

**Evidence of Sibling Species in the Brown Planthopper Complex (*Nilaparvata lugens*)  
Detected from Short and Long Primer Random Amplified Polymorphic DNA  
Fingerprints**

**ABSTRACT**

The inheritance of 31 amplicons from short and long primer RAPD was tested for segregating ratios in two families of the brown planthopper, *Nilaparvata lugens*, and they were found to be inherited in a simple Mendelian fashion. These markers could now be used in population genetics studies of *N. lugens*. Ten populations of *N. lugens* were collected from five locations in Malaysia. Each location had two sympatric populations. Cluster and principal coordinate analyses based on genetic distance along with AMOVA revealed that the rice-infesting populations (with high esterase activity) at five localities clustered together as a group, and *Leersia*-infesting populations (with low esterase activity) at the same localities formed another distinct cluster. Two amplicons from primers OPD03 (0.65 kb) and peh#6 (1.0 kb) could be considered diagnostic bands, which were fixed in the *Leersia*-infesting populations. These results represent evidence of a sibling species in the *N. lugens* complex.

**Keyword:** Rice brown planthopper, *Nilaparvata lugens*, Short and long primer RAPD-PCR, Sibling species