

## Phytochemical Profile and Repellent Potential of Selected Medicinal Plants against Pulse Beetle, *Callosobruchus maculatus* (F.) (Coleoptera: Chrysomelidae)

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The present study was conducted to screen the secondary metabolite constituents and to evaluate the repellent potential of selected medicinal plants against the *C.maculatus* infesting the stored seeds of green gram under laboratory condition ( $30 \pm 2^{\circ}\text{C}$  and  $70 \pm 5\%$ ). Repellent potential of 1% *Acorus calamus* L. rhizome powder, 1% *Piper longum* L. fruit powder, and 1% *Aloe vera* L. aqueous extract were tested according to a free choice bioassay method. The plastic vial fixed at one end of the straw was supplied with treated seeds and the other end supplied with untreated seeds. The hole in the middle portion of each straw, 5 pairs of 1-2 days old *C.maculatus* introduced and covered with adhesive tape. The experiment was laid out in a complete randomized design consisting of three treatments with seven replications. The results revealed that almost all treatments had significant ( $p < 0.05$ ) repellent potential against *C.maculatus* infesting green gram seeds. Among them, *P.longum* powder treated seeds revealed higher mean repellent potential (81%) against the *C.maculatus*. *A.vera* aqueous extract showed least mean repellency (18%) and their repellency rate was 5% after 5 hours of introduction. Phytochemical screening of the aqueous extract of *P.longum* and *A.calamus* revealed the presence of alkaloids, flavonoids, steroid, triterpenoid, cardiac glycoside, saponin, and tannins except phenols, and anthraquinones while *A.vera* showed the presence of alkaloid, phenol, and cardiac glycoside. *P.longum* fruit powder possessed the highest repellent potential and will be more effective in control and management of *C.maculatus*. However, further studies are necessary to identify the biologically active components which are responsible for the repellent potential of these selected medicinal plants.

**Keywords:** Repellent potential; Free choice bio assay; *Callosobruchus maculatus*; *Piper longum*; *Acorus calamus*; *Aloe vera*.