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Management strategies for the pomegranate fruit borer, *Deudorix isocrates* (Fab.) (Lycanidae: Lepidoptera): A sustainable solution for small scale farmers

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Pomegranate, *Punicagranatum L*. is an important fruit crop in tropics and sub-tropics serving dietetic, remedial and aesthetic values. Pomegranate fruit borer, *Deudorix isocrates* (Fab.) is a destructive pest which incurs up to 65% yield loss. However, though there are measures such as spraying of Monocrotophos (36WSC), Dimethoate (30EC), Endosulfan (Thiodan 35EC) alternate with Cypermethrin (25EC), Fenvalerate (Fenval 10EC) has been tried to control this pest infestation but these measures are not economically feasible and eco-friendly. Hence, the objective of the research was to develop eco-friendly management practices that are ecologically sound and economically feasible. Biological studies revealed that female lays eggs singly on the calyx of flowers or on young fruits and newly hatched larvae bores inside the developing fruits and are usually found feeding on the pulp and seeds just below the rind. It took on an average 63.92±2.87 day to complete life cycle from oviposition to adult emergence. We have tried number of control measures (Deltamethrin (Decis) 2.8EC at 1 ml/L; Chlorantraniliprole (Coragen) 20SC at 0.4 ml/L; Bt (Dipel) at 1 ml/L; combination of neem soap+Bt at 10 g/L and 1 ml/L, respectively and neem soap at 10 g/L; covering with brown paper bags, Control and weeding. The results on the percent infestation reduction over untreated revealed that package with bagging of fruits+application of Chlorantraniliprole 20SC at 0.4 ml/L water leads to a 90.5% reduction in fruit borer infestation. Similarly, field sanitation+bagging of fruits with brown paper bags along with combination of neem soap+Bt realized 98.5% control of the pest on pomegranate. Our novel findings demonstrate that these two packages provide viable alternative for the control of fruit borer small scale farming systems. Such management strategies would enhance the income of farmers without deteriorating environmental quality.

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