Available online at
www.agrospheresmagazine.com

ISSN: 2582 – 7022

Agrospheres:e-Newsletter, (2021) *2*(4), 9-12

Agrospheres: e-Newsletter

Article ID: 201

Major Insect-Pests of Sugarcane and their Management

Chitralekha*, Prince, Navish Kumar Kamboj, A.K. Mehta

Cotton Research Station Sirsa, CCS Haryana Agricultural University, Hisar

*Corresponding Author
Chitralekha*
E-mail:
barwarchitralekha@gmail.com

Article History
Received: 15.03.2021
Revised: 29.03.2021
Accepted: 7.04.2021

INTRODUCTION

Termite, *Odontotermes obesus* (Termitidae: Isoptera)

Identification: Creamy colored tiny insects resembling ants with dark colored head live in mound.

Nature of damage:-Termite infestation occurs soon after planting when germinating setts and young shoots are affected. Newly planted setts suffer the most serious damage as termites enter through their cut ends or through the buds and feed on soft tissues replacing them with soil. The infested stools or shoots dry up soon after germination and these can be pulled out easily. Such shoots show no compensatory tillering. Occasionally 40-60% of the eye buds are destroyed leading to poor germination, gaps in the field and subsequent yield loss. In the ratoons, infestation occurs through the cut ends of the stubbles. In tillers, termites feed on the inner tissues of underground portion of the stem and filling them with soil.

Management: (1) **February-March**: At sowing time setts are treated with 2.5 L chloropyriphos 20 EC or 600 ml fipronil 5 EC (Reagent) (for sandy soil 700 ml) in 600-1000 L water or 150 ml Imidachloprid 200 SL in 250-300 L water and spray on the furrow with the help of knapsack sprayer.

(2) In the month of May-June apply irrigation at 10 days intervals to protect the crop from these insects.

Early shoot borer: *Chilo infuscatellus* (Pyralidae: Lepidoptera)

Identification: Adult moth is straw colored and laid eggs in the clusters of 10-30 eggs under the surface of the leaves by the side of the mid rib. The eggs are creamy-white in colour and has scale like appearance. The larvae are dull white in colour with a number of brownish-red longitudinal stripes on the back and they bore a number of times, either in the same stalk or in the neighboring ones. The larval period lasts for about three weeks, after which the larvae pupates in the tunnel within the sugarcane stalk where they had been feeding before.

Nature of damage: The plants, which are attacked by this pest, produce dead hearts from April to June and completely dry up. A loss of 10-20 per cent of young shoots is not uncommon during this period and in years of serious infestation; it may be as high as 70 per cent. After the formation of canes, the attack does not produce dead- hearts and the damage is confined to a few internodes only. Even then, there is considerable reduction in cane yield and sugar content.

Management: (1) February-March: At the time of sowing setts are treated with 2.5 L chloropyriphos 20 EC or 600 ml fipronil 5 EC (Reagent) (for sandy soil 700 ml) in 600-1000 L water per acre spray on the furrow with the help of knapsack sprayer or use 150 ml Imidacloprid 200 SL in 250-300 L water or 8 kg Dursban 10G / 10 kg fipronil 0.3 G / 7.5 kg Sevidol 4G per acre.

(2) April- June: When the soil testing is not done at the time of sowing, treat the setts with above any one insecticide. Irrigate the field in the month of May-June at 10 days intervals to protect the crop.

Top shoot borer, *Scripophaga excerptalis* (Pyralidae: Lepidoptera)

Identification: Damaged is caused by caterpillars which are generally found in the top portion of a cane. Caterpillars are creamy white in colour and sluggish. The moths are pure white in colour and carry a reddish tuff of silken hairs at the tip of its abdomen.

Nature of damage: The first two broods of this pest attacks on young plants before the formation of the canes and infested plants started dying. In subsequent broods, the pest attacks the terminal portion of the canes, causing bunchy tops. Damage by the third and fourth broods may result in more than 25 per cent reduction in weight and a decrease in the quality of juice.

Management: April-October: In the month of April to June cut the sugarcane plant from the root, burry them and also destroy the egg mass. April to first week of may spray in the roots 150 ml chloropyriphos 20 EC in 400 L water per acre and do light irrigation after that. If top borer attack is more than 15% in the end of June, apply 13 kg carbofuran 3G or 8kg phorate 10G along the row. If in the month of May insect infestation is up-to 5% than use any above insecticide for better management.

Root borer, *Emmalocera depresella* (Pyralidae: Lepidoptera)

Identification: Fully grown caterpillars are milky white in colour. Caterpillar does not eat roots but they make the hole on upper surface of root.

Nature of damage: This pest is primarily destructive to young plants and the attack is particularly severe from April to June. Plants attacked after the formation of canes are not killed, although and sugar content is reduced.

Management: Release of egg parasitoid, *Trichogramma chilonis* @ 50, 000/ha at 10 days interval. Spray the crop with Imidacloprid 200 SL in 250-300 L water on the furrow with the help of knapsack sprayer.

Stalk borer, *Chilo auricillus* (Pyralidae: Lepidoptera)

Nature of damage: In spring, when the pest first appears on the ratoon crop, the late "water-shoots" play an important role in multiplication of insect. By the time the canes are formed in August- September, 75 per cent of them may be infested, the heavily manured fields and soft varieties suffering more. The lodged crop and waterlogged fields are also more severely infested. The caterpillars have the habit of boring into on internode after another and moving from plants to plants. On an average, it causes 16 per cent reduction in cane yield.

Black bug, *Cavelerius excavates* (Hemiptera: Lygaeidae)

Nature of damage: On young plants, the nymphs and adult suck cell-sap from the central whorl. On the grown-up plants, they prefer to feed within the leaf sheath and varieties having broad and loosely attached sheaths are preferred by this pest. The attacked leaves become paler and also show holes after feeding.

Pyrilla or Sugarcane Leafhopper, *Pyrilla perpusilla* (Hemiptera: Fulgoridae)

Identification: The leaf hopper is very agile and jumps around in large numbers, making a faint noise when a person walks through a heavily infested field. The adult equally active has a straw colored body with dark patches or spots on the wings. At the front end it has a snout like prolongation and prominent red eyes.

Nature of damage: Succulent varieties of sugarcane with broad leaves are preferred by this pest but when it occurs in abundance, no variety is spared. Owing to the loss of cell-sap, the leaves turn pale yellow and shrivel up later. Even the canes dry up and die when the attack is very severe. The insects excrete a thick transparent liquid, known as honeydew which falls on the leaves and makes a good medium for the growth of a black mould. Therefore, in time, the leaves acquire a sticky black appearance and the attacked crop can be spotted from a distance. The black coating interferes with photosynthesis and very less food is prepared by plants. The existing sugarcane sucrose in the canes is also used up and about 35 per cent reduction in sugar yield is not uncommon.

Management: (1) Sometimes leafhopper will be attacked in April to June. To control this pest spray 400 ml malathion 50 EC in 400 L water per acre.

(2) July- November: Sugarcane leafhopper becomes very destructive due to changing environment. But at that mean time egg parasitoid also present in the field. These egg parasitoid to grow inner side of the leafhopper egg. Due to this egg colour changes and become brown, pink or black and they control itself. These parasitoids are reared in biocontrol laboratory located at Sonipat, Shahabad, Meham and Jind sugar mills. If these are not controlled by parasitoid than spray with 400-600 ml Malathion 50 EC in 400- 600 L water per acre.

Whitefly, *Aleurolobus barodensis* (Hemiptera: Aleyrodidae)

Identification: Nymph of the whitefly is oval, black in color and has a silvery grey waxy coating on the body. The adults are small delicate, pale yellow and their wings have a white mealy appearance, molted with black dots. They flutter about briskly, but they are not easily noticed in the field.

Nature of damage- Only the nymphs cause the damage by sucking the cell-sap. Yellow streaks appear on the attacked leaves and the crop acquires a palish-green appearance. The general vitality of the plants is reduced and the quality and quantity of *gur* production is poor because of subnormal crystallization of sugar. Sugar recovery is reduced by about 15-25 per cent. A black moulds on the honeydew excreted by the pest and it interferes with proper functioning of the leaves and renders them unfit as fodder. A comparatively poor crop with a thin stand is attacked more readily than a well- manured and heavy crop.

Management: July-November:- Use 800ml of malathion 50 EC or methyl demeton 25 EC (Metasystox) or 600 ml dimethoate 30 EC for spray in 400 ml water per acre. In this solution add 10 Kg urea for greening the leaves frequently.

Mealy-bug, *Saccharicocus sacchari* (Hemiptera: Coccidae)

Natures of damage- Mealy-bugs are first noticed in appreciable numbers when canes are four month older and from then on, they remain on the plants till harvest. Canes having tight-fitting sheaths are more or less free from attack, whereas a drought- affected crop is more severely damaged. The bugs drain away large amount of sap from the canes and befoul them by their mealy secretions and honeydew. A sooty mould develops on these secretions giving a blackish appearance to the canes. It is also suspected that the mottling disease of sugarcane which is serious in certain parts of India is transmitted by these bugs.

Mite, *Oligonychus indicus* (Acarina: Tetranychidae)

Natures of damage- The mite feeds on plant and suck the sap with its stylets. The male insects feed rarely and the damage is done mainly by the female insects and their nymphs.

As a result of their feeding, the leaves turn red and gradually dry up. Sugarcane varieties with soft leaves are attacked more readily and damage is noticed to the greater extent during the pre-monsoon period.

Scale Insect

Identification: The adult female is sedentary having no legs or wings and lives inside a white covering or a white scale. The male is minute and free living. It has special sharp organ to penetrate the female scale covering.

Symptoms: Water logging, high temperature and humidity favor buildup of scale insect population. It spreads to new areas through seed material. Scales usually establish on internodes covered with leaf sheath. The leaves of infested canes show signs of tip drying and unhealthy pale green colour and with continued infestation turn yellow. Desapping leads to non-opening of leaves turn yellow and finally dry up. Nodal region is more infested than intermodal region. Infested crop growth is stunted and the internodal length is reduced drastically.

Management: This insect found only in Sonipat and Faridabad districts and affects the lower portion of sugarcane.

Following practices should be used during December to March:

In the scale affected area pest act become effective. Do not take seed from affected area to unaffected area. For sowing to take healthy setts or if use these infected seed than dip with 0.1 per cent of 20 ml malathion 50 EC + 10 L water for 20 minutes. Do not give permission to grow rationing crop. Burn the crop residue after harvesting. At the lower portion of sugarcane to separate the leaves 2-3 times-when insect infestation start and when crop become 6 -8 month old.