

Taro *alomae* & bobone (001)

Summary

- Narrow distribution. In Papua New Guinea and Solomon Islands. Only on taro. Important virus diseases.
- Plants are stunted with twisted, sometimes with thickened, leaves. Most varieties die from *alomae*; a few are resistant but develop bobone. Taro with bobone recover and look healthy.
- Spread is in planting material and by insects; taro planthoppers are especially important.
- Cultural control: make new gardens far from old ones; remove plants with *alomae* as soon as symptoms seen, and burn or bury them; do not take suckers for planting from gardens with *alomae*; plant varieties resistant to *alomae*, even if susceptible to bobone.
- Chemical control: use synthetic pyrethroids to kill planthoppers.

Common Name

Alomae and *bobone*

Scientific Name

Several viruses have been identified in plants with these diseases, but it is not yet certain which ones are the cause. The viruses associated with these diseases are: *Colocasia bobone disease rhabdovirus* (CBDV); *Taro vein chlorosis rhabdovirus* (TaVCRV); *Taro badnavirus* (TaBV); *Dasheen mosaic potyvirus* (DsMV). In recent years, a tenuivirus has been detected, as well as genome sequences of *Colocasia bobone disease-associated virus* (CBDaV), but it is not yet clear if this is the same as CBDV.



Photo 1. First signs of *alomae* on the mother plant and suckers (Malaita, Solomon Islands). Note the stunted, tightly rolled, yellow leaves.



Photo 2. Stunting on the mother plant and suckers probably caused by *alomae* (Madang, Papua New Guinea). In this case the plant has stayed green.



Photo 3. Mother plant and suckers with *alomae*, starting to die (Madang, Papua New Guinea).



Photo 4. Plant destroyed by *alomae*: one live shoot and many dead leaves remaining (Madang, Papua New Guinea).



Photo 5. An outbreak of *alomae*. Note the collapse of the older leaves, and the young ones stay rolled. It is similar to a wilt. These symptoms are typical of an *alomae* epidemic on plants that had been growing rapidly.



Photo 6. Possibly *bobone* disease (the plant seems to be recovering) on a sucker (Madang, Papua New Guinea).

Note the galls on the petiole, or leaf stalk.



Photo 7. *Bobone* on the 'female' taro variety *Oga* showing stunted distorted leaves (Malaita, Solomon Islands).



Photo 8. Typical symptoms of *bobone* with stunted, twisted green leaves (Madang, Papua New Guinea). The plant will recover from these symptoms producing leaves that look healthy, but the plant will remain infected by the virus.



Photo 9. Galls on the leaf stalk, petiole, of a plant that is probably in the early stages of *alomae* (Madang, Papua New Guinea). Early stages of *alomae* and *bobone* can be similar, and unless the variety is known it is not possible to tell which disease is present.



Photo 10. *Taro vein chlorosis virus* in taro (Tanafoli, Vanuatu). It is common to find leaves with infections on part of the leaf with edges rolled down. The symptom is very similar to that of *Taro badnavirus*, except that the colour of the veins is brighter.



Photo 11. *Taro badnavirus* showing a vein chlorosis symptom (Safaatoa, Samoa). Compare with the symptoms of *Taro vein chlorosis virus* (Photo 10).



Photo 12. Symptom of *Dasheen mosaic virus* in taro; notice the pale green feather-like pattern between the leaf veins. Often these patterns show along the main veins.



Photo 13. *Dasheen mosaic virus* symptoms on *Alocasia*.



Photo 14. Philippine egg-sucking bug, *Cyrtorhinus fulvus*.



Photo 15. Nymphs, winged and wingless adults of *Tarophagus* sp., the planthopper that spreads *Colocasia*

bobone disease rhabdovirus, and most probably *Taro vein chlorosis virus*, another rhabdovirus.



Photo 16. Adult *Tarophagus* sp. on leaf of taro.

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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 14 Mike Furlong, University of Queensland, Australia.

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