

Insect pest status of vegetable crops in Western Uttar Pradesh

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ABSTRACT

Field surveys were conducted for three years (2001-2003) to record the pest status of vegetable crops in western Uttar Pradesh. Among the herbivores, Lepidoptera, Hemiptera, Coleoptera, Diptera and Thysanoptera were the predominant orders. Cotton jassid (*Amrasca biguttula biguttula* Ishida) on okra; fruitfly (*Bactocera cucurbitae* Coquillett) on cucurbits; shoot and fruit borer (*Leucinodes orbonalis* Guenee) on brinjal; cabbage butterfly (*Pieris brassicae* Linn.) on cole crops; pea leaf miner (*Phytomyza horticola* Goureau) on pea and fruit borer (*Helicoverpa armigera* Hubner) on tomato were the most serious pests in different vegetable crops in this region.

Key words :Uttar Pradesh, Vegetable crops, Pest status.

INTRODUCTION

Almost all types of vegetable crops including leafy vegetables, cole crops, cucurbits, pulse vegetables and tubers crops etc. are grown in western Uttar Pradesh (Anonymous, 2000). Many insect pests attack all these crops and their intensity varies in time and space. In UP, the government is laying great emphasis on extending the area under different vegetables crops but the information about insect pests associated with these crops is scanty. Therefore, the present investigations were conducted to ascertain the occurrence and status of different insect pests on vegetable crops of this region so that appropriate strategies can be formulated for their management.

MATERIALS AND METHODS

Extensive surveys were conducted in different areas of this region during different periods of year and on different crop growth stages. The studies were undertaken over a period of three years i.e. from 2001 to 2003. The insect pests of major growing vegetables crops were recorded. The immature stages of insect pests that occurred as and when on vegetable crops (from the date of planting till the harvest) were collected using suitable techniques. The immatures were reared in the laboratory on the host from which they were collected for the adult emergence. Adults were killed and preserved for identification.

RESULTS AND DISCUSSION

Field surveys showed that 29 species of insect-pests were found to be associated with the vegetable crops (table 1). Among the insect pests, the maximum number of insect species were from order Lepidoptera (13) constituting 7 families, followed by Hemiptera (9), Coleoptera (3), Diptera (3) and Thysanoptera (1).

On okra, seven species of insect pests viz. *Bemisia tabaci* Genn., *Dysdercus cingulatus* Fb., *Aphis gossypii* Glover, *Earias vitella* F., *Pectinophora gossypiella* Saunders, *Sylepta derogata* Fab. were recorded. Out of these, leafhopper (*Empoasca devastans* Distant) was the most serious and was present on the crop throughout the growing period while red cotton bug, *D. cingulatus* Fabricius infested

the crop at ripening stage, which is in agreement with Nair (1986). Incase of cucurbits, besides hadda beetle, which was found to infest all cucurbits; however, its incidence was most serious on bitter melon, four more species of insect pests (*Raphidopalpa foveicollis* Lucas, *Bactocera cucurbitae* Coquillett, *aphis gossypii* Glover, *Bemisia tabaci* Gennadius) were recorded. Of which, red pumpkin beetle, *A. foveicollis* at leaf stage and fruit flies throughout the fruit development stage were most serious. Butani and Jotwani (1984) and Nair (1986) were also having similar observations.

Leucinodes orbonalis Guenee (Borer) was found to be the most serious pest of brinjal. Nair (1986) reported *L.orbonalis* Guenee and *E. Particella* Rag. as the major pest of the crop. Out of ten insect species viz. *Brevicoryne brassicae* L., *Lipaphis erysimi* Kalt., *Myzus persicae* Sulzer, *Plutella xylostella* Linn., *Agrotis ipsilon* Hufnagel, *Thysanoplusia orichalcea* Fabricius, *Pieris brassicae* Linn., *Hellula undalis* Fb., *Spilosoma obliqua* Walker, *Bagrada cruciferarum* which were recorded to infest cole crops; *P. brassicae* L. was the most common and serious pest. Butani and Jotwani (1984) reported seven insect species associated with these crops in India. Bhatia *et al.* (1995) reported six species as regular pests on cole crops.

Five pest species viz. *Macrosiphum pisi* Kalt., *Etiella zinckenella* Treit, *Phytomyza horticola* Goureau, *Helicoverpa armigera* Hb. and *Melanagromyza Phaseoli* Tryon were recorded to cause varying degree of damage on peas. However, leaf miner and pod borer were the most serious pest. In India, pod borers, stem fly, leaf miner and aphids were reported as major pests of this crop (Prasad *et al.*, 1984; Mahobe, 1986 and Atwal and Dhaliwal, 2002).

Fruit borer (*Helicoverpa armigera* Hubner) was the serious pest recorded to infest tomato along with other insect species viz. *Bemisia tabaci* Gennadius, *aphis gossypii* Glover, *Myzus persicae* Sulzer. As compared to earlier reports, which indicated over 25 insect species infesting the leave and fruits of chilli in South east Asia (Butani and Jotwani, 1984); *Aphis gossypii* Glover, *Bemisia tabaci* Gannadius, *Scirtothrips dorsalis* Hood., *Holotrichia consanguinea* Blanch and *Helicoverpa armigera* Hb. was

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