



## Pacific Pests and Pathogens - Fact Sheets

### Coconut false smut (311)



Photo 1. Pustules of false smut, *Graphiola cocoinea*, breaking through the surface of a coconut leaf.



Photo 2. Pustules of coconut false smut, *Graphiola cocoinea*, that produce spores of the fungus.

#### Common Name

Coconut false rust, coconut leaf smut

#### Scientific Name

*Graphiola cocoinea*. Another species, *Graphiola phoenicis* is also present in the Pacific islands, in Fiji and Samoa.

#### Distribution

Worldwide. South (India) and Southeast Asia, South America (Brasil), Oceania. It is recorded from Cook Islands, French Polynesia, Marshall Islands, New Caledonia, New Zealand, Niue, Samoa, Tonga, and Vanuatu.

#### Hosts

*Graphiola cocoinea* infects coconut and *Livistona* species. *Graphiola phoenicis* infects a wide range of palms; it infect coconuts, but the main hosts are *Phoenix canariensis* (Canary Island date palm) and *Phoenix dactylifera* (date palm).

#### Symptoms & Life Cycle

Although called a leaf "smut", it is not a true smut (e.g., see Fact Sheet no. 046), and belongs to a different taxonomic class. Small, grey or black pustules, 1.5 mm diameter, emerge through the leaf, mainly on the top surface (Photo 1). They protrude some distance above the leaf surface, and produce the spores and sterile threads of the fungus (Photo 2). After discharge the pustules become cup-shaped.

Spread occurs by spores blown in the wind and rain. Humid conditions promote the development of the disease as the spores need water for germination and infection.

#### Impact

It is very unlikely that the false smut would impact nut yield. It occurs on the oldest leaves of the palms. It is possible that it might be considered a cosmetic disease where coconut palms are grown for landscaping (i.e., for their appearance) rather than their nut production.

#### Detection & Inspection

Look for the black pustules that erupt through the surface of the leaves, mainly on the underside. The filaments that stream from the pustules are distinctive.

#### Management

Attempts to control this disease on coconuts in a plantation would not be economic, especially as there is no

evidence that it reduces nut yield. If the disease were to be severe in the nursery, then both cultural control and chemical control measure might need to be applied.

#### CULTURAL CONTROL

Ideally, nuts for germination should be planted in polythene bags and spaced at a distance which allows air movement around the plants, at least 1m. If nuts are left to germinate and grow on the ground, this is not possible. If seedlings in polythene bags need water, then it should be applied below the canopy.

#### CHEMICAL CONTROL

If fungicides were required in the nursery, use copper products or mancozeb as protectants, or thiophanate methyl (sometimes formulated with chlorothalonil) as a systemic product.

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Photos 1&2 (taken by Eric McKenzie), and used in this fact sheet, appeared previously in McKenzie E (2013) *Graphiola cacoina* PaDIL - <http://www.padil.gov.au>.

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