Distribution and Detection of Citrus Tatterleaf Virus by ELISA Test with Monoclonal Antibodies

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ABSTRACT. Since the first report on citrus tatterleaf virus (CTLV) infection in Taiwan in 1984, additional citrus cultivars, including Murcott and Satsuma mandarin, Washington navel, Sekan and non-acid sweet orange, Haili-Tankan tangor, grapefruit, and Wentan pummelo were found to be infected singly or, most commonly, co-infected with citrus tristeza virus. CTLV was also detected in some citrus cultivars from other Asian countries including calamandarin, mandarin, and pink pummelo from the Philippines, Som Keowan mandarin from Thailand, and Satsuma orange from Korea. Some strains of CTLV were differentiated by symptoms in Rusk and Troyer citrange. Purified virus preparations were obtained from infected *Chenopodium quinoa* after clarification with bentonite and two cycles of low and high speed differential centrifugation. Ascites fluid containing polyclonal antibodies against the virus was prepared from the Balb/c mice immunized with the virus preparation. Hybridoma cell lines secreting specific monoclonal antibodies against CTLV were obtained. The titer of one monoclonal antibody (MAb-5) in ascites fluid reached 1:8,000 using an indirect ELISA test. CTLV was detected in infected citrus leaves with or without symptoms by ELISA. Better results were obtained by using 0.01 M potassium phosphate buffer containing 0.5% bentonite for sample preparation.