

**Species determination of Malaysian Bactrocera pests using PCR-RFLP analyses
(Diptera Tephritidae)**

ABSTRACT

Identification of *Bactrocera carambolae* Drew and Hancock, *B. papayae* Drew and Hancock, *B. tau* Walker, *B. latifrons* Hendel, *B. cucurbitae* Coquillett, *B. umbrosa* Fabricius and *B. caudata* Fabricius would pose a problem if only a body part or an immature stage were available. Analysis of polymerase chain reaction–restriction fragment length polymorphism (PCR-RFLP) of cytochrome oxidase I (COI) gene using primers COIR, COIF, UEA7 and UEA10 and restriction enzymes (*Mse*I, *Rsa*I and *Alu*1) was carried out. The banding profiles in the electrophoresis gel were analysed. The COI gene in six *Bactrocera* spp. was successfully amplified by COIR and COIF, as well as UEA7 and UEA10, while *B. caudata* was amplified successfully only by UEA primers. Using COI amplified PCR products and restriction enzymes, distinct banding profiles for *B. tau*, *B. latifrons*, *B. cucurbitae* and *B. umbrosa* were observed, but not for *B. carambolae* and *B. papayae*. However, using UEA7, UEA10 and *Rsa*I, *B. caudata* could be identified, while *B. carambolae* and *B. papayae* might possibly be separated from one another. It was also shown that adult body parts or immature life stages of *B. carambolae*, *B. papayae*, *B. latifrons* and *B. cucurbitae* produced the same banding profiles as the adults. PCR-RFLP analyses are able to identify positively five *Bactrocera* species, while *B. papayae* and *B. carambolae* might possibly be separated from one another, even if immature life stages or adult body parts are used.