

INSECT-PESTS OF OKRA AND THEIR MANAGEMENT



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Okra, commonly called as lady's finger (*Abelmoschus esculentus* L. Moench) is an important vegetable crop commercially cultivated in India and is the single largest green vegetable crop exported (60% of vegetables) to many parts of the world. However, the major problem in limiting the productivity of okra crop is being its susceptibility to a large number of insect pests including vectors during various stages of crop growth.

Insects which occur consistently causing appreciable damage are categorised as 'major' pests. Leafhopper (*Amrasca biguttula biguttula*) whitefly (*Bemisia tabaci*) and the shoot and fruit borer (*Earias vittella*, *E. insulana*, *Helicoverpa armigera*) are major insect pests and inflicts heavy damage to okra crop during the summer season and rainy season.

The crop can be protected by devising suitable management practices involving judicious use of insecticides along with Integrated Pest Management components. Vegetable farmers use excessive and high doses of pesticides which has triggered several ecological consequences like environmental pollution, resistance to pesticides, adverse effects on natural enemies, persistence of toxic residues in fruits and human poisoning etc. However, insecticides continue to be the main component of pest management programmes and their use is indispensable in okra cultivation for practical reasons. So, this may be regarded as control of the last resort because it adds considerably to the cost of production.

Sucking pests of Okra

Okra Jassids

The leafhopper/Jassid (*Amrasca biguttula biguttula* Ishida), is widely distributed in India and is one of the most destructive pests of okra. Both nymphs and adults suck cell sap usually from ventral surface of leaves and while feeding inject their toxic saliva into the plant tissues; the affected leaves turn yellowish and curl. In case of heavy infestation, the leaves turn dark brick red, become brittle and crumble

Whitefly

The whitefly nymphs and adults not only cause damage by de-sapping but also transmit the yellow vein mosaic virus disease, which has become a serious threat to okra cultivation. When the leaves are disturbed, it seems that the white dot masses are flying above the crop canopy.

Aphid

The aphid (*Aphis gossypii* Glover), attacks okra crop during early kharif and in rainy season and causes damage by de- sapping to loss of vigour and vitality of crop.

Red spider Mite

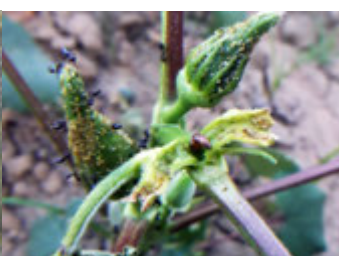
Red spider mites are emerging pest problem in okra and especially summer vegetables. Mostly the crop field situated nearby the path or road or where dusts are the common problem leads to more



Jassids



Whit flies



Aphids



Spider mite

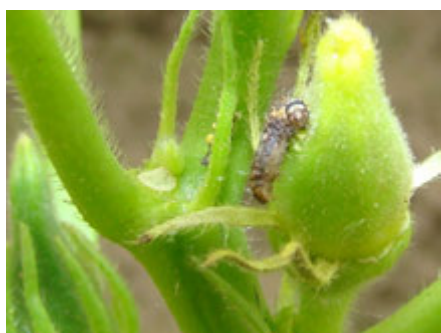
infestation of mite. They can completely mask the entire plant with webs and reduces the photosynthetic area of leaves by continuous desapping and thereby causing the destruction of plants.

Integrated Pest Management against sucking pests

- Use recommended doses of nitrogenous fertilizers; excessive fertilizer dose promotes the growth and development of plants which leads to more insect infestation.
- Seed treatment of okra with imidacloprid (Gaucho 600 FS) @ 7 ml (g) / kg seed protects the crop from sucking pests up to 60 days and also checks the transmission of yellow vein mosaic virus by vectors. Rogue out and burn the virus infected plants as and when it appears in the field.
- Two to three spray of botanicals like NSKE 5 % solution at 15 days interval gives good control against the pest population.
- Delta traps or yellow sticky traps should be installed to trap the aphids, whitefly etc.
- Planting border rows of flowering plants like saunf or coriander encourages the farmers' friendly insects like *Coccinella* (lady-bird beetles), spiders, wasp, green lacewing, rove beetle and syrphid fly and other hymenopteran parasitic parasitoids for pest control. Border flowering plants also act like the barrier, trap or deterrant crops which reduces the pest populations.
- In case of severe infestation, spray imidacloprid @ 0.3 ml or thiomethoxam @ 0.3 ml per lit of water against sucking pests.

Okra borer complex

Two species of spotted bollworms, (*Earias vittella* Fab. and *E. insulana* Bois. have been recorded on okra in Jammu region. The larvae cause damage by boring into the young shoots, flowers and the developing fruits by feeding inside. The infested fruits become unfit for human consumption and causing a yield loss of about 20-30 per cent. The American bollworm, *Helicoverpa armigera* Hüb., also attacks okra and causes serious damage to the fruits, especially during kharif crop.



Earias insulana larva



E. vittella larva



Helicoverpa larva

Integrated Pest Management for borer insect pests

- Release of *Trichogramma* egg parasitoids @ 1 lacs per week 4 to 5 times or planting border rows of flowering plants in patches or at least 10 per cent area of total cropped area which encourages the natural enemy population for pest management.
- Installation of pheromone traps @ 25 per ha are effective in controlling the fruit borer adult

- Borer infested shoots and fruits should be clipped off at a regular interval for destruction.
- Spray NSKE 5 % solution @ 3 ml per lit of water followed by cypermethrin @ 1 ml per lit of water or flubendiamide @ 0.3 ml per lit of water.



Yellow wasp



Ashy Prinia feeding on insects



Coccinella sexmaculata



Spider



Rove beetle



Coccinella septumpunctata



Installation of Pheromone traps for moth catches

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