

Food assimilated by two sympatric populations of the brown planthopper *Nilaparvata lugens* (Delphacidae) feeding on different host plants contaminates insect DNA detected by RAPD-PCR analysis.

ABSTRACT

Contamination of insect DNA for RAPD-PCR analysis can be a problem because many primers are non-specific and DNA from parasites or gut contents may be simultaneously extracted along with that of the insect. We measured the quantity of food ingested and assimilated by two sympatric populations of brown planthopper (BPH), *Nilaparvata lugens*, one from rice and the other from *Leersia hexandra* (Poaceae), a wetland forage grass, and we also investigated whether host plant DNA contaminates that of herbivore insects in extractions of whole insects. Ingestion and assimilation of food were reduced significantly when individuals derived from one host plant were caged on the other species. The bands, OPA3 (1.25), OPD3 (1.10), OPD3 (0.80), OPD3 (0.60), pUC/M13F (0.35), pUC/M13F (0.20), BOXAIR (0.50), peh#3 (0.50), and peh#3 (0.17) were found in both rice-infesting populations of brown planthopper and its host plant (rice). Similarly, the bands, OPA4 (1.00), OPB10 (0.70), OPD3 (0.90), OPD3 (0.80), OPD3 (0.60), pUC/ M13F (0.35), pUC/M13F (0.20), and BOXAIR (0.50) were found in both *Leersia*-infesting populations of brown planthopper and the host plant. So, it is clear that the DNA bands amplified in the host plants were also found in the extracts from the insects feeding on them.

Keyword: Brown planthopper; Determination; Food assimilation; DNA contamination; RAPD-PCR analysis.