International Journal of Plant Protection | Volume 5 | Issue 1 | April, 2012 | 45-48

IJPP

Research Article

Eco-friendly management of tomato pests

■ S.S. WAGH[1]*, P.D. PATIL[2], S.K. LAD[1] AND S.D. PATIL[3]

[1]Department of Entomology, Mahatma Phule Krishi Vidyapeeth, Rahuri, AHMEDNAGAR (M.S.) INDIA
[2]Department of Entomology, Dr. B.S. Konkan Krishi Vidyapeeth, Dapoli, RATNAGIRI (M.S.) INDIA
[3]Agricultural Research Station, Niphad, NASHIK (M.S.) INDIA

ARITCLE INFO

Article Chronicle :
Received : *05.10.2011*
Revised : *17.11.2011*
Accepted : *29.01.2012*

Key words :
Tomato, Leafhopper, *A. bigulla bigulla,* Fruit borer, *Helicoverpa armigera,* IPM modules

*Corresponding author: shrirangwagh@gmail.com

ABSTRACT

The experiment was conducted to find out relative efficacy of different integrated pest management modules comprised of alternate spray of chemical pesticides, biopesticides and botanicals against tomato leafhopper and fruit borer. The cumulative effect of all the sprays indicated that the module M_9 composed of chemical pesticides used in four sprays was significantly superior over other modules and recorded lowest number of leafhopper and fruit borer population population (0.78 per leaf and 0.62 per plant, respectively). However, module M_5 composed of alternate spray of 0.005 per cent Lamda cyhalothrin followed by *B. bassiana* @ 1.25 kg ha-1 followed by 0.0009 per cent abamectin followed by azadirachtin @ 2 ml L^{-1} in four sprays, respectively could also record nearly same population of leaf hoppers (0.96 per leaf) and fruit borer (0.71 larvae/plant) and comparable with M_9. Therefore, it can be concluded that the use of integrated approach composed of alternate use of chemical, biopesticides and botanicals can be adopted for control of major pests infesting tomato with minimum damage to environment.

How to view point the article **:** Wagh, S.S., Patil, P.D., Lad, S.K. and Patil, S.D. (2012). Eco-friendly management of tomato pests. *Internat. J. Plant Protec.*, **5**(1) : 45-48.

INTRODUCTION

Tomato is the world's largest vegetable crop, which occupies an outstanding place among the important vegetables of the world and commercially cultivated for its fleshy fruits. In India, productivity of tomato is very low as compared to its production potential of the developed countries. There are many reasons for low production potential and among them pest infestation is major one. Tomato fruit borer (*Helicoverpa armigera* Hubner) is a polyphagous pest. It's outbreak in crops like cotton, cereals, pulses, vegetables etc. are common and highly devastating. It has cosmopolitan distribution and has been recognized as a 'national pest'. In India it is known to cause 18 to 55 per cent losses in tomato crop by boring the fruits, which results into a direct loss by reducing the marketable value (Selvanarayanan and Narayanaswami, 2001). Therefore, the pest has become threat to successful production of tomato.

Presently, chemical pesticides are preferably used by farmers for the protection of tomato fruits against leaf miner and other pests. The over dependence and indiscriminate use of chemical pesticides has resulted in several problems like development of resistance to pesticides, outbreak of secondary pest, reduction of biodiversity and natural enemies. Indiscriminate use of pesticides resulted in failure of control of the tomato fruit borer (Lal and Lal, 1996). These drawbacks of chemical pesticides emphasized the need to identify alternate eco-friendly methods to manage the pests of tomato.

MATERIALS AND METHODS

Field experiment was conducted at ASPEE Agricultural Research and Development foundation Farm, Village Nare Tal Wada, Dist. Thane during *Rabi* season of 2008-2009. The seedlings of tomato variety NS-815 (M/s Namdhari Seeds Private Limited, Bidadi- 562 109, Bangalore) were raised under shed net condition. Transplanting was done in plot with (Gross- 4.8m x 3.0m, Net- 4.8m x 2.25m) R.B.D. (Randomized Block Design) having three replications and eleven treatments. There were eleven predefined IPM modules including control (Table A). Four sprays were given, each at interval of 15 days starting from 15 days after transplanting. The quantity of spray solution