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MANAGEMENT OF MELON FLY, *BACTROCERA CUCURBITAE* (COQUILLETT) ON BITTER GOURD (*MOMORDICA CHARANTIA* L.) WITH NEWER INSECTICIDES

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ABSTRACT : Exploit of newer insecticides with unique mode of action is a new way for the management of melon fly, *Bactrocera cucurbitae* (Coquillett), a major pest on bitter gourd and experiment was carried out under field condition during *kharif*, 2019. Observation on per cent fruit infestation and larval population per fruit were recorded by picking marketable size fruits at 60 days after sowing. Spinosad 45 SC @ 0.3 ml L^{-1} was the most effective insecticide against melon fly against *B. cucurbitae* with significantly lowest fruit infestation (28.62%), larval population (6.53/fruit) with higher marketable yield of 12.86 tons ha^{-1}. Thiodicarb 75 WP @ 1.0 g L^{-1} was the next best treatment in the order of efficacy against melon fly with 31.72 per cent of fruit infestation, 7.84 of larvae per fruit followed by emamectin benzoate @ 0.4 g L^{-1} (34.32% and 8.82/fruit), flubendiamide @ 0.75 ml L^{-1} (36.39% and 8.54/fruit) and lambda cyhalothrin @ 1.0 ml L^{-1} (36.39% and 8.92/fruit). Per cent reduction of fruit infestation over the control was high in Spinosad 45 SC @ 0.3 ml L-1 (55.49%) followed by thiodicarb 75 WP @ 1.0 g L^{-1} (50.67%). It is concluded that 2 foliar spray of either spinosad 45 EC @ 0.3 ml L^{-1} or thiodicarb 75 WP @ 1.0 g L^{-1} at flowering and fruiting stage of the crop offer better protection against melon fly.

Key words : *Bactrocera cucurbitae,* bitter gourd, fruit infestation, larval population, newer insecticides.

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INTRODUCTION

India is the second largest producer of fruits and vegetables with annual production of 99.06 and 191.76 MT from an area of 6.64 and 10.35 M ha, respectively. Being a large group of vegetables; bitter gourd (*Momordica charantia* L.) is one of the most significantly growing vegetable in India with an annual production of 1.21 MT from 1.01 Lakh ha during 2019-20 (Indiastat, 2019-20). Among all the insect pests species infesting bitter guard; Melon fly, *Bactrocera cucurbitae* (Coquillett) is the one of the most economically important horticultural insect pest inflicting heavy losses in cucurbitaceous vegetables by destroying 70% of cucurbits in India. It attacks 61 plant species belonging to 19 different families, 28 of them are cucrbits, remaining are non-cucurbits hosts. But also its economic impacts are due to its quarantine status (Dey Mayer, 2015). In India, the extent of losses varies from 30 to 100 per cent (Shooker *et al*, 2006). It damages the crop in following ways *viz*., ovipositional injury by female adults, internal feeding on ovaries and fruit pulp by maggots and rottening of fly-damaged fruits (Viraktamath *et al*, 2003). Several researches have been carried out in India on the efficacy of various insecticide against melon fly, but insecticidal resistance, resurgence of pest, hazards on human beings and environment due to insecticidal residue toxicity results in exploitation of newer insecticide with unique mode of action for its management. Also, due to very scanty information is available on the management of melon fly on bitter gourd by the use of newer insecticides, the present investigation was carried out on evaluation of newer insecticides against melon fly on bitter gourd.

MATERIALS AND METHODS

Field trail was conducted in a pendal system at Horticulture Garden, S. V. Agricultural College, Tirupati,