COTTON JASSID (*Empoasca devastans* Dist.) IN BANDAKKA

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In the recent past *Empoasca devastans*, the greenish-yellow jassids (hoppers) have emerged as one of the major pests on Bandakka (Ladies finger). The damage symptoms of this pest are usually mistaken by farmers as a nutrient deficiency in the early stages of damage and as a virus disease in the later stages of the damage.

During hot dry weather with low rainfall, the jassids cause heavy damage.

Empoasca devastans also attack potato, tomato, cotton and castor (Nair, 1975). In the Northern dry zone of Sri Lanka it is a serious pest on brinjal, too.

LIFE CYCLE

Adult

The adult insects are about 2.5 mm in length. They are pale green to yellowish in colour. The wings are shiny and more or less transparent. The legs are slender with a fair number of bristles. They are very active and have a sideway pattern walk but are quick to hop and fly when disturbed.

Eggs

Young leaves are preferred for oviposition. The female insects deposit their eggs deeply in the midrib or in a large vein on the under surface of the leaves and in the petioles, but never in the lamina.

Nymphs

Nymphs are similar to the adults in shape. However, they are very small, pale green in colour and lack the wings. They usually complete their growth on the leaf where they hatch, feeding on the underside. Their size and activity increase, attain darker green colour with moulting and at the end of the fifth moulting they become adults.

Nymphs are very shy with the characteristic rapid, crab-like sideway movement when

disturbed and are confined to the underside of the leaves during the daytime. Young nymphs can be seen at the angle between midrib and the main veins specially in the basal portion of the underside of leaves.

The time taken to complete the life cycle is 3 - 4 weeks (Reddy, 1968).

DIAGNOSIS OF THE DAMAGE

Injury is caused due to the toxaemia of the insects' saliva injected into the leaf during the process of feeding. The damage symptoms are usually referred to as tip burn or hopper burn. The damage symptoms on Bandakka plants are as follows:

- Appearance of a triangular brown spot at the tip of the leaf.
- Similar triangles may appear at the end of each lateral veinlet and margins show slight yellowish discolouration.
- Entire margin of leaf rolls upward at one time.
- The leaves then turn brown as though scorched by fire or drought (Fig. 2).
- Leaves below the growing tips usually burn first.
- Very young and very old leaves are little affected as feeding is chiefly on normal "working" leaves and confined to the underside of these leaves.
- Affected plants become stunted and fail to produce pods (Fig. 2).

Diagnosis can be confirmed by finding the leaf hoppers on the underside of the leaves (Fig. 3). It was observed that very few hoppers (even 3 - 4 nymphs or hoppers per leaf) can cause the damage.

On brinjal the symptoms are as follows:

- Affected leaves show yellowish discolouration at the margins.
- leaf margins curl upside slightly and turn brownish in colour.
- Affected plants show decline in growth, fail to produce pods and wither slowly.

CONTROL MEASURES

Biological Control

It has been observed that the yellow species of ladybird beetles and their nymphs eat these jassids. Though they arrive on the plants late when the pest population is quite high, they play a significant role in

reducing this pest to a considerable extend after their arrival.

Chemical control

As even 3 - 4 jassids per leaf can cause the damage, it is better to start spraying, once the hoppers or nymphs are noticed in the early stages (vegetative phase) of the crop.

Caution

As Bandakka is harvested once in 2 - 3 days for the market it is not advisable to spray the crop during the bearing period. Spraying during bearing should be done only if the crop is for the purpose of seed production. It is better to allow the ladybird beetles to control this pest during the bearing stage. Similar practice should be adopted for brinjal also as it is harvested at weekly intervals.

Pesticides recommended for the control of jassids are:

Dimethoate 40% EC 490 - 700 ml per hectare
Endosulfan 35% EC 560 - 770 ml per hectare
(Crop recommendation technoguide)

* Special attention should be paid to direct the spray especially to the underside of the leaves.

REFERENCES

1. Anonymous. (1990). Crop Recommendations Technoguide, Department of Agriculture, Sri Lanka.

2. Nair, R.G.K. (1975). Insects and Mites of Crops in India, ICAR, India.

3. Reddy, D.B. (1968), Plant Protection in India, Allied Publishers, India.

Fig. 1. Affected weak plants

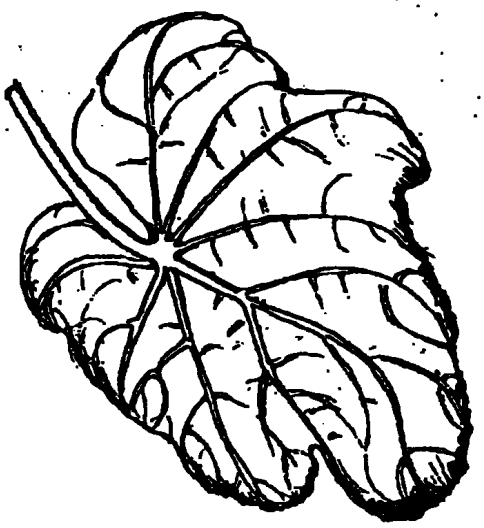

Fig. 2. Leaf with margin showing scorched appearence

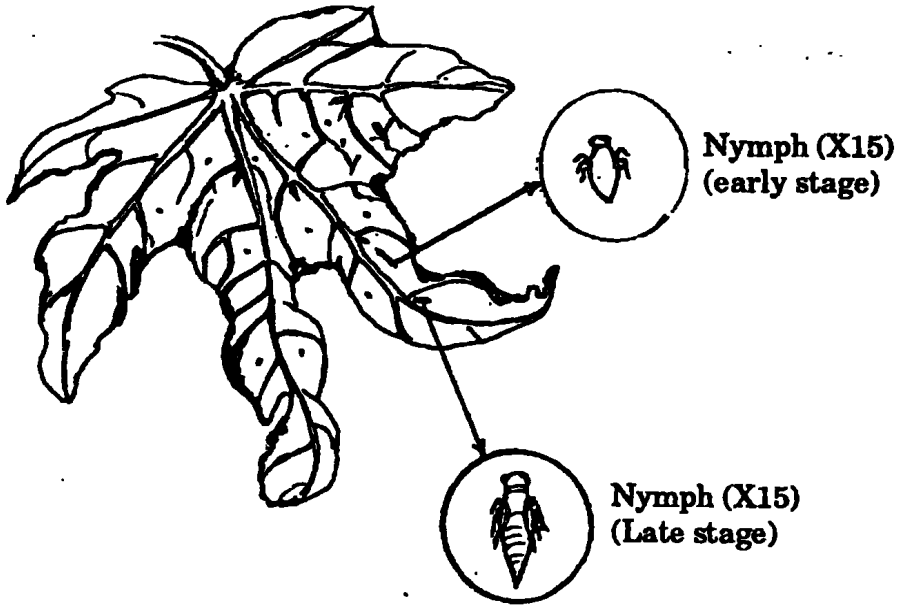

Fig. 3. Lower surface of the leaf