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Efficacy of different leaf formulations from five medicinal plants against rice weevil, *Sitophilus oryzae* (L.) (Coleoptera: Curculionidae)

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Rice weevil, *Sitophilus oryzae* (L.) is one of the major pests of rice both in the field after harvest and during storage. Previous studies have revealed that plants are a potentially rich source of pesticides. Therefore, the present study was designed to evaluate the repellent activity of selected medicinal plants, *Acalypha indica, Murraya koenigii, Juticia gendarussa, Pongamia sp. a*nd *Piper longam* against rice weevil, *Sitophilus* sp. Repellent activity of leaf powder (1:10 w/w) and leaf paste (1:4 w/w) from these five plants were tested using a six- armed olfactometer based on the number of insects oriented towards each treatment.

Ten grams of infestation free rice grains were mixed with the leaf powder (1 g) from the selected plants and placed on a filter paper (2 inch diameter) and kept separately within each bottle (250 ml) of the six-armed olfactometer. The sixth bottle contained 1 g of untreated sound rice as the control. One hundred 1-3 day old adult *Sitophilus* sp. from the laboratory culture were introduced into the centre bottle of the six-armed olfactometer. The number of insects in each bottle was counted at 24 hrs and 48 hrs of exposure. This was replicated five times. Similarly 1:4 (w/w) fresh leaf paste from the above said plants were prepared and placed in each bottle of the olfactometer. Data were analyzed by using analysis of variance and LSD. The percentage repellency was compared with the control. Orientation of *Sitophilus* sp. towards leaf powder and leaf paste from all tested plants was significantly less in numbers ($P<0.05$) than the untreated control after 24 hrs and 48 hrs of exposure. From the LSD analysis, the leaf paste of *P. longam* showed less repellent effect than the other plants tested. However, leaf powder of *M. koenigii, J. gendarussa* and *P. longam* showed high repellent activity followed by *A. indica and Pongamia sp*. After 48 hrs of exposure percentage repellency ranged from 44 % to 92 % for leaf powder but for leaf paste it ranged from 66 to 89 %. It was concluded that the leaf powder of *M. koenigii, J.gendarussa, P.longam, A. indica* and *Pongamia sp* at 1:10 (w/w) and leaf paste of *M. koenigii, J.gendarussa, Pongamia sp* and *A. indica* at 1:4 (w/w) has a potential repellent effect against *Sitophilus sp.* and could be considered for integration with other control options in the control of *Sitophilus sp..*

Keywords: Repellent, *Sitophilus sp. Acalypha indica, Murraya koenigii, Pongamia sp. Piper longam, Juticia gendarussa*

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