

The introduction of productive Bivoltine and Multi.xBi. hybrids demands assured qualitative and quantitative leaf supply for achieving the optimum cocoon yields. But, in the Gangetic plains of West Bengal silkworm cocoon crops during August – January are facing the crisis for quality mulberry leaf due to attack by two species of whitefly, *Dialeuropora decempuncta* Quaintance & Baker (Homoptera: Aleyrodidae) and *Aleuroclava pentatuberculata* Sundararaj and David.



Symptoms and Damage

Both adult and nymphal stages of whitefly suck the juice from tender leaves resulting in chlorosis (top region), leaf curl (middle region), loss of nutritive value and pre-mature leaf fall.

The nymphs suck the juice and secrete honeydew, which acts as a medium for growth of sooty mould fungus

(*Chaetothyrium* sp. and *Curvularia affinis*) and ultimately forms a black coating on the upper surface of the mulberry leaves (bottom).

Atleast thirty alternate host plants for whitefly were recorded so far and the prominent are banana, brinjal, tomato, pointed gourd etc.



Seasonal Incidence :

Whitefly can be found throughout the year, with abundance during June - December and peak from September to October. Feeding whitefly infested leaves to silkworm causes depletion in economic parameters of silkworm rearing.

The leaf yield loss due to whitefly is about 24% and in case of severe infestation it may go up to 80%.

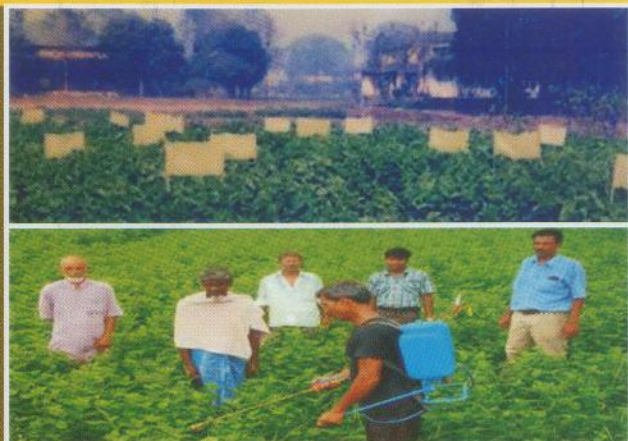
Economic Threshold Level (ETL) for whitefly is 20 nos./ plant

Management:

- ❖ Weeds harbouring whitefly near the mulberry field should be removed.
- ❖ Infested leaves and shoots of mulberry should be burnt.
- ❖ To prevent the spread of the pest to non-infested newer zones proper quarantine measures should be ensured while supplying mulberry cuttings.
- ❖ Install yellow sticky traps after 15 days of pruning during June – November @ 60 nos./ acre (size 24" x 12") (sticky trap is yellow polythene sheet smeared with grease, fixed in two bamboo sticks).
- ❖ Release of native predator, *Brumoides suturalis* (Fab.) @500 pairs /acre would suppress the whitefly population effectively. Moreover, being a generalist predator, after establishing in the released eco-zone, it will take care of the other polyphagous pests like, thrips, mealy bug, mites etc.
- ❖ Conservation of native predators, *Micraspis discolor*, *Micraspis crocea*, *Serangium parcesetosum* should be ensured to keep the pest at lower levels.



- ❖ Spraying of 1.5% Neem oil or 0.1% dichlorvos or 0.015% thiamethoxam reduces the whitefly infestation. Safe period is 14 days.



Preparation of insecticide solution:

- ❖ For spraying one bigha (33 decimals) land area of mulberry the quantity of spray solution required is 70 litres

| Insecticide | Commercially available as | Quantity to be mixed in 10 litres of water |
|--------------|---------------------------|---|
| Neem oil | 1500ppm | 150 ml (30 Teaspoon full) + 10 teaspoon full soap solution) |
| | 3000ppm | 75 ml (15 Teaspoon full) + 10 teaspoon full soap solution |
| | 5000ppm | 45 ml (9 Teaspoon full) + 10 teaspoon full soap solution) |
| | 10000ppm | 23 ml (5 Teaspoon full) + 10 teaspoon full soap solution |
| Dichlorvos | 76% EC | 15ml (3 Teaspoon full) |
| Thiamethoxam | 25WG | 5g (1 sachet full) |

| Preventive and control measures | | | | | |
|---------------------------------|-----------------------|---|----------------------------------|---|--|
| District | Name of the crop | Date for installation of yellow coloured sticky traps | Last date for insecticide spray* | Brushing date | |
| Malda | Bhaduri (August) | 1 st June | 17 th July | 2 nd -4 th August | |
| | Agrahayani (November) | 10 th September | 15 th October | 1 st -5 th November | |
| Murshidabad Birthum & Nadia | Ashwina (Aug-Sept) | 20 th July | 7 th August | 22-28 th August | |
| | Agrahayani (November) | 10 th October | 15 th October | 1 st -5 th November | |

* Don't spray after that date.

☞ Spray on the lower surface of the leaves.

Whitefly and its management in mulberry



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