Pacific Pests, Pathogens & Weeds - Fact Sheets

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Ramie moth (358)

Photo 1. Early-stage larvae of the ramie moth, *Arcte coerula*, feeding together on underside of a leaf.

Photo 2. Early stages of the ramie moth, *Arcte coerula,* make holes in the leaves.

Photo 3. Later-stage larvae of the ramie moth, Arcte *coerula* strip the leaves, leaving only the main veins.

Photo 4. Larva of the ramie moth, *Arcte coerula.* Note the distinctive colours and long white hairs.

Photo 5. Larva of the ramie moth, *Arcte coerula.*

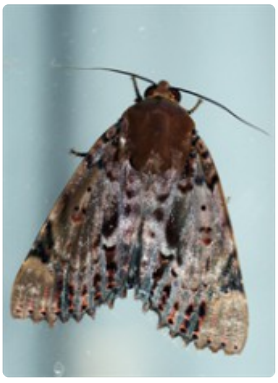

Photo 6. Adult ramie moth, *Arcte coerula.*

Photo 7.Adult ramie moth, *Arcte coerula*, showing the colours of the wings.

Photo 8. The ramie moth, *Arcte coerula*, attracted to rotting bananas (Fiji).

Common Name

Ramie moth, banana moth (name given in this fact sheet). The name 'ramie' is a common name for the main host, *Boehmeria nivea.*

Scientific Name

Arcte coerula; previously, *Cocytodes coerulea.* It is a moth of the Noctuidae.

Distribution

Restricted. Asia, Oceania. It recorded from Australia (Queensland and Norfolk Island), Fiji, and Papua New Guinea.

Hosts

Boehmeria species, e.g., *Bohmeria nivea* (ramie), *Boehmeria nipononivea (*Japanese false nettle), *Boehmeria australis* (nettle tree), and others in the nettle family (Urticaceae), *Cypholophu*s, *Debregeasia*, *Girardinia*, and *Pipturus*). Ramie is also called China grass or white ramie in China.

Ramie is an important natural fibrecrop (used to make cloth, ropes, and high-quality clothes), grown in China, India, Southeast Asia and Pacific rim countries. However, it is also rich in protein, and the shoots and leaves can be used as fodder for cattle and geese. In Fiji, it has been recorded on bunches of over-ripe bananas.

Symptoms & Life Cycle

The caterpillars or larvae do the damage by defoliating plants. Early stages feed together making holes in the leaves (Photos 1&2), later ones strip the leaves leaving only the major veins (Photo 3).

Eggs are laid on the underside of *Boehmeria* leaves. The mature larvae are yellow with a wide black band along each side containing a row of red spots, and narrow black lines across the back (Photos 4&5). The head and legs are black. Sparse, stiff long white hairs cover the body. When threatened, the larvae swing the front part of the body from side to side. The caterpillars darken with age, and grow up to 10 cms.

The adult moth has dark brown forewings with black and silvery markings, and light brown patches at the tips (Photo 6). The hindwings are brown with wide blue spots or lines (Photo 7). The adult moths are attracted to ripe fruit of plantains (Photo 8).

Impact

In China, the ramie moth is said to be a destructive pest, causing severe destruction.

Detection & inspection

Look for large vibrant yellow and black larvae perforating leaves of *Boerhmeria* when young and stripping all but the main veins when old. Look for dark moths with brown tips to the forewings, and distinctive blue patterns on the hindwings.

Management

There is very little to report on the management of this pest, except for the use of pesticides. No natural enemies have been reported. The cultural control recommendations are those that are standard for moth larvae.

CULTURAL CONTROL

Before planting:

- Avoid overlapping crops of *Boehmeria* (ramie).
- Avoid planting new crops next to old where the larvae are present.
- Leave at least 3 month between crops.

During growth:

- Visit the crop frequently and regularly: twice a week is recommended, to check if there are caterpillars attacking the leaves. If found, do the following:
    - Check the young leaves, and those where only the veins are left. Look for faeces on the leaves. They are the signs that

caterpillars are present.

- Hand remove the larvae if only a few are present, and the area of the planting is small; if the area is large or if the infestation of larvae is high, consider using a pesticide. But consider carefully which ones to use.

After harvest:

- Collect and burn or bury as much of the crop as possible.

CHEMICAL CONTROL

- Use botanical insecticide, such as, neem, derris, pyrethrum and chilli (with the addition of soap), or microbial, commercial, products that contain disease-causing organisms, such as spinosad (Success) and Bt - *Bacillus thuringiensis* subspecies *kurstaki*.
- Note, *Derris*, brought many years ago to Solomon islands from Papua New Guinea, is effective as a spray. It contains rotenone, an insecticide, so it should be used with caution. There may be varieties of *Derris* (fish poisons) in your country that can be tried (**see Fact Sheet no. 056**).
- Synthetic pyrethroids are likely to be effective, but will also kill natural enemies (although none have yet to be reported).

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Information Coffs Harbour Butterfly House. (http://lepidoptera.butterflyhouse.com.au/calp/coerula.html); and (Photos ???) from Liangbin Zeng, *et al.* (2016) Transcriptome analysis of ramie (*Boehmeria nivea* L. Gaud.) in response to ramie moth (*Cocytodes coerulea* Guenée) infestation. BioMed Research International. Article ID 3702789 (http://dx.doi.org/10.1155/2016/3702789). Photo 1 Masaki Ikeda, Japan. (https://commons.wikimedia.org/wiki/File:Arcte_coerula_larva_08Oct16.jpg). Photo 2 Patrick Randall, Ramie moth, *Arcte coerulea* (Guenee, 1952), Norwood, MA. (https://www.flickr.com/photos/animaliaproject/6512086055). Photo 4 Alexey Yakovlev, Moscow, Russia. (https://en.wikipedia.org/wiki/Arcte_coerula#/media/File:Arcte_coerula_(Erebidae-_Catocalinae)_(4199144357).jpg). Photo 5 CSIRO/BIO Photography Group, Centre for Biodiversity Genomics. http://v3.boldsystems.org/index.php/Taxbrowser_Taxonpage?taxid=308358).

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