Pacific Pests, Pathogens, Weeds & Pesticides - Online edition

Taro rhabdovirus diseases (089)

Summary

- Narrow distribution. Philippines (taro vein chlorosis), Oceania (taro vein chlorosis and Colocasia bobone disease). The viruses causing these diseases are:
    - CBDV - infects all taro. Virus causes: i) dark green distorted patches in leaves that then recover, ii) *alomae* with other (unknown) viruses - plants (called 'male' taro in Solomon Islands) die. In a few *alomae* resistant varieties (called 'female' taro in Solomon Islands) CBDV causes *bobone* - stunted, thickened, green twisted leaves that eventually recover and appear healthy.
    - TaVCV - infects all taro. Virus causes bright yellow, feather-like patterns, often above the veins at margins of leaves. The veins turn brown with age.
- Spread of CBDV by planthoppers; spread of TaVCV presumed to be planthoppers. TaVCV exists as at least two strains, Fiji and Vanuatu.
- Natural enemies: egg-sucking bug, *Cyrtorhinus*.
- Cultural control: remove plants with *alomae* as soon as seen (cover plant with e.g., rice bag, pull out capturing planthoppers) and burn; avoid growing varieties susceptible to *alomae*; grow 'female' taro if varieties available; avoid planting near plots with *alomae*.
- Chemical control: use synthetic pyrethroids against planthoppers, but they will likely kill natural enemies. Test Derris (fish poison).

Common Name

Bobone and taro vein chlorosis.

Scientific Name

Viruses assoicated with these two rhabdoviruses are: i) *bobone* = *Colocasia bobone rhabdovirus* (CBDV) and ii) taro vein chlorosis = *Taro vein chlorosis virus* (TaVCV). There is evidence that TaVCV in Fiji and Samoa are different strains.

Photo 1. The dark green distorted area on the leaf is typical of CBDV in the 'male' taro, the common type of taro in the Pacific islands. This is not a serious disease as only 1-2 leaves are affected.

Photo 2. *Bobone* on the 'female' taro variety *Oga* showing stunted distorted leaves (Malaita, Solomon Islands) after infection by CBDV.

Photo 3. Leaf infected with TaVCV showing the yellowing is along the smaller veins giving a feather-like symptom.

Photo 4. Leaf with symptoms of TaVCV. Note the yellow feather patterns are starting to decay as the leaf ages; this does not happen with *Dasheen mosaic virus*.

Photo 5. Feather like pattern on a leaf infected with TaVCV. Note the insects on the leaf are *Tarophagus* sp., which are likely to spread this virus.

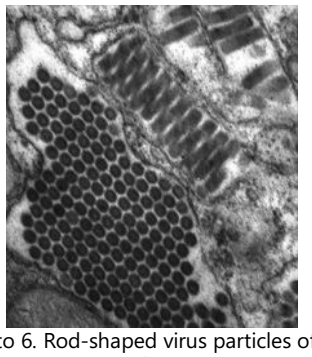

Photo 6. Rod-shaped virus particles of TaVCV in a taro leaf. The virus particles can be seen lengthways and end on.

Photo 7. The Philippine egg-sucking bug, *Cyrtorhinus fulvus*.

Photo 8. Nymphs, winged and wingless adults of *Tarophagus* species, the planthopper that spreads *Colocasia bobone disease rhabdovirus,* and most probably *Taro vein chlorosis virus*.

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Information from Lethal taro viruses - still unresolved. (https://www2.pestnet.org/other-pacific-plant-protection-stories/); and Carmichael A, *et al.* (2008) TaroPest: an illustrated guide to pests and diseases of taro in the South Pacific. ACIAR Monograph No. 132, 76 pp. (https://lrd.spc.int/about-lrd/lrd-project-partners/taropest); and Revill RA, *et al.* 2005) Incidence and distribution of viruses of Taro (*Colocasia esculenta*) in Pacific island countries. Australasian Plant Pathology 34: 327-331; and Shaw DE, *et al.* (1979) Virus diseases of taro (*Colocasia esculenta*) and *Xanthosoma* sp. in Papua New Guinea. Papua New Guinea Agricultural Journal 30: 71–97; and from Macanawai AR, *et al.* (2005) Investigations into the seed and mealybug transmission of the *Taro bacilliform virus*. Australasian Plant Pathology 34: 73-76. Photo 6 Rothamsted Research, Harpenden, UK.

Produced with support from the Australian Centre for International Agricultural Research under project PC/2010/090: *Strengthening integrated crop management research in the Pacific Islands in support of sustainable intensification of high-value crop production,* implemented by the University of Queensland and the Secretariat of the Pacific Community.

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