Pacific Pests, Pathogens, Weeds & Pesticides - Online edition

Noni shot-hole disease (313)

Common Name

Noni shot-hole disease, noni frog-eye

Scientific Name

Guignardia morindae; this is the sexual state. and *Phyllosticta morindae is* the asexual state, i.e., spores are produced without mating types combining. Other names previously used are *Phyllostictina morindae* and *Physalospora morindae*.

Distribution

Southeast Asia, Oceania. It is reported from Australia, American Samoa, Cook Islands, Federated States of Micronesia, Fiji (Rotuma), French Polynesia, Guam, Kiribati, Niue, Samoa, Tonga, Tuvalu, Vanuatu, and Wallis & Futuna.

Hosts

Noni, *Morinda citrifolia*, and other *Morinda* species.

Symptoms & Life Cycle

Frog-eye or shot-hole disease. Spots roughly circular, up to 2 cm diam., yellowish, grey or reddish brown with narrow red borders, and black fungal fruiting bodies sometimes visible within spot (Photos 1&2). The centre of the spots, where the fungus forms spores is transparent and often falls from the leaf to produce a 'shot-hole' effect (Photos 3&4) - hence the name.

Spread of the disease occurs when the spores ooze from the fruitbodies during wet weather and are splashed by rain or carried in the wind.

Photo 1. Leaf spots on noni caused by *Guignardia morindae*, reddish brown with a thin red border.

Photo 2. Reddish-brown spots of *Guignardia morindae* on noni leaf.

Photo 3. *Guignardia morindae* symptoms on noni leaves. Fungal fruiting bodies are visible within the spots, and the centres of some spots are falling out.

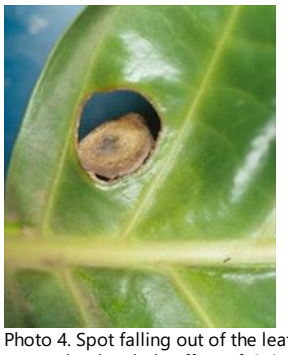

Photo 4. Spot falling out of the leaf blade to create the shot-hole effect of *Guignardia morindae* on noni.

Impact

It is unlikely that the leaf spots will have an economic impact on noni by causing premature leaf fall and reducing fruit yields; however, there has been no research to check.

Detection & inspection

Look for the near circular leaf spots with pale brown papery-thin centres, up to 2 cm diameter, completely or partly surrounded by yellow halos. Look to see centres of the spots fall out, giving the shot-hole effect. Black pin point fruit bodies can be seen in the spots.

Management

CULTURAL CONTROL

The lack of information on noni shot-hole disease makes it difficult to give recommendations on its control. There has been no research on it, so there is no evidence that the damage causes premature defoliation that affects yield, or if it does how much. Even if yields were reduced, it would be difficult to decide what control measures to implement: noni is a medium size tree grown in small plantations or in backyards so it would be difficult to apply cultural techniques, such of leaf removal or pruning to reduce spore infection.

Collecting the diseased leaves and burning them might be useful, but many of the spots fall out, and these contain the fruiting bodies, but would be too small to collect.

It is possible that wider than normal spacing would lower infection, especially as this might

CHEMICAL CONTROL

There are no reports of attempts to control this disease with fungicides; however, should infections be so severe that fungicides were needed, use copper products, chlorothalonil or mancozeb.

When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval. **Recommendations will vary with the crop and system of cultivation. Expert advice on the most appropriate pesticide to use should always be sought from local agricultural authorities.**

AUTHORS Grahame Jackson & Eric McKenzie

Photos 1-4 (taken by Eric McKenzie), and used in this fact sheet, appeared previously in McKenzie E (2013) *Guignardia morindae* PaDIL - (http://www.padil.gov.au); and from Noni shot hole (2006) College of Tropical Agriculture and Human Resources, University of Hawai'i at Manoa. (https://www.ctahr.hawaii.edu/noni/shot_hole.asp#:~:text=Pathogen%3A%20Noni%20shot%20hole%20is,specks%20on%20leaves%20and%20bracts.).

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