

Investigation of Biological Properties, Double-Stranded RNA Patterns and Antigen Concentration in Citrus Species Infected with Citrus Tristeza Virus

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Biological properties and dsRNA patterns of one Cyprus and three Turkish isolates of citrus tristeza virus (CTV) were investigated. In addition, CTV antigen concentration and effect of tissue sampling time from naturally infected Shamouti sweet orange trees grown in the field of Icel Province, Turkey, were also determined. The Cyprus isolate showed vein clearing symptoms on grapefruit, 'Madam Vinous' and Mexican lime and stem pitting symptoms on Mexican lime. The three Turkish isolates showed only vein clearing symptoms on Mexican lime. All four isolates showed a full-length major double-stranded RNA (dsRNA) band of 13.3×10^6 Da mol.wt in extracts from infected Madam Vinous sweet orange trees, and major or minor dsRNA bands with 2.0, 0.8 and 0.5×10^6 mol.wt. All seven different citrus varieties inoculated with the Igdır (D) strain contained full-length dsRNA. The additional two dsRNA of 0.8 and 0.5×10^6 mol.wt were also detected as clearly as full-length dsRNA in these hosts, but were weaker in *Citrus exelsa* and 'Interdonat' lemon. Madam Vinous, rough lemon and Mexican lime were the best hosts for dsRNA analysis. ELISA values were highest in April ($OD_{405nm} = 0.476$), decreased steadily until August, and then increased gradually through December. ELISA values were lowest in July and August ($OD_{405nm} = 0.157$ and 0.141 , respectively). dsRNA recovery from a field tree infected with isolate Igdır D was good in March, April and May and poor in January and February. No dsRNA band was detected in August or September.

KEY WORDS: Double-stranded RNA; extraction; electrophoresis; antigen concentration.

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