Survey of Virus Diseases of Taro, Colocasia esculenta, on the Aunu'u Island of American Samoa

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Abstract

Taro, *Colocasia esculenta*, is the most important staple crop in American Samoa, especially in Aunu'u, a small (1.5 km^2) island, approximately 2 km southeast of the main island of Tutuila. However, the sustainability of taro production is threatened by the occurrence of numerous diseases and pests, as evidenced by the leaf blight (*Phytophthora colocasiae*) epidemic that devastated the Samoan taro production in early 1990s. Crop losses due to viruses alone have been estimated at 20 - 60%. The objective of this study was to investigate the incidence of virus diseases of taro in Aunu'u.

Overall, 112 leaf samples, mostly (85%) from cultivars "Talo Manua" and "Palau 10", were collected from seven major farms on the Island. Genomic DNA and total RNA were extracted from each sample, and the extracts subjected to PCR and RT-PCR, using primers that amplify specific regions of the target virus genome. The reactions were resolved on 1.5% agarose gel electrophoresis, and gels were analyzed using a GelDoc EZ documentation system.

Dasheen Mosaic Virus (DsMV) was the predominant virus in Aunu'u, infecting 79% of plants, followed by Taro Bacilliform Virus (TaBV), with 46%. Many (40%) of the plants infected with DsMV were co-infected with TaBV. Cultivar "Talo Manua" was more susceptible to both viruses than "Palau 10". No other taro virus was detected. This is the first report on taro virus diseases in Aunu'u. It would be desirable to extend this type of survey to other islands of American Samoa.

Keywords

American Samoa; Aunu'u; Colocasia esculenta; Taro; Virus

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ABSTRACT

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