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Avoidable yield losses against major pests of okra

BB Gaikwad, BB Bhosle and KM Jadhav

Abstract

The experiment on estimation of avoidable yield losses against major pests of okra revealed that minimum the avoidable losses during 2017-18 was 33.90 per cent and 32.25 per cent during 2018-19 with 33.07 per cent average of two years.

Keywords: Fruit damage, sucking pests, protected and unprotected

Introduction

In India, vegetables have occupied the prime position in human diet, as these are the cheaper source of carbohydrate, minerals, vitamins, proteins, dietary fibers besides having medicinal value and provide nutritional security to a predominately vegetarian population. Among different vegetables, okra, *Abelmoschus esculentus* (L.) Moench belonging to the family Malvaceae is an important annual vegetable, grown for its immature green non fibrous edible fruits in the tropical and sub-tropical regions of the world. It is commonly known as “Gumbo” as well as “Okra” in USA, lady’s finger in England and “*Bhindi*” or “*Bhinda*” in India. It is probably originated in Ethiopian region of Africa, but is now widely grown in Sudan and Nigeria regions of the Africa besides being grown in other countries. Because of its high nutritive value and prolonged shelf life as compared to others, okra has captured a prominent position among export oriented vegetable crops. It has a vast potential as one of the foreign exchange earner crop and accounts for about 60 per cent of the total export of fresh vegetables (Varmudy, 2001) [6].

Okra has its own importance, taste, flavour and nutritional values as human food. It has good nutritional value particularly high content of calcium and vitamin C (Anitha and Nandihalli, 2008). It is grown extensively in the tropical, subtropical and warm temperature regions of the world especially in India, U.S.A., Africa, Asia, Nigeria, Sudan, Iraq, Pakistan, Turkey, Australia, U.K. and other neighboring countries. India ranks first in area and production in the world. It is a major commercial vegetable cultivated all over India particularly in the states of Andhra Pradesh, West Bengal, Jharkhand, Orissa, Uttar Pradesh, Madhya Pradesh, Karnataka, Gujarat and Maharashtra. India occupies an area of 532.66 thousand hectares with a production of 6346.37 thousand tones and productivity of 11.9 MT/ha. (Anonymous, 2014) [1]. One of the important limiting factors in the cultivation of okra is insect and mite pests. Many of the pests occurring on cotton are found to ravage okra crop. As high as 72 species of insects have been recorded on okra (Srinivas Rao and Rajendran, 2003) [5] of which, the sucking pests comprising of aphids (*Aphis gossypii* Glover), leafhopper (*Amrasca biguttula biguttula* Ishida), whitefly (*Bemisia tabaci* Gennadius) and mite (*Tetranychus cinnabarinus* Boisduval) causes significant damage to the crop. Krishnaiah (1980) [3] reported about 40 to 56 per cent losses in okra due to leafhopper. There is a reduction of 49.8 and 45.1 per cent in height and number of leaves, respectively due to attack of leafhopper (Rawat and Sahu, 1973) [4].

Material and Methods

The experiment was laid out at the farm of Department of Agril. Entomology, VNMKV, Parbhani during *kharif* season of 2017-18 and 2018-19. with randomized block design with 14 replications and 2 treatments (protected and unprotected). Each plot size was 3.6 × 3.0 m by adopting 60 X 30 cm spacing. In protected plots all control measures were taken according to pest incidence through the growth stages of the crop. The unprotected plots which were not treated with any foliar insecticide, was exposed to pest infestation. Observation were recorded Five plants were randomly selected and Yield of healthy and damaged fruits were recorded separately at each picking. avoidable loss were calculated by using the following formula

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$$\text{Per cent avoidable loss} = \frac{\text{Yield in treated plot} - \text{Yield in control plot}}{\text{Yield in treated plot}} \times 100$$

Results and Discussion

Yield obtained from protected & unprotected condition during Kharif 2017 and 2018

Fruit yield obtained from protected and unprotected condition during Kharif 2017 and 2018 were presented in Table 1. Protected condition registered significantly highest fruit yield during Kharif 2017-18 and 2018-19, (4100 kg/ha) and (4568 kg/ha) respectively. And minimum fruit yield was recorded in unprotected condition as compared to protected level during both the years, 2710 kg/ha and 2920 kg/ha respectively. Pooled data indicated that, lowest yield was observed in unprotected condition (2815 kg/ha) and maximum yield were noticed in protected condition (4334 kg/ha).

Table 1: Yield obtained from protected & unprotected condition during Kharif 2017 and 2018

	Total fruit yield (q/ha)		
	2017	2018	Pooled
Protected	4100	4568	4334
Unprotected	2710	2920	2815
SE ±	15.65	19.01	17.33
C.D. at 5%	49.23	58.49	53.86
C.V.%	12.45	16.56	14.50

Avoidable yield losses during Kharif 2017 and 2018

Avoidable yield losses during Kharif 2017-18 and 2018-19 were given in Table 2. The avoidable losses during 2017-18 was 33.90 per cent and 32.25 per cent during 2018-19 with 33.07 per cent average of two years.

Table 2: Avoidable yield losses during Kharif 2017 and 2018

	Total fruit yield (Kg/ha)		
	2017	2018	Pooled
Protected	4100	4310	4334
Unprotected	2710	2920	2815
Avoidable losses	33.90%	32.25%	33.07%

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