

Insects affecting Sea-Island Cotton in Malabar

by

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The Madras Agricultural Department has recently introduced a fine variety of cotton known as the Sea-Island cotton (*Gossypium barbedence*) in the West Coast of this state. This Variety of cotton is cultivated on a few Islands in West Indies and considered as the world's finest and costliest cotton. It is able to flourish well in the West Coast under the climatic and soil conditions obtaining in that tract. It is being successfully raised both as a pure and intersown crop in the coconut gardens in Malabar. Increased efforts are being made by the Departmental authorities to expand the area of cultivation of this valuable cotton which bids fair to give good return to the cultivator. The author has been making some interesting observations ever since the introduction of this cotton in Malabar with regard to the occurrence of insect pests in the newly introduced variety and has made an attempt to give a list of insects noted by him on this cotton in the following pages, with very brief notes on the nature of damage caused to the plant by them and possible control measures that might be adopted in each case. In attempting to give the list it has been arranged in convenient groups according to the method of feeding of each insect.

I Boll Worms:

(i) *Earias fabia*, S.: This pest occurs in fairly serious form attacking the young buds, flowers and bolls. The attacked buds and immature bolls drop down causing serious loss in the yield. In the case of mature bolls the caterpillar bores and feeds on the contents. Spraying Follidol or Endrin at 1 oz. in 12½ gallons controls this insect.

(ii) *Rabila frontalis*, W: This boll-worm is noted in a bad form in this variety of cotton. The adult is a stout built yellowish brown moth and its larva is a light pinkish caterpillar with red brown head and dark brown prothoracic shield. The caterpillar bores into mature bolls, scoops out the entire content of the growing boll, leaving only the shell. As it bores the caterpillar shoves out excreta through entrance hole. A single caterpillar may attack 3 or 4 bolls. The same control measures adopted for the other boll-worm holds good for this also.

(iii) *Platyedra gossypiella*, S.: This is found to appear in the late stage of the crop in a mild form. The caterpillar feeds inside the bolls as in the case of *Maras fabia*, S. Control is same as the other boll-worms.

II Stem Borers:

(i) *Alcidodes mysticus* F: This is a dark brown weevil measuring about 9 mm. in length with two transverse bands formed of small short ashy grey hairs just beyond the middle on the elytra. It was first noticed by the author attacking this variety of cotton at Pattambi in October 1951. It occurs for the first time in a pest form on cotton in South India. It causes serious damage to this crop. The grubs of this weevil which are of dull yellow colour with a dark brown head bore into the leaf petiole and stem and feed on the contents as a result of which the plants look sickly and stunted in growth. In early stages of the crop the attack can be made out by the wilting of tender leaves which gradually dry up and fall down. In a still later stage the attack can be easily made out by the presence of exit holes at the sides of the stem and petiole plugged with brownish powdery frass. Further it has been noted that the attack by this weevil on this cotton also results in poor flowering and setting of bolls. Folidol spray at 1 oz. in 12½ gallons eradicates this weevil.

(ii) *Zeuzera coffea*, N: This insect was noted by the author attacking a few plants at Pattambi during November 1955. The adult is a pretty moth white in colour having blue black spots at the edges of the wings. The head and thorax are grey with black spots and the abdomen is black with white hairs. The caterpillar is stout and red brown in colour measuring about two inches in length with black thoracic shield. It bores the thick main stem of the plant and feeds on the contents. The attacked plants show withering of leaves and the shoots also will be seen drying up from one end. The presence of the larva in the field is indicated by the oval shaped yellowish white castings of the caterpillar that have been ejected out through exit hole at the side of the stem, lying accumulated at the bottom of the plants on the ground. Injection of chlorosol or chloroform through the exit hole will kill the caterpillar inside.

III Leaf Feeders:

(i) *Sylepta derogata*, F: This is often found serious on this cotton. The adult is a medium sized moth having yellowish wings with brown wavy markings. The elongated, slender and dark green

caterpillar rolls the leaves, lives inside these peculiar rolls and feeds on the green matter. Infested plants can be made out by the presence of such numerous leaf rolls. Collection of leaf rolls and destroying the caterpillars and spraying with Endrin or Folidol will control this insect.

(ii) *Euproctis fraterna*, M: This hairy caterpillar has been noted occasionally defoliating this cotton. Collection of caterpillars or spraying with BHC or Folidol controls it.

(iii) *Cosmophila erosa*, H: This is also found fairly in serious form. The caterpillar is a semilooper, bright leaf green in colour. It voraciously feeds on the leaves and leaves only the midrib. BHC or Folidol can be sprayed for controlling it.

IV Sucking Insects:

(i) *Aphis gossypii*, G: This is found in a fairly serious form on this variety of cotton. It occurs in colonies of hundreds on the tender portions of the plant and sucks up the sap. Folidol spray controls them effectively.

(ii) *Empoasca devastans*, D: This jassid occurs in large numbers and sucks up the sap of the plant causing curling and withering of leaves. DDT or Folidol spray checks this insect.

(iii) *Dysdercus cingulatus*, F: This is commonly known as the Red Cotton Bug. This is found in a mild form puncturing the bolls. Folidol spray kills these bugs.

(iv) *Saissetia nigra*, N: This scale has been noted occurring only on a very mild form on this Cotton. Folidol spray controls this scale.

(v) *Ferrisiana virgata*, C: This mealy bug is noted only on stray plants as in the case of the scale. The same control measure adopted for the scale can be adopted in this case also.

V Surface Insects:

(i) *Chrotogonus saussurci*, B: This surface grasshopper feeds on young seedlings. It is easily controlled by the application of BHC dust.

(ii) *Atactogaster finitimus*, F: This is a stout greyish weevil which causes same damage as the grasshopper. Control is by hand-picking of weevils or dusting BHC dust.

Among the various pests attacking Sea-Island cotton only a few insects namely the bollworms, the stem weevil *Alcidodes mysticus*, F, the leaf roller *Sylepta derogata*, F aphid, jassid etc. are noted to cause some appreciable damage to the crop. The other insects mentioned in the list occur only in a mild form. But there is every possibility of these minor insects also becoming a major pest some time or other in that particular climatic conditions prevailing in that tract. Most of these insects are easily controlled by either Endrin or Folidol treatment. As the cotton plant is affected by one or other of these insects even from the very early stage of the crop, it is advisable to have a spray schedule from the early stage of the crop, to have effective control. To begin with the crop can be sprayed with Endrin at 1 oz. in $12\frac{1}{2}$ gallons from the sixth or eighth week stage and repeated at convenient intervals of fifteen or twenty days. Two rounds of Endrin in the beginning followed by one or two rounds of Folidol spray at 1 oz. in $12\frac{1}{2}$ gallons will be quite sufficient for saving the crop from all these pests. The use of Endrin spray alone for all the rounds of sprayings occasionally gives rise to the secondary infestation by mites or mealy bugs. Hence the use of Folidol at the latter stage of the crop is recommended, which controls also mites and mealy bugs. The cost of one round of treatment per acre will work out to about Rs. 10/- acre

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