

# First Report of Orchid fleck virus in Costa Rica

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Disease Notes

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Orchid fleck virus (OFV), a tentative member of the family *Rhabdoviridae*, infects orchids in several countries. The virus is vectored worldwide by the mite *Brevipalpus californicus* (Banks) (Acari: Tenuipalpidae). Eleven plants of *Oncidium* spp. and one plant each of the genera *Cymbidium* and *Maxillaria* exhibiting numerous yellow flecks and necrotic ringspot lesions on leaves were collected in two private orchid collections in Costa Rica. Presence of OFV was assessed by plate-trapped antigen enzyme-linked immunosorbent assay (PTA-ELISA) using an antiserum developed against an OFV isolate in Japan (2), analyses of ultrathin sections of the host cell with transmission electron microscopy (TEM), and reverse transcription-polymerase chain reaction (RT-PCR) amplification using specific

primers for the viral nucleocapsid gene (1). Eight of eleven *Oncidium* samples, and both *Cymbidium* and *Maxillaria* samples tested positive for OFV with PTA-ELISA having  $A_{405}$  values ranging from 3.9 to 14.6 times higher than negative controls. Thin sections from individual samples of *Cymbidium*, *Oncidium*, and *Maxillaria* revealed electron-lucent intranuclear viroplasm and short, rodlike particles (40 to 50 × 100 nm) in the nucleus or cytoplasm typical of OFV-infected cells. RT-PCR amplifications from one sample of each genera resulted in PCR-product bands of approximately 800 bp. The *Cymbidium* RT-PCR product was cloned into a pGEM-T-Easy expression vector and sequenced using an ABI 3700 sequencer. The 619-bp nucleocapsid gene consensus sequence had 98% homology with the OFV isolate 0023 identified in Germany (GenBank Accession No. AF343870) (1). However, it had only approximately 85% nucleocapsid gene homology with other OFV isolates available through GenBank, including those from countries geographically closer to Costa Rica, such as Brazil (1). To our knowledge, this is the first report of OFV infecting orchids in Costa Rica.

*References:* (1) A. L. Blanchfield et al. *J. Phytopathol.* 149:713, 2001.  
(2) H. Kondo et al. *Bull. Res. Inst. Bioresour. Okayama Univ.* 4:149, 1996.

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