SHORT NOTE

AN ASSESSMENT OF METHYL EUGENOL DISPENSERS AND FRUIT FLY SPECIES COMPLEX IN ORCHARD AGRO-ECOSYSTEMS OF GOA, INDIA

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Tephritid fruit flies (Bactrocera spp) are serious pests of orchard fruits throughout the world (Vergheese et al., 2002). Faleiro et al., 2002 reported maximum activity of fruit fly in Goa in the monsoon during the months of June and July. Methyl Eugenol (ME) is the most powerful of all male lures attracting oriental fruit fly, B. dorsalis and several other related species (Kapoor, 1971; Drew, 1974; Drew and Hooper, 1981; Vergheese et al., 2002). Male Annihilation Technique (MAT) is reported to control fruit flies (Cunningham, 1989) and has been successfully used to manage the pest in guava and mango (Qureshi et al., 1981; Stonehouse et al., 2002). In this study, field trials were carried out between June and August, 2005 in fruit orchards of Goa with an aim to assess the catching efficiency of methyl eugenol soaked dispensers viz. plywood, soft board and straw board blocks and also to ascertain the species diversity of fruit flies in orchard agro-ecosystems of Goa [Western India].

Plywood, soft board and straw board squares of approximately 5x5x1.2cm were soaked overnight in a mixture of ethanol solvent, ME and 0.1% malathion 50EC in a volume ratio of 6: 4: 1. All treatments were set in used plastic bottle traps, fabricated by using disposable plastic water bottles (1L). Each trap had four windows (1 sq inch) cut open just below the shoulder of the bottle as recommended for the IIHR bottle trap (Vergheese et al., 1998). Such lure loaded traps were set in the fruit orchard at ICAR Research Complex, Old Goa between June and August, 2005 in a replicated field trial. Traps were not replenished with the lure during the experimental period. Fruit fly catches were recorded at weekly intervals for nine weeks. The data obtained was subjected to ANOVA for statistical analysis.

Results presented in table 1, indicate that fly captures in traps with soft board blocks recorded significantly higher fly captures, and was

Table 1. Fruit fly captures in orchard agro-ecosystems of Goa using different methyl eugenol dispensers (22/6/2005 to 26/8/2005)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Dispenser</th>
<th>Mean catch/ trap /week *</th>
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<tbody>
<tr>
<td>1</td>
<td>Plywood</td>
<td>06.51 (061.06)</td>
</tr>
<tr>
<td>2</td>
<td>Straw board</td>
<td>13.32 (213.13)</td>
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<tr>
<td>3</td>
<td>Soft board</td>
<td>14.69 (241.14)</td>
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<td>CD (p= 0.05)</td>
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<td>2.07</td>
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* Data transformed using square root transformation.

Figures in parenthesis are original values.
Figure 1. *Bactrocera* spp. captures in fruit orchards of Goa using different dispensers soaked with methyl eugenol.

Figure 2. *Bactrocera* spp. complex in fruit orchards of Goa.
statistically at par with straw board but superior to plywood blocks. Shukla et al., 2005 reported that plywood soaked in ME, though capturing fewer flies lasted longer in the field as compared to soft boards. Figure 1 also shows that soft board and straw board charged ME-blocks sustained the trapping efficiency after the fifth week of the trial during the month of August when fly activity is reported to be on the decline in Goa (Faleiro et al., 2002).

Figure 2 reveals that the orchard flies diversity in Goa consist of five species viz. Bactrocera dorsalis, B. caryae, B. zonata, B. affinis and B. correcta, with B. dorsalis being the most dominant species. Babu and Viraktmath, 2003, reported four species of fruit flies using Methyl Eugenol traps from the neighboring State of Karnataka.

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REFERENCES


