

Diseases and Pests of Non Mulberry Food Plants

Dr. Mahesha H B
Professor and Head
Department of Sericulture
Yuvaraja's College,
University of Mysore, Mysore, India



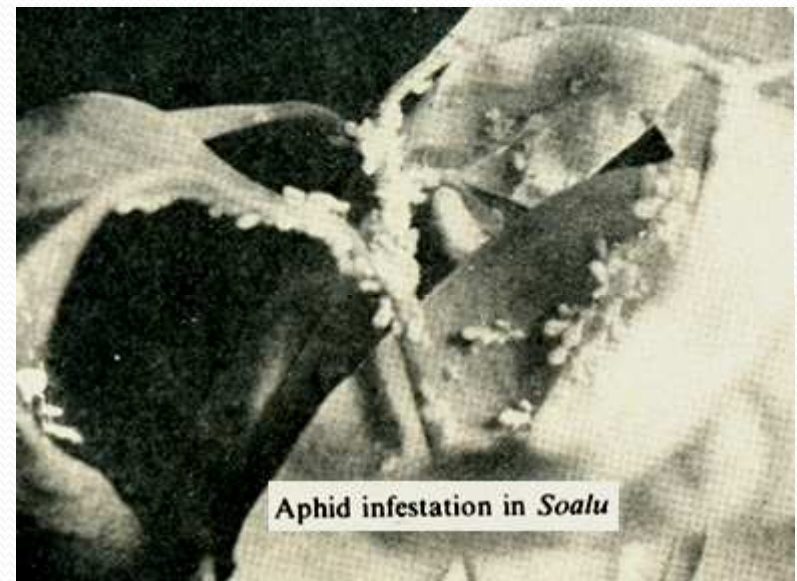
Pests and Diseases of Muga Food Plants


Insect Pests of Som and Soalu

(1) Sucking Pests:- Thrips, Aphids and Jassids cause damage to leaves of *som* and *soalu* and cause wilting of leaves. The initial symptoms are leaf margin rolling, followed by curling and wilting of leaves.

Among these sucking pests, infestation due to thrips and jassids is less.

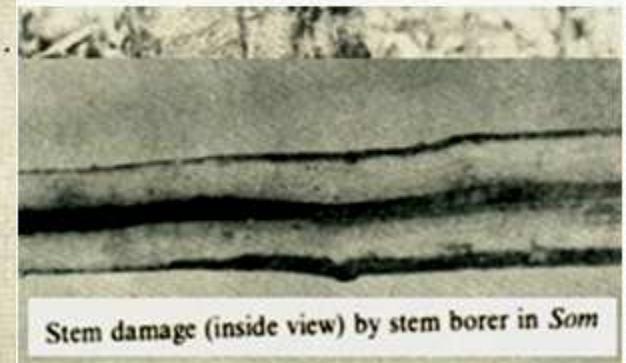
Aphids cause extensive damage to the developing leaf buds. The honey-dew secreted by aphid attracts ants and makes it unsuitable for rearing. Also it attracts saprophytic fungi which subsequently cause stem rotting.

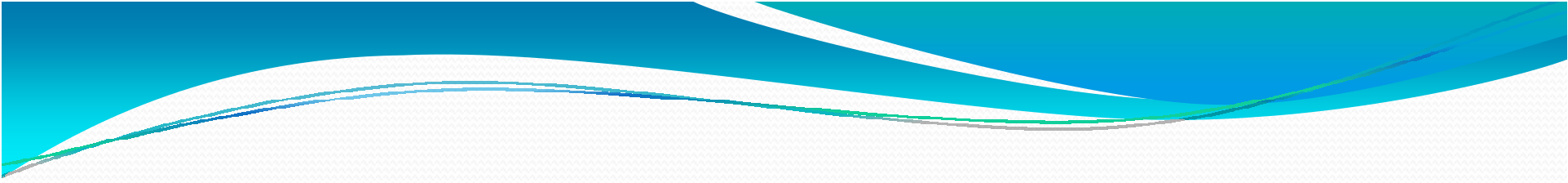


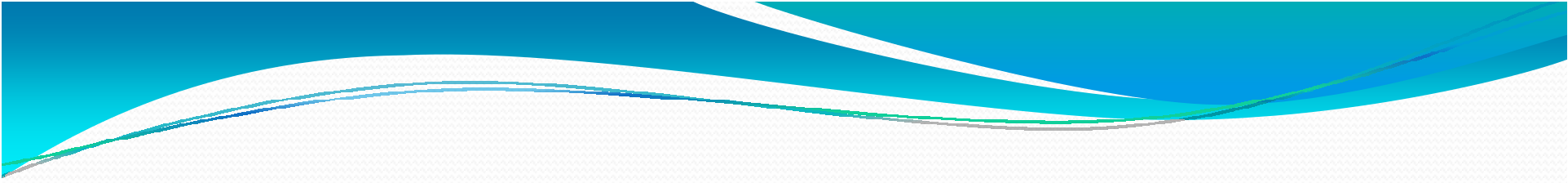


Controlled by application of systemic insecticides like Rogar, Ekalaux, Anthio, *etc.*, at 5% with safe period of 45 days.

**(2) Stem Borer:- Is the major pest -
The carpenter worm, *Zeuzera multistrigata* cause extensive damage by tunneling the trees. The female moth lays eggs on the tree trunk. The larvae bore through the bark and make a tunnel and commence intensive feeding of the middle portion of the tree trunk, completes its growth, pupates inside the tunnel and moth emerges through the hole made by the larva.
A single female moth lays more than one thousand eggs scattered on the tree trunk.**



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- **Control:** Fumigants *i.e.*, Chloroform, Benzene *etc.*, controls the pest. Cotton wool soaked in anyone of these fumigant chemicals is used for plugging the larval entry hole and then the site of infection is plastered with mud. This method is found to be very effective.
 - **Fumigant insecticides like Nuvan also control this pest.**



(3) Leaf Miner: Caterpillars like semiloopers cause extensive damage to the leaves of *som* and *soalu*. The semiloopers feed voraciously and leave large holes on the leaf surface. The semiloopers are nocturnal in feeding habits and at times cause very serious damage.

Control: Spray of 10% Thiodan or 10% Endosulfan is found to be very effective with safe period of forty five days.

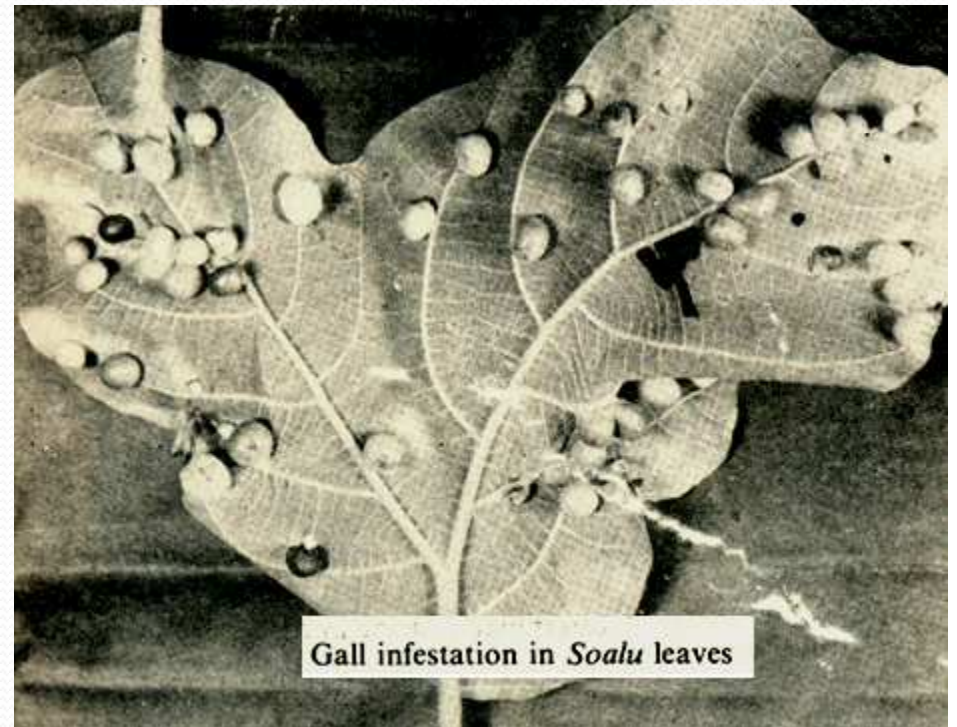
(4) Leaf Galls:- *Paropsylla bersoni* (Psyllidae:Hemoptera)

Apanteles sp. induces gall in *som* leaves. The leaves with galls become unsuitable for feeding. Galls are seen throughout the year; however, more prevalent during June-November.


The control measures are yet to be determined.



Gall infestation in *Som* leaves



Gall infestation in *Soalu* leaves



(5) Leaf Roller:- This is a serious pest of soalu. The female moth lays clusters of eggs on the ventral surface of the leaves. The eggs are agglutinated to the leaf surface, the developing larvae secrete gummy substance and roll the adjacent leaves forming roll of leaves as if stitched to each other. The larvae develop inside the leaf rolls where the faecal materials also accumulate causes the leaves unsuitable for muga culture.

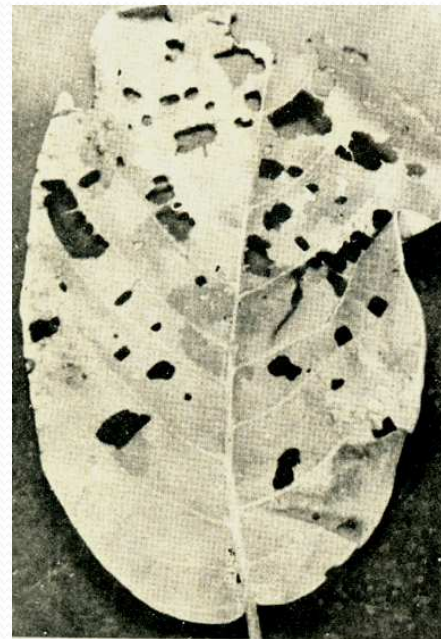
Mechanical control and spraying of 10% Thiodon reduces the incidence of leaf roller.

(6) Hairy Caterpillar:-

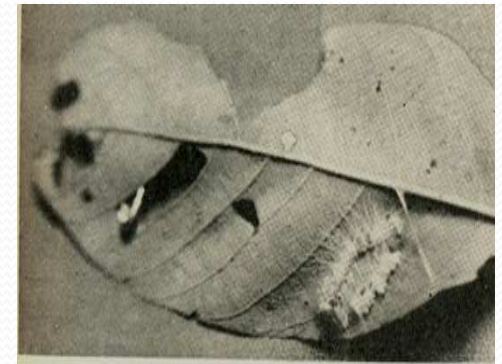
Hairy caterpillars at times cause damage to *soalu* plantations.

These caterpillars feed on the chlorophyll portion of the leaves leaving the veins and midrib. The caterpillars can be collected and destroyed.

However, this is not a very serious pest.



Hairy caterpillar damage in *Soalu* leaf



Hairy caterpillar attack *Soalu* leaf



Defoliation of *Som* tree by caterpillar


Diseases of Som and Soalu

Plants are susceptible to a number of diseases which render the leaves unsuitable for rearing.

Diseases of Som:

Grey blight:- caused by a fungus known as *Pestaiotiopsis dessiminate*. Minute brownish patches appear on the leaves which soon turn grey. The disease starts from the tender leaves which die out from the top. Affected leaves become dry with dark greyish colour on the soft tender leaves.

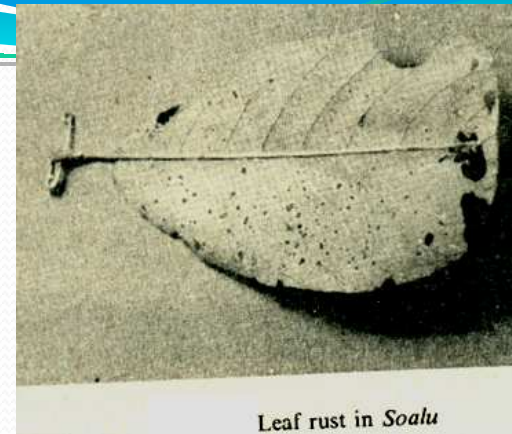
Control measures:- Spraying of 1% Bordeaux mixture with safe period of one month.



2. Leaf spot:- The affected leaves develop a number of circular or irregular dark brown spots with pale yellow margin. The leaf spot disease in *som* is caused by *Cercospora sp.* Which belong to the class *fungi imperfectii*.

Control measures:- Spray 0.2% Difolatan with safe period of 20 days.

3. Red Rust:- Is caused by *Cephaleurus sp.* (class: Chlorophyceae), it is an inter cellular parasite, restricted to older leaves only.



Leaf rust in Soalu

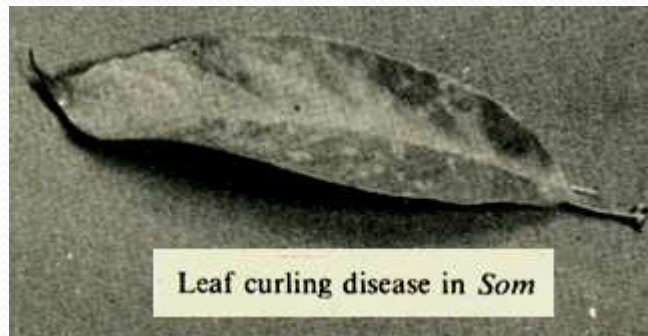
Symptoms: Appearance of orange yellow patches on the upper surface of the leaf. The patches may be numerous or few, crowded or scattered. The disease has been observed throughout the year. In case of severe attack, most of the leaves become yellow, and unhealthy and are not suitable for feeding.

Control measures: (i) Clean by pruning / removal of the affected twigs and burn them.

(ii) Apply Bordeaux mixture @ 1500 lt/h.

4. Leaf curling: Mosaic symptoms, occasional curling of leaves and stunted growth of the plant are indicative of leaf curl diseases. Causative organism may be virus.

Control: Plant parts may be removed and burnt.





5. Wilt: Progressive drying of leaves and young shoots result in plant wilting. This is more common during February and March.

Causative organism may be virus.

Control measures: Prune all dead and affected shoots and burnt separately. Spraying of 3% Bordeaux mixture is effective.

Diseases of Soalu


1. Red Rust: Is caused by *Cephaleurus* sp. It is restricted to older leaves and common during winter when the leaves become mature. The symptoms and control measures are same as those for *som*.

2. Leaf spot: Minute dot like irregular black or brown spots with light yellow margin appear on both surfaces of the leaves. The centre of the spots later falls off leaving a hole on the leaves.



Control Measures: Spray 0.3% Bordeaux @ at weekly intervals.

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**Field sanitation is a must
to reduce the
pest and disease incidence**



PESTS AND DISEASES OF ERI FOOD PLANTS

PESTS OF CASTER FOOD PLANTS

- **Castor Semi Looper - *Achoea janta* L.**
- **Capsule Borer (red hairy caterpillar)-*Dichochrocis punctiferalis***
- **Caterpillar (hairy caterpillar) - *Euproctis lunata***
- **Mealy wing - *Trialeurodes ricini* Misra.**
- **Castor Jassid - *Empoasca flavescerus* Pb.,**

These insects attack foliage, shoot and capsules.

CONTROL OF PESTS

These pests are effectively checked by dusting with 10 % DDT or BHC or spraying 0.03 % Endrin, with calcium arsenate, 0.1 % Malathions and 0.05 % parathion insecticides with recommended safe period.

In addition to physical, mechanical and cultural methods.

DISEASES


- a) **Seedling blight** - It is caused by a fungus *Phytophthora colocasiae*. It attacks the leaves of seedlings and older plants. It is prevented by avoiding damp and low lying localities for plantation and by providing good drainage.

The symptom of disease is a roundish patch of dull green colour, changing to yellow and brown spots at later stage.

Spraying with Bordeaux with 10-12 days of safe period is helpful.

- b) **Rust** - It is caused by a fungus called *Melampsora ricini* (Bv) Pass., which attacks the leaves causing them to wither and dry up prematurely.

It is controlled by spraying the crop with sulphur.



c. Alternaria blight - Is caused by *Alternaria ricini* which attacks all the aerial parts of the plant like stem, leaves, inflorescence and capsules.

The affected parts are covered with a bluish green or sooty growth. It becomes extensive during rainy season, and is transmitted through seed-both externally and internally.

Seed treatment may be useful.



d. *Cercospora* leaf spot - It is caused by *Cercospora ricinella*. They are covered by a large number of roundish or irregular spots which wither and dry up. The disease destroys quite a great bulk of leaves.

Bordeaux mixture or other copper fungicides may be used to arrest the disease.



PESTS AND DISEASES OF TASAR FOOD PLANTS

COMMON PESTS AND DISEASES OF TASAR FOOD PLANTS AND THEIR CONTROL

PEST/DISEASE	DAMAGE	CONTROL
STEM BORE R	LARVAE BORE IN TO THE T. ARJUNA & T. TOMENTOSA SHOOTS KILLING THE BRANCHES	PLUGGING WITH COTTON SOAKED IN PETROL/KE ROSE NE OIL AND PASTING WITH MUD. LIGHT TRAPS FOR ADULTS
GALL FLY	YOUNG FLIES PRODUCE UGLY GALLS ON T. ARJUNA & T. TOMENTOSA FOLIAGE	DIMECRON @ 0.03% OR ROGOR 0,5% IS EFFECTIVE
TERMITES	ATTACK THE FOOD PLANTS AT ALL STAGES OF GROWTH	TERMITE SHOULD BE UNEARTHED AND DESTROYED BY POURING CRUDE OIL EMULSION/ALDRIN (30% E.C.) EMULSION. ALDRIN DUST (5%) SHOULD BE MIXED WITH SOIL @ 20KG/HA

COMMON PESTS AND DISEASES OF TASAR FOOD PLANTS AND THEIR CONTROL

PEST/DISEASE	DAMAGE	CONTROL
MAY/JUNE BEE TLE	FEEDS ON THE LEAVE S OF FOOD PLANTS	OPTIMUM TILLAGE OPERATIONS AND SOIL APPLICATION OF ALDRIN DUST @ 5% / 20KG/HA
STEM CANKER	TUMOUR LIKE GROWTH ON T. TOMENTOSA TWIGS INCREASES IN SIZE AND BURSTS INTO UGLY ULCERS	PRUNING AND BURNING OF INFECTED TWIGS, DRESSING OF CUT ENDS WITH BORDEAUX PASTE AFTER PRUNING. SPRAYING WITH ZINCOP (0.3%)
LEAF CURL	CRINKLING OF LEAF SURFACE	SAME AS STEM CANKER
ROOT ROT	AFFECTED ROOTS DECOMPOSE & DIE. POORLY DEVELOPED LATERAL ROOTS BECOME LONG SPREADING WITH AGE AND SPREAD INFECTION	BURNING OF DEAD PLANTS. DIGGING OF ISOLATION TRENCHES (1.5X0.7X0.3M) TO ISOLATE HEALTHY FROM INFECTED TRACTS



THANK YOU