

Toxicity, antifeedant, egg hatchability and adult emergence effect of *Piper nigrum* L. and *Jatropha curcas* L. extracts against rice moth, *Corcyra cephalonica* (Stainton)

ABSTRACT

Petroleum ether extract of black pepper, *Piper nigrum* and physic nut, *Jatropha curcas* were shown to have insecticidal efficacies against rice moth, *Corcyra cephalonica* (Stainton). The *C. cephalonica* 3rd instar larvae were shown to have similarities susceptibility to petroleum ether extract of *Piper nigrum* and *J. curcas* with LC₅₀ values of 12.52 and 13.22 μ L/ml, respectively. In a bioassay using no-choice tests, the parameters used to evaluate antifeedant activity were relative growth rate (RGR), relative consumption rate (RCR), efficiency on conversion of ingested food (ECI) and grain protection or feeding deterrence indices (FDI). Both extracts showed high bioactivity at all doses against *C. cephalonica* larvae and antifeedant action was increased with increasing plant extract concentrations. The petroleum ether extract of *P. nigrum* and *J. curcas* showed strong inhibition on egg hatchabilities and adult emergence of *C. cephalonica* at the lowest concentration. Based on the results of this study, petroleum ether extracts of *P. nigrum* and *J. curcas* could be used in IPM program for rice moth.

Keyword: Antifeedant; Feeding deterrence; *Piper nigrum*; *Jatropha curcas*; *Corcyra cephalonica*; Egg hatchability.