

## **An evolutionary analysis of Rice Tungro bacilliform virus collected from Odisha, India**

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Rice tungro is one of the most severe diseases of rice (*Oryza sativa*) and is caused by joint infection of Rice tungro bacilliform virus (RTBV) and Rice tungro spherical virus (RTSV). The RTBV isolate collected from Odisha was analysed based on nucleotide sequence. The results indicated that the Odisha isolate belongs to the "South Asian type" with close nucleotide homology (about 95%) to Kanyakumari isolate and distant relation was found with "South East Asian type". Attempts were taken to detect possible recombination, if any among the Indian and South East Asian types of RTBV both in glasshouse and field samples, which revealed considerable changes in sequence between the two types, might have occurred in the segment of Philippine and Malaysian isolates. It is confirmed from the present analysis that the isolate from Philippines (South East Asian) type [RTBV-(PH) AF113831] would be the actual recombinant and originated from Indian types. The results clearly indicated that the isolate from Malaysia (RTBV-[MY] AF0764700 is the potential recombinant and originated from Philippine types which had close homology with the Thailand type.

**Key words:** *Oryza sativa*, multiple alignments, RTBV, recombination analysis, phylogenetic tree