

Effect of steam volatile constituents of some tropical plant species on *Callosobruchus maculatus*

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Steam volatile extracts of eight different local plant species were screened for the insecticidal properties against cowpea seed bruchids *Callosobruchus maculatus* using contact toxicity bioassay. 0.1 g/ L dose of each plant extract was applied and percentage mortality (at 24 hours and third day after treatment) and oviposition (on third day after treatment) were observed. *Justicia gendarussa*, *Cassia rheedii*, *Gmelina asiatica* and *Crinum bulbispermum* showed significantly ($p < 0.05$) high percentage mortality of 84, 52, 72 and 56 respectively than control and solvent (Ethanol) treated samples whereas mortality observed with *Barringtonia ceylanica*, *Languas galanga*, *Casuarina esculenta*, *Derris scandens* were not significantly ($p > 0.05$) different from control and the solvent treated samples. Each plant extract was replicated five times in a completely randomised design of the experiment.

The study was continued for the volatile extracts, which showed higher percentage mortality of bruchid. At 0.6 g/ m² concentration of *J. gendarussa*, *C. rheedii* and *G. asiatica* showed the highest mortality of 96.67%, 83.33% and 86.67% respectively on 3rd day after treatment. At this dose *J. gendarussa* inhibit oviposition completely whereas *C. rheedii* and *G. asiatica* showed only 10 and 8 mean number of egg deposition. Significantly higher ($p < 0.05$) number of eggs was laid in control (93) and ethanol (97) treated samples. LC₅₀ values of the steam volatile extracts of *J. gendarussa*, *C. rheedii* and *G. asiatica* were 0.36, 0.42 and 0.43 g/ m² respectively.

These results revealed that these three plant extracts have the potential to be used as plant derived pesticides, but it is necessary to further investigate the basis of bioactivity and also to determine the constituents responsible for such activity.