Title Insecticidal activities of essential oil from *Piper betle* Linn.against storage insect pests

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Abstract

The insecticidal activity of essential oil extracted from the leaves of *Piper betle* (Linn.) was extracted against the bean weevil (*Sitophilus zeamai* Motchulsky) and the lesser grain borer (*Rhizopertha dominica* F.) using aged grain assay.The efficacy of treatments was assessed by determining the acute toxicity on adult insects and the extent of preventing or suppressing the production of progenies.The volatile oil in 30% dust formulation exhibited toxicity against adult *C.maculatus, S. zeamais* and *R.dominica* at varying application rates such as 0.2g/100g, 1.75g/100g and 2.0g/100g, respectively.Survival of adult *C. maculatus* was prevented up to 6 mo. by 52% while the treatment allowed 6 mo. protection of corn against *S. zeamais and R. dominica*. Although eggs were visible in the treated mungbean, the treatment prevented them from further development. Meanwhile the absence of eggs of both *S. zeamais* and *R.dominica* was prominent in the treated corn. The treatments were able to inhibit entirely the emergence of progenies. No living progenies were observed in treated samples until 6 mo while progenies were abundant in two control samples, check and untreated. The results, therefore, suggest that essential oil from *P. betle* leaves is a promising grain protectant.