

Toxicity of Malaysian Medicinal Plant Extracts Against *Sitophilus oryzae* and *Rhyzopertha dominica*

ABSTRACT

The insecticidal activities of extracts from 22 Malaysian medicinal plant extracts from 8 botanical families were tested against rice weevil: *Sitophilus oryzae* (L.) and lesser grain borer: *Rhyzopertha dominica* (F.). The extracts were obtained using hexane, methanol, and dichloromethane to extract potential biopesticides from dried leaves. The toxicity levels were examined periodically based on antifeedant activity and contact toxicity assays using treated grain assay. Hexane extracts of *Alpinia conchigera*, *Alpinia scabra*, *Curcuma mangga*, *Curcuma purpurascens*, *Goniothalamus tapisoides*, *Piper sarmentosum*, and methanol extracts of *Curcuma aeruginosa*, *C. mangga*, and *Mitragyna speciosa* were the most potent extracts against *S. oryzae* and *R. dominica* with lethal concentration (LC50) values of ≤ 0.42 mg/mL and ≤ 0.49 mg/mL, respectively. The contact toxicity test results showed that methanol extracts of *C. aeruginosa* and *C. mangga*, dichloromethane extracts of *Cryptocarya nigra*, and hexane extracts of *C. mangga*, and *C. purpurascens* resulted in 100% mortality of both pests within 28 days exposure of 5 mg/cm² concentration.