

Abstract

Investigations on *Citrus tristeza virus* (CTV) and its Occurrence in citrus orchards in arid and semi arid zones of Sudan

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Citrus tristeza virus (CTV) often causes quick decline and death, or stem pitting a, reduced vigour and longevity. Yields in susceptible varieties are shortened, hence CTV is considered as a serious threat to the citrus industry worldwide. In Sudan all citrus trees are grafted mainly on sour orange rootstock and this yields a CTV-susceptible combination with scions of sweet orange, mandarin, grapefruit and others. CTV is a serious problem because it is readily transmitted by infected budwood and is also spread by several species of aphids. Up to now, there was no serious work in the diagnosis of citrus viruses occurring in the Sudan by other methods than visual inspection. During the trials to detect CTV in the Sudan a survey was initiated in 2003 and 2004. Fresh leaf material was collected from CTV suspected trees accompanied by tissue printing on nitrocellulose membranes. CTV was detected successfully in thirteen printed samples using a mixture of specific monoclonal antibodies (3DF1 and 3CA5, Plant Print Diagnostics S.L.) originating mainly from orange trees but were collected from different orchards. In two cases also a mandarin and a lime tree respectively reacted positive in this serological assay. In a nested RT-PCR approach starting from RNA, extracted from fresh leaves, from ten samples a specific PCR product was amplified, substantiating the presence of CTV in four trees (three orange, one lime tree), which were presumably tested positive by tissue print. Cloning and sequencing of specific PCR products will authenticate the presence of CTV in Citrus trees in Sudanese orchards.