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Tombusviruses isolated from surface waters in New Zealand. Australasian

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**Abstract** Water samples from Turitea Creek and the Manawatu River near Palmerston North, New Zealand were assayed for infectious plant viruses. Twenty liter water samples each were prefiltered and v irions adsorbed onto electropositive Zeta Plus 50S membranes. Eluates were examined for virions by transmission electron microscopy . Icosahedral particles with a diameter of 30 nm with no distinct capsomere arrangement were observed. Two distinct tombus virus isolates were suspected based on symptoms in *Vigna unguiculata*. An A260/280 = 1.64, and a buoyant density in CsCl = 1.35 supported the conclusion that both isolates were tombusviruses. Maximum Parsimony trees generated f rom the deduced amino acid sequence of an 820 bp amplicon within the p33 (RdRp) gene and the entire capsid protein

gene (1100 bp) showed maximum similarity of the isolates from Manawatu river and Turitea creek with Cucumber bulgarian latent virus (60% and 64%, respectively) in the p33 region, and with Maize necrotic streak virus (83%) and Cymbidium ringspot virus (76%), respectively , in the capsid protein region. In accordance with the species demarcation criteria of <87% sequence identity in the capsid protein amino acid sequences established by the ICTV, it is suggested that both isolates are new tombusviruses, for which we propose the names Turitea creek virus (TuCV) and Manawatu river virus (ManRV). This is the first report of tombus viruses in New Zealand.