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RESEARCH PAPER

Efficacy of edible and non-edible oils on orientation and oviposition of *Callosobruchus maculatus* infesting green gram (*Vigna radiata*)

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Abstract **:** Efficacy of edible and non-edible oils of sesame, coconut, groundnut, soybean, mustard, mahua, castor, karanj, neem and linseed on *Callosobruchus maculatus* infesting green gram , was investigated under free choice conditions. The green gram seed were treated with @ 2.5ml, 3.5ml, 4.5ml and 5.5ml per kg. seeds. All the oil treatments recorded significantly higher effective repelling the adults of the pulse beetle over control at 60, 90, 120 and 150 day's after treatment. The minimum orientation (6.19 adults) was recorded in mahua oil with the treatment (5.5 ml/kg seed) and Significantly higher orientation (8.09 adults) was recorded in treatments of mustard oil (2.5 ml/kg seed) than rest of the treatments. Significantly effective in reducing the egg deposition (5.35 to 55.78 eggs) over control (85.29 eggs) under neem oil. Where as mustard oil was found least effective in reducing the egg deposition.

Key Words **:** Edible and non-edible oils, *Callosobruchus maculatus*, *Vigna radiata*

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INTRODUCTION

The pulse beetle, *Callosobruchus maculatus* (Fab.) is major insect pest of green gram and other storage pulses causing substantial damage in the storage. In seed by infestation due to improper storage in India have been reported to be 50 per cent, after only three months of storage (Hussain and Abdel-Al, 1982). The vegetable oils have been reported to inhibit oviposition, which results reduction in multiplication of bruchids (Invijaro, 1990 and Reddy *et al.*, 1994). During present investigations influence some edible and non-edible oils on ovipotion and orientations under free choice condition were studied.

MATERIALS AND METHODS

The homogenous culture of pulse beetle *Callosobruchus maculatus* was maintained on green gram at $27.5^0C \pm 1^0C$ in incubator on variety K-851(as per procedure described by Strong *et al.* (1968). A key given by Raina, (1970). The seed of green gram were treated with the different vegetable oils *viz.*, sesame, coconut, groundnut, soybean, mustard, mahua, castor, karanj, neem and linseed oils @ 2.5, 3.5, 4.5 and 5.5 ml/kg seed in bulk and kept in polythene bags for further experiment. Hundred grains treated with each oil and untreated grains (control) were arranged in circular glass trough (45 x 15 cm). Fifty pairs of freshly emerged beetles were released in the center of the trough and the glass trough was then covered with the muslin cloth. The experiment was repeated three times. The adults oriented in each treatment were counted at 72 hours after their release. All adults were removed after 72 hours. The number of eggs laid on grains treated with different oils was counted to record their effect on oviposition.

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