

Ex No:13

Date:

IDENTIFICATION OF DIFFERENT MITE SPECIES

Objective:

To identify different plant parasitic mites through their characteristics and nature of damage.

Mites belong to class Arachnida and order Acarina. The phytophagous mites belong to four families viz. Tetranychidae (Spider mites), Tarsonemidae (Broad mites), Tenuipalpidae (False spider mites) and Eriophyidae (Gall/ Itch/Rust/Erenium mites).

Mites are tiny creatures that infest and cause severe loss to agricultural and horticultural crops both in field and storage. They also cause allergies in human beings, harmful to productive insects besides acting as vectors of important viral diseases.

Identification of important spider mites

1. Jowar mite: *Oligonychus indicus*

- Grayish green mite with black blotches scattered over dorsum.
- All stages occur together living in a delicate web of silk.

Hosts: Banana, sugarcane, sorghum and *Panicum* spp.

Symptoms on plants: On sugarcane and sorghum, red spots appear which coalesce forming large red patches
Leaves become red necrotic and dry

2. Red spider mite: *Tetranychus telarius*

- Very minute, < 1/16th of an inch.
- Colour variable- nearly white, greenish, orange & red.
- Mature ones are red
- Upper surface of body is sparingly covered with long stiff hairs.

Hosts: Okra, cotton, citrus, tomato, grape, papaya, jasmine and pumpkin

Symptoms on plants: Browning of leaves, fruits and hairy outgrowths on both.

3. Red vegetable mite: *T. neocalidonicus*

- Nymphs yellow to brown after hatching & turn green, with dark specks along its side
- Adults are red to purplish red in colour
- Cause webbing that forms a thick sheath covering entire plant

Hosts: Okra, green beans, mango, watermelon, chrysanthemum and hibiscus

Symptoms on plants: Cause white spots on leaves that gradually coalesce.

Damaged portion of leaf turns red in some plants

4. Citrus leaf mite: *Eutetranychus banksi*

- Large mites seen with naked eyes
- Adults vary from tan to brownish green with dark brown & greenish spots and bars near lateral margins
- Females have round and flattened body with dorsal H shaped marking
- Males small, elongated with long legs

Hosts: Citrus, papaya and lablab

Symptoms on plants: Stippling and leaf discolouration

Leaf abscision and rind scarring on fruits

Identification of important Gall/ Rust mites

1. Citrus rust mite: *Phyllocoptruta oleivora*

- Adult body elongate and wedge-shaped, three times long than wide.
- Extremely small
- Light yellow to straw coloured

Hosts: Citrus

Symptoms on plants: Surface blemish of fruits, reduced fruit size

Increased fruit drop

Browning of fruit and shark-skin appearance

2. Coconut eriophyid mite: *Aceria guerreronis*

- Microscopic, cannot be seen distinctly with the naked eye
- Elongate and possess two pairs of legs
- White and translucent

Host: Coconut

Symptoms on plants: Small pale white or yellow inverted triangular patches beneath perianth.

Necrosis

Brown patches, longitudinal fissures and splits

Oozing of brownish gummy exudates from fissures of nuts

Malformed nuts

3. Jasmine mite: *Aceria jasmine*

- Female is cylindrical vermiform with two pairs of leg
- Measures about 150- 160 μ long and 44 μ thick.

Host: Jasmine

Symptoms on plants: Felt-like hairy out growth (erineum) on the surface of the leaves, tender stem and flower buds.

Growth of plant becomes stunted and flower production is also affected.

4. Sweet potato rust mite: *Oxypleurites convolvuli*

- Yellowish ,flattened spindle form species

Host: Sweet potato

Symptoms on plants: Leaves turn pale brown
Cause severe rusting

Identification of important false spider mites

1. Scarlet tea rust mite: *Brevipalpus australis*

- Nymphs are reddish while adults are rufous amber
- Ovate , sagittate
- Dorsal cuticular surface of body is reticulate
- Legs are short, stout and posterior pair barely reaches beyond tip of abdomen.

Host: Tea

Symptoms on plants: Chlorosis, blistering ,bronzing or necrotic areas on leaves

Identification of important broad mites

1. Chilli mite: *Polyphagotarsonemus latus*

- 0.2 mm, four pairs of legs
- Shiny amber, has white mid dorsal patch
- Invisible to naked eye
- Nymphs soft bodied and white

Hosts: Tomato and sweet pepper

Symptoms on plants: Deformation of buds and leaves
Curling, crinkling,scaring of underside of leaves
Stunted growth and development of witches broom like growth

Record Work

1. Observe the different mites under the microscope
2. Draw the body parts of a tetranychid and eriophyid mite.
3. Draw diagrams of a spider mite, broad mite, false spider mite and rust/gall mite.