO (2005)	
India	Present					CABI (Undated a)	Present based on regional distribution.
-Bihar	Absent, Unconfirmed presence record(s)					CABI and EPPO (2005)	
-Kerala	Present					Josephrajkumar et al. (2012)	
-Tamil Nadu	Absent, Unconfirmed presence record(s)					CABI and EPPO (2005)	
-West Bengal	Absent, Unconfirmed presence record(s)					CABI and EPPO (2005)	
Indonesia	Present					CABI and EPPO (2005)	
-Java	Present					CABI and EPPO (2005)	
Pakistan	Absent, Unconfirmed presence record(s)					Ben-Dov (1994); CABI and EPPO (2005)	
Philippines	Present				Invasive	Caasi-Lit et al. (2012); Tokihiro (2006)	
South Korea	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Thailand	Absent, Unconfirmed presence record(s)					Waterhouse (1993); CABI and EPPO (2005)	
Turkey	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Vietnam	Absent, Unconfirmed presence record(s)					Waterhouse (1993); CABI and EPPO (2005)	
Europe							
Austria	Present, Few occurrences					CABI and EPPO (2005)	
Belgium	Present, Few occurrences					CABI and EPPO (2005)	

Continent/Country/Region	Distribution	Last Reported	Origin	First Reported	Invasive	Reference	Notes
Czechoslovakia	Present					Ben-Dov (1994); CABI and EPPO (2005)	
France	Present, Few occurrences					CABI and EPPO (2005)	
Hungary	Present, Few occurrences					Ben-Dov (1994); CABI and EPPO (2005)	
Italy	Present, Few occurrences					CABI and EPPO (2005)	
Poland	Present, Few occurrences					Ben-Dov (1994); CABI and EPPO (2005)	
Portugal	Present, Few occurrences					Ben-Dov (1994); CABI and EPPO (2005)	
-Madeira	Present					CABI and EPPO (2005)	
Russia	Present, Few occurrences					CABI and EPPO (2005)	
-Central Russia	Present, Few occurrences					CABI and EPPO (2005)	
-Russia (Europe)	Present, Few occurrences					Ben-Dov (1994)	
Spain	Present					Ben-Dov (1994); CABI and EPPO (2005)	
-Canary Islands	Present					Ben-Dov (1994); CABI and EPPO (2005)	
United Kingdom	Present, Few occurrences					Ben-Dov (1994); CABI and EPPO (2005)	
North America							
Antigua and Barbuda	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Bahamas	Present					CABI and EPPO (2005)	
Barbados	Present					UK, CAB International (1966); Ben-Dov (1994); CABI and EPPO (2005)	
Belize	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Bermuda	Present					Ben-Dov (1994); CABI and EPPO (2005)	
British Virgin Islands	Present					CABI and EPPO (2005)	
Cayman Islands	Present					CABI and EPPO (2005)	
Costa Rica	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Cuba	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Dominica	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Dominican Republic	Present					Ben-Dov (1994); CABI and EPPO (2005)	
El Salvador	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Grenada	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Guadeloupe	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Guatemala	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Jamaica	Present					Ben-Dov (1994); CABI and EPPO (2005)	

Continent/Country/Region	Distribution	Last Reported	Origin	First Reported	Invasive	Reference	Notes
Mexico	Present					CABI and EPPO (2005); Arriola Padilla et al. (2016); Villatoro-Moreno et al. (2016)	
Nicaragua	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Panama	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Puerto Rico	Present					UK, CAB International (1966); Ben-Dov (1994); CABI and EPPO (2005)	
Saint Kitts and Nevis	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Saint Lucia	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Saint Vincent and the Grenadines	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Trinidad and Tobago	Present, Widespread					Ben-Dov (1994); CABI and EPPO (2005)	
U.S. Virgin Islands	Present					Ben-Dov (1994); CABI and EPPO (2005)	
United States	Present					CABI and EPPO (2005)	
-California	Present					Ben-Dov (1994); CABI and EPPO (2005)	
-Florida	Present					Ben-Dov (1994); CABI and EPPO (2005)	
-Hawaii	Present, Widespread					Ben-Dov (1994); CABI and EPPO (2005)	
-Louisiana	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Oceania							
Federated States of Micronesia	Present					CABI and EPPO (2005)	
Fiji	Present					CABI (Undated)	Original citation: Hodgson and agowska (2011)
Guam	Present					CABI and EPPO (2005)	
Samoa	Present					CABI and EPPO (2005)	
South America							
Argentina	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Brazil	Present					CABI and EPPO (2005)	
-Parana	Present					Ben-Dov (1994); CABI and EPPO (2005)	
-Rio de Janeiro	Present					CABI and EPPO (2005)	
-Sao Paulo	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Colombia	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Ecuador	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Guyana	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Peru	Present					Ben-Dov (1994); CABI and EPPO (2005)	
Suriname	Present					UK, CAB International (1966); Ben-Dov (1994); CABI and EPPO (2005)	
Venezuela	Present					Ben-Dov (1994); CABI and EPPO (2005)	

Risk of Introduction

Top of page

Immature and adult female N. nipae are readily carried on plants and plant produce and may be injurious when introduced to new geographical areas where they have no natural enemies. Injudicious chemical spraying techniques may reduce the natural enemies of N. nipae allowing them to proliferate.

Hosts/Species Affected

Top of page

N. nipae is polyphagous and attacks 80 genera of plants belonging to 43 families (Ben-Dov, 1994). It is recorded feeding on a wide range of economically important plants, mostly fruit crops and ornamentals, including avocados, bananas, citrus, cocoa, coconuts, custard apples (Annona reticulata), edible figs, guavas, mangoes, oil palm, orchids, pawpaws, pineapples, seaside grapes and soursop (Annona muricata). N. nipae seems to prefer palms, such as species of Areca, Cocos, Kentia, Kentiopsis and Sabal. In temperate regions in Europe and North America, N. nipae often attacks ornamental palms grown under glass.

Host Plants and Other Plants Affected

Top of page

Plant name	Family	Context
Annona	Annonaceae	Main
Annona muricata (soursop)	Annonaceae	Main
Annona reticulata (bullock's heart)	Annonaceae	Main
Annona squamosa (sugar apple)	Annonaceae	Main
Anthurium andreanum	Araceae	Main
Areca	Arecaceae	Main
Arecaceae (plants of the palm family)	Arecaceae	Main
Artocarpus altilis (breadfruit)	Moraceae	Main
Cajanus cajan (pigeon pea)	Fabaceae	Main
Carica papaya (pawpaw)	Caricaceae	Main
Citrus	Rutaceae	Main
Cocos nucifera (coconut)	Arecaceae	Main
Dracaena	Agavaceae	Main
Elaeis guineensis (African oil palm)	Arecaceae	Main
Ficus carica (common fig)	Moraceae	Main
Ficus elastica (rubber plant)	Moraceae	Main
Ipomoea batatas (sweet potato)	Convolvulaceae	Main
Mangifera indica (mango)	Anacardiaceae	Main
Manihot esculenta (cassava)	Euphorbiaceae	Main
Manilkara zapota (sapodilla)	Sapotaceae	Main
Morus (mulberrytree)	Moraceae	Main
Musa (banana)	Musaceae	Main
Nephelium lappaceum (rambutan)	Sapindaceae	Other
Olea (olive)	Oleaceae	Main
Orchidaceae (orchids)	Orchidaceae	Main
Persea americana (avocado)	Lauraceae	Main
Psidium guajava (guava)	Myrtaceae	Main
Sabal (palmetto-palm)	Arecaceae	Main
Solanum tuberosum (potato)	Solanaceae	Main
Strelitzia	Strelitziaceae	Main
Theobroma	Malvaceae	Main
Theobroma cacao (cocoa)	Malvaceae	Main
Tillandsia	Bromeliaceae	Main
Vitis (grape)	Vitaceae	Main
Zingiber (ginger)	Zingiberaceae	Main

Growth Stages

Top of page

Flowering stage, Fruiting stage, Post-harvest, Vegetative growing stage

Symptoms

Top of page

In most cases, the main damage caused by N. nipae is the depletion of plant sap, yellowing of the foliage, reduced vigour of the host, and the deposition on the foliage and fruit of honeydew which serves as a medium for the growth of black sooty moulds. The covering of sooty moulds reduces the photosynthetic area.

List of Symptoms/Signs

Top of page

Sign	Life Stages	Type
Fruit / external feeding		
Fruit / honeydew or sooty mould		
Growing point / external feeding		
Leaves / abnormal colours		
Leaves / honeydew or sooty mould		
Leaves / honeydew or sooty mould		
Stems / external feeding		

Biology and Ecology

Top of page

N. nipae is sexually reproductive but its biology and ecology are poorly known.

Notes on Natural Enemies

Top of page

Bartlett (1978) has given an account of the introduced parasites and predators used to control N. nipae in Hawaii. The parasitoid Pseudaphycus utilis is one of the most important natural enemies of N. nipae. Within about a year of the introduction of P. utilis to Hawaii, N. nipae had almost disappeared from Oahu and was soon almost eradicated from the Hawaiian Islands (Bartlett, 1978).

Natural enemies

Top of page

Natural enemy	Type	Life stages	Specificity	References	Biological control in	Biological control on
Anagyrus dactylopii	Parasite	Nymphs				
Cryptolaemus montrouzieri	Predator	Adults/Nymphs			Bermuda; Puerto Rico; St Kitts Nevis	Annona; Arecaceae; avocados; Cocos nucifera; Erythrina; guavas
Curinus caeruleus	Predator	Adults/Nymphs				
Curinus coeruleus	Predator	Adults/Nymphs			Hawaii	avocados
Hyperaspis jucunda	Predator	Adults/Nymphs			St Kitts Nevis	Annona; avocados; Cocos nucifera
Hyperaspis silvestri	Predator	Adults/Nymphs				
Hyperaspis silvestrii	Predator	Adults/Nymphs			Hawaii	avocados
Mallada basalis	Predator					
Pseudaphycus utilis	Parasite	Nymphs			Bermuda; Hawaii; Puerto Rico; St Kitts Nevis	Annona; Arecaceae; avocados; Cocos nucifera; Erythrina; guavas
Pseudiastata nebulosa	Predator	Adults/Nymphs			Hawaii	avocados
Scymnus binaevatus	Predator	Adults/Nymphs			Bermuda	Annona; Arecaceae; avocados; guavas
Zarhopalus clavatus	Parasite	Nymphs				

Impact

Top of page

N. nipae is generally of little economic importance, but it has become a pest of avocados and guavas in Hawaii, Bermuda and Puerto Rico (see Ben-Dov, 1994 for further references). Ant-attended infestations of N. nipae have been recorded causing damage to coconut plantations in Guyana, together with the coconut scale Aspidiotus destructor (Raj, 1977). N. nipae is also a pest of ornamental palms. The damage caused by N. nipae may result in ornamental plants, fruit, cut flowers and foliage losing their market value.

Detection and Inspection

Top of page

Heavy infestations of N. nipae are conspicuous because of the presence of distinct waxy adult females, numerous waxy male tests and sooty mould growing on the honeydew. They usually occur on the undersides of the foliage.

Similarities to Other Species/Conditions

Top of page

N. nipae should be distinguished from N. aurilanatus, a pest usually found on Araucariaceae, which has spread to many tropical and subtropical regions. N. aurilanatus is easily distinguished because it has numerous ventral multilocular pores on all abdominal segments, no dorsal cephalic cluster of conical setae above the base of each antenna, and is a pest of conifers.

N. nipae, in contrast, has fewer ventral multilocular pores and they are confined to the last four abdominal segments. It also has a distinct dorsal cephalic cluster of conical setae above the base of each antenna and is rarely, if ever, found on a coniferous host.

Prevention and Control

Top of page

Due to the variable regulations around (de)registration of pesticides, your national list of registered pesticides or relevant authority should be consulted to determine which products are legally allowed for use in your country when considering chemical control. Pesticides should always be used in a lawful manner, consistent with the product's label.

Chemical Control

In Hawaii, the efficacy of a series of methods were evaluated as post-harvest treatments to eliminate N. nipae, along with other mealybugs, scale insects and aphids, from tropical cut flowers and foliage before shipment. A series of insecticidal dips were tested and the most effective was found to be a combination dip for at least 5 minutes in an insecticidal soap composed of potassium salts of fatty acids with fluvalinate (Hansen et al., 1992a). Vapour heat treatment was found to kill mealybug adults and nymphs after 1 hour at 46.6°C; and nymphs were killed after 2 hours at 45.2°C (Hansen et al., 1992b). Hydrogen cyanide fumigation treatment was found to kill N. nipae nymphs on palms (Hansen et al., 1991).

Infestations of N. nipae were eliminated in coconut plantations by chemically controlling Azteca ants which maintained and protected the mealybug colonies (Raj, 1977).

Biological Control

Bartlett (1978) records successful biological control of N. nipae in Hawaii by Pseudaphycus utilis. In Puerto Rico some improvement was reported following the introduction of Cryptolaemus montrouzieri, but good control was later obtained with the establishment of P. utilis (Bartlett, 1978).

References

Top of page

APPPC, 1987. Insect pests of economic significance affecting major crops of the countries in Asia and the Pacific region. Technical Document No. 135. Bangkok, Thailand: Regional Office for Asia and the Pacific region (RAPA).

Arriola Padilla VJ, Estrada Martínez E, Romero Nápoles J, González Hernández H, Pérez Miranda R, 2016. Scale insects (Hemiptera: Coccomorpha) on ornamental plants in greenhouses from the central zone of the Morelos state, Mexico. (Insectos escama (Hemiptera: Coccomorpha) en plantas ornamentales en viveros de la zona centro del estado de Morelos, México.) Interciencia, 41(8):552-560. http://www.interciencia.org/v41_08/indexe.html

Bartlett BR, 1978. Pseudococcidae. In: Clausen CP, ed. Introduced Parasites and Predators of Arthropod Pests and Weeds: a World Review. Agriculture Handbook No. 480, 137-170.

Beardsley JW, 1960. A preliminary study of the males of some Hawaiian mealybugs (Homoptera: Pseudococcidae). Proceedings of the Hawaiian Entomological Society, 17:199-243.

Ben-Dov Y, 1994. A systematic catalogue of the mealybugs of the world (Insecta: Homoptera: Coccoidea: Pseudococcidae and Putoidae) with data on geographical distribution, host plants, biology and economic importance. Andover, UK; Intercept Limited, 686 pp.

Caasi-Lit MT, Lit IL Jr, Larona AR, 2012. Expansion of local geographic and host ranges of Nipaecoccus nipae (Maskell) (Pseudococcidae, Hemiptera) in the Philippines with new records of predators and attending ants. Philippine Journal of Crop Science, 37(1):47-56.

CABI/EPPO, 2005. Nipaecoccus nipae. Distribution Maps of Plant Pests, No. 220. Wallingford, UK: CAB International.

CIE, 1966. Distribution Maps of Pests, Series A, No. 220. Wallingford, UK: CAB International.

Ferris GF, 1950. Atlas of the Scale Insects of North America. Series V. The Pseudococeidae (Part I). Stanford Univ. Pr., California; London, G. Cumberlege, Oxford Univ. Pr., vii+ 278 pp.

Hansen JD, Hara AH, Chan HT Jr, Tenbrink VL, 1991. Efficacy of hydrogen cyanide fumigation as a treatment for pests of Hawaiian cut flowers and foliage after harvest. Journal of Economic Entomology, 84(2):532-536

Hansen JD, Hara AH, Tenbrink VL, 1992. Insecticidal dips for disinfesting commercial tropical cut flowers and foliage. Tropical Pest Management, 38(3):245-249

Hansen JD, Hara AH, Tenbrink VL, 1992. Vapor heat: a potential treatment to disinfest tropical cut flowers and foliage. HortScience, 27(2):139-143

Hodgson CJ, Lagowska B, 2011. New scale insect (Hemiptera: Sternorrhyncha: Coccoidea) records from Fiji: three new species, records of several new invasive species and an updated checklist of Coccoidea. Zootaxa, 2766:29. http://www.mapress.com/zootaxa/

Josephrajkumar A, Rajan P, Chandrika Mohan, Thomas RJ, 2012. New distributional record of buff coconut mealybug (Nipaecoccus nipae) in Kerala, India. Phytoparasitica, 40(5):533-535. http://www.springerlink.com/content/d4p41486h4920373/

McKenzie HL, 1967. Mealybugs of California, with taxonomy, biology, and control of North American species (Homoptera: Coccoidea: Pseudococcidae). viii+526 pp.

Rai BK, 1977. Damage to coconut palms by Azteca sp. (Hymenoptera: Formicidae) and insecticidal control with bait, in Guyana. Bulletin of Entomological Research, 67(1):175-183

Schotman CYL, 1989. Plant pests of quarantine importance to the Caribbean. RLAC-PROVEG, No. 21:80 pp.

Tokihiro G, 2006. List of mealybugs (Homoptera: Pseudococcidae) intercepted at Japanese plant quarantine mainly from areas without a record of distribution. Research Bulletin of the Plant Protection Service, Japan, No.42:59-61. http://www.pps.go.jp/

Villatoro-Moreno, H., Cisneros, J., Gómez, J., Infante, F., Castillo, A., 2016. Mealybugs (Hemiptera: Pseudococcidae) associated with rambutan (Nephelium lappaceum L.) in Chiapas, Mexico., Journal of the Kansas Entomological Society, 89(4):289-296 http://www.bioone.org/loi/kent

Waterhouse DF, 1993. The Major Arthropod Pests and Weeds of Agriculture in Southeast Asia. ACIAR Monograph No. 21. Canberra, Australia: Australian Centre for International Agricultural Research, 141 pp.

Williams DJ, 1985. Australian mealybugs. London, UK; British Museum (Natural History), 431 pp.

Williams DJ, 2004. Mealybugs of Southern Asia. Kuala Lumpur, Malaysia: Southdene SDN, 442-445.

Williams DJ, Granara de Willink MC, 1992. Mealybugs of Central and South America. Wallingford, UK: CAB International.

Distribution References

APPPC, 1987. Insect pests of economic significance affecting major crops of the countries in Asia and the Pacific region. In: Technical Document No. 135, Bangkok, Thailand: Regional Office for Asia and the Pacific region (RAPA).

Arriola Padilla V J, Estrada Martínez E, Romero Nápoles J, González Hernández H, Pérez Miranda R, 2016. Scale insects (Hemiptera: Coccomorpha) on ornamental plants in greenhouses from the central zone of the Morelos state, Mexico. (Insectos escama (Hemiptera: Coccomorpha) en plantas ornamentales en viveros de la zona centro del estado de Morelos, México.). Interciencia. 41 (8), 552-560. http://www.interciencia.org/v41_08/indexe.html

Ben-Dov Y, 1994. A systematic catalogue of the mealybugs of the world (Insecta: Homoptera: Coccoidea: Pseudococcidae and Putoidae) with data on geographical distribution, host plants, biology and economic importance. In: A systematic catalogue of the mealybugs of the world (Insecta: Homoptera: Coccoidea: Pseudococcidae and Putoidae) with data on geographical distribution, host plants, biology and economic importance. Andover, UK: Intercept Limited. 686 pp.

Caasi-Lit M T, Lit I L Jr, Larona A R, 2012. Expansion of local geographic and host ranges of Nipaecoccus nipae (Maskell) (Pseudococcidae, Hemiptera) in the Philippines with new records of predators and attending ants. Philippine Journal of Crop Science. 37 (1), 47-56.

CABI, EPPO, 2005. Nipaecoccus nipae. [Distribution map]. In: Distribution Maps of Plant Pests, Wallingford, UK: CAB International. Map 220.

CABI, Undated. Compendium record. Wallingford, UK: CABI

CABI, Undated a. CABI Compendium: Status inferred from regional distribution. Wallingford, UK: CABI

CABI, Undated b. CABI Compendium: Status as determined by CABI editor. Wallingford, UK: CABI

Josephrajkumar A, Rajan P, Chandrika Mohan, Thomas R J, 2012. New distributional record of buff coconut mealybug (Nipaecoccus nipae) in Kerala, India. Phytoparasitica. 40 (5), 533-535. http://www.springerlink.com/content/d4p41486h4920373/

Tokihiro G, 2006. List of mealybugs (Homoptera: Pseudococcidae) intercepted at Japanese plant quarantine mainly from areas without a record of distribution. Research Bulletin of the Plant Protection Service, Japan. 59-61. http://www.pps.go.jp/

UK, CAB International, 1966. Nipaecoccus nipae. [Distribution map]. In: Distribution Maps of Plant Pests, Wallingford, UK: CAB International. Map 220.

Villatoro-Moreno H, Cisneros J, Gómez J, Infante F, Castillo A, 2016. Mealybugs (Hemiptera: Pseudococcidae) associated with rambutan (Nephelium lappaceum L.) in Chiapas, Mexico. Journal of the Kansas Entomological Society. 89 (4), 289-296. http://www.bioone.org/loi/kent DOI:10.2317/0022-8567-89.4.289

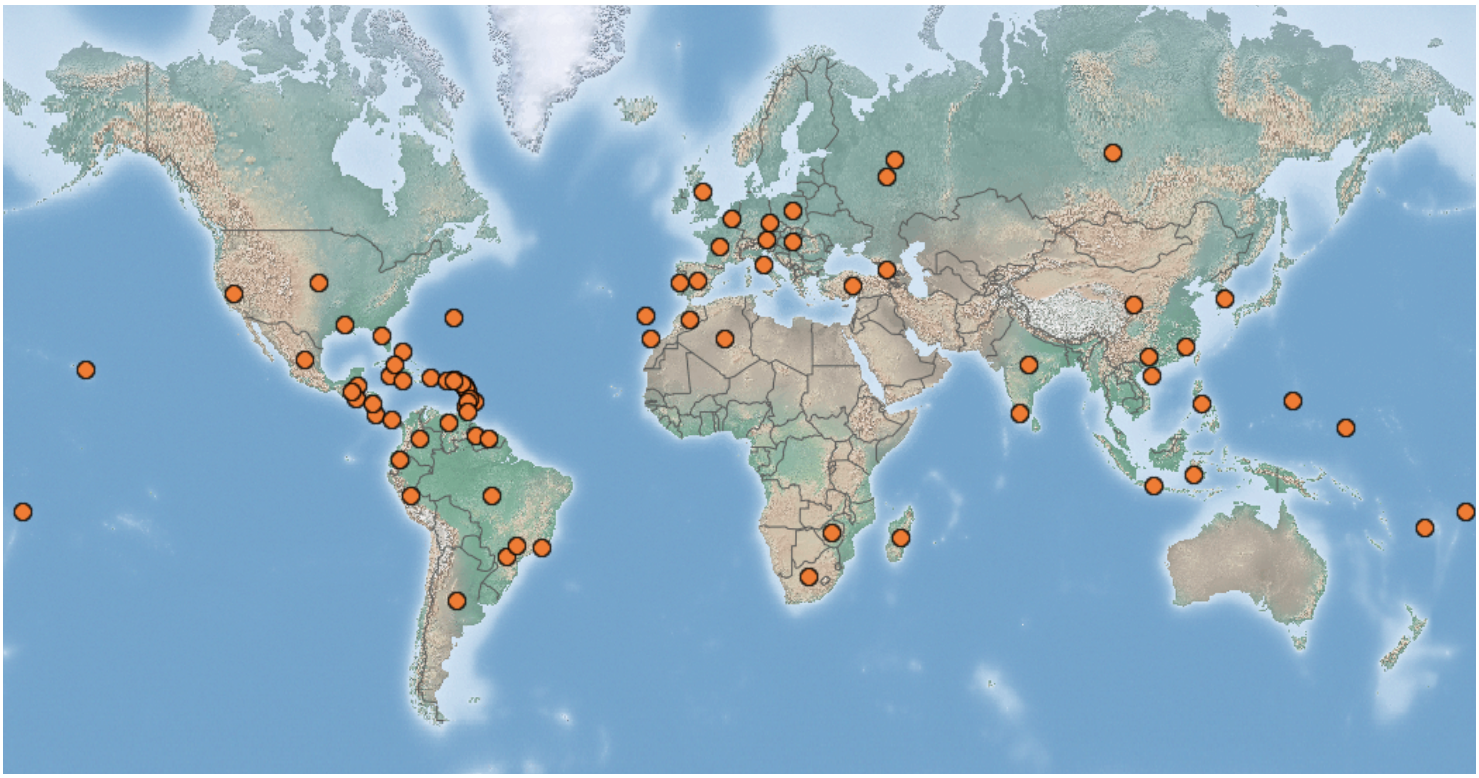
Waterhouse D F, 1993. The major arthropod pests and weeds of agriculture in Southeast Asia. Canberra, Australia: ACIAR. v + 141 pp.

Distribution Maps

Top of page

You can pan and zoom the map

Save map



Analyze by: Source
- CABI Summary Data

Analyze by: Extent
- Few occurrences
- Not recorded
- Widespread

Download KML file Download CSV file

Next: Identification of Nipaecoccus (Hemiptera: Coccomorpha:... >>
Return to Search Results

Top of page

/