

Deterrent activity of seed coagulant *Moringa oleifera* lectin on *Callosobruchus maculatus* and *Zabrotes subfasciatus* ovoposition

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Bruchid larvae cause major losses in grain legume crops throughout the world. Some bruchid species, such as the cowpea weevil and the Mexican bean weevil, are pests that damage stored seeds. The deterrent activity of seed coagulant *Moringa oleifera* lectin (cMoL) on ovoposition and development of *Callosobruchus maculatus* and *Zabrotes subfasciatus* was investigated in the present study. A previously established protocol was applied in the protein purification. Twenty cowpea seeds were dipped into the lectin solution at 0.05% (w/v) for 1 min, and air-dried prior to exposing to cowpea weevil adults for ovoposition in an assay binary choice. The seed controls were treated with water. After 24 h the adults were removed, and the number of eggs counted. Seeds were put in plastic tubes to follow the larval development and emergence of adults. The results from assay binary choice showed a significant reduction in the ovoposition for *Z. subfasciatus*. Per cent reductions in egg numbers compared with the control ranged from about 80-85. In contrast, it was observed an increase of 27% in oviposition by *C. maculatus*. No effect on egg hatching, emergence or adult longevity was observed. Our results suggest that the difference observed in assay can occur because the sensory mechanisms of insects are apparently capable of recognizing potentially harmful plant lectin. These comportamental differences may be based on the specificity of chemoreceptors present in evaluated bruchid species and their reproductive strategies which influence female behavior in different ways. This principle opens horizons to develop a novel concept for mutual benefit environment insect control.

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