Residues Of Different Insecticides On Brinjal Fruit In Maharashtra

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ABSTRACT

Residues of different insecticides on brinjal fruit harvested at three days after last spraying were evaluated during year 2002-2003 at Dr. PDKV, Akola (M.S.). The results revealed that cypermethrin 25EC @ 0.006% and spinosad 45 SC @ 0.1% were found below detectable limit. Whereas, endosulfan 35 EC @ 0.05% monocrotophos 36 WSC @ 0.05% and thiodicarb 75 WP @ 0.1% were found to have residues deposit of 0.092, 0.061 and 0.178 ppm, respectively which were within the prescribed maximum residue level (MRL) and hence fruits may be considered harmless from safety point of view to the consumers.

Key words : Brinjal residues, endosulfan, monocrotophos, thiodicarb, spinosad, cypermethrin.

INTRODUCTION

Brinjal or Egg plant (*Solanum melongena* Linn.) has been a staple vegetable in our diet since ancient times. It has also medicinal values against liver complaints, toothache, diabetes and is good appetizer. Being high in economic values, now a days cultivation of brinjal is becoming menance to the farmers because of attack of insect pests. More than 26 insect-pests species belonging to 50 families from 10 orders are reported on brinjal all over the world Frengpong and Buohing, (1978). Brinjal shoot and fruit borer *Leucinodes orbonalis* Guen. (Lepidoptera : Pyralidae) is most destructive and is considered to be the limiting factor in quantitative as well as qualitative harvest of brinjal fruits. The pest accounts for 48.30 per cent losses in yield of brinjal fruit Singh *et al.*, (2000).

Several insecticides have been evaluated and reported to be effective for the control of brinjal shoot and fruit borer, but frequent and enormous use of insecticide posed the several problems in natural ecosystem, such as environmental pollution, accumulation of residues, pest resistance, resurgence and health hazards, etc. The marketable fruits contaminated by pesticidal residues is a matter of concern now a days and hence every pesticide sprayed on brinjal must be evaluated by taking into account the pesticidal residues left on the crop. The present study was therefore conducted to estimate the residues of different insecticides on brinjal fruit in Maharashtra

MATERIALS AND METHODS

Field experiment with brinjal variety Mangarigota was conducted during *Kharif* 2002-2003 on research farm of Department of Entomology, Dr. Panjabrao Deshmukh Agril.

University, Akola (M.S.). The trial was laid out in randomised block design with six treatments and three replications. A plot of 4.2x3 m was taken for individual treatment. one month old seedlings were transplanted with 60x60 cm spacing. The first spray of respective treatments was initiated as soon as the brinjal shoot and fruit borer's population exceeded the five per cent of infestation (ETL) and repeated at 15 days interval. Three rounds of sprays as per treatment schedule were given.

Sampling, Extraction and Clean-up :

About 25 gm of marketable quality fruits were randomly harvested and collected from each treatment on third day after last spraying. Well labelled samples were packed in thermocoal container to maintain temperature to 0-3^{0}c and were taken to Pesticide Residue Laboratory, Department of Entomology, Mahatma Phule Agril. University, Rahuri (M.S.) for residue analysis. Extraction and Clean-up was done for each insecticide as per standard procedure.

Estimation :

a) Endosulfan :

Estimation of endosulfan was performed on GLC equipped with Electron Capture Detector (ECD). The glass column (1m x 2 mm i.d.) loaded with 1.5% OV – 17 + 1.95% OV 210 on choromosorb WHP (80-100 mesh) was used with the nitrogen flow of 40 ml/min. The working temperature for injector port, column oven and detector was 220^0, 200^0 and 350^{0}c, respectively.

b) Monocrotophos :

Estimation of monocrotophos was performed on Gas chromotograph fitted with Thermoionic Flame Detector

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