

## **Repellent Effect and Qualitative Phytochemical Analysis of Lemongrass (*Cymbopogon citratus*) and Waterhyacinth (*Eichhornia crassipes*) against Cowpea Beetle (*Callosobruchus maculatus*)**

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Cowpea (*Vigna unguiculata*) is the most economically important leguminous crop in the worldwide, it is vulnerable to the infection of seed by cowpea beetle (*Callosobruchus maculatus*) in storage. The application of synthetic insecticide for the control of such insect pest leads to numerous hazardous effect of environment and human. Thus aim to identify the botanical products to control the *C.maculatus*. Lemongrass widely used as a medicinal herb in Sri Lanka. It has a subtle citrus flavor and can be dried and powdered or used fresh. In Sri Lanka water hyacinth (*Eichhornia crassipes*) is most problematic invasive aquatic weed. Therefore the study has been conducted to confirm the presence of insecticidal properties in this weed in order to use the weed in a beneficial manner rather destructing without any benefits. The purpose of this research is to do the phytochemical analysis and compare the secondary metabolites present in both plants and the repellency ability of powder and methanol extract of both plants. Selected plants were sun dried and pulverized into fine powder. Powders were dissolved in methanol to produce the extract. The powder and methanol extract were used for the bioassay. All the experiments were done at the laboratory condition at 28-30<sup>o</sup>C temperature and 74-80%RH. Repellency was evaluated by observing the behavior of beetles exposed to treated and untreated seeds in choice chamber and using petridish method. All this extracts and powders showed varying degree of repellent activity against cowpea beetle. However lemongrass methanol extract showed significantly higher repellent activity against beetles in choice chamber method (1.66) and petridish method (0.00), during storage time. The phytochemical analysis stated that the methanol extract of lemongrass had more phytochemicals, namely phenols, tannin, terpinoids, quinones, steroids, glycosids, reducing sugar, and flavanoids than the water hyacinth methanol extract.

**Keywords:** Cowpea beetle; Lemongrass; Water hyacinth; Methanol form; Powder form