Pacific Pests, Pathogens & Weeds - Fact Sheets

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Sweetpotato gall mite (138)

Photo 1. Severe infection of galls caused by the sweetpotato gall mite, *Eriophyes gastrotrichus,* on stems and petioles of sweetpotato.

Photo 2. Galls caused by the sweetpotato gall mite, *Eriophyes gastrotrichus,* on petioles of sweetpotato. Some of the galls grow up to 10 mm long and 5 mm wide.

Photo 3. Growers often plant cuttings that have galls on them, not realising that the galls contain mites, which may reduce plant vigour and consequently the yield of the plants.

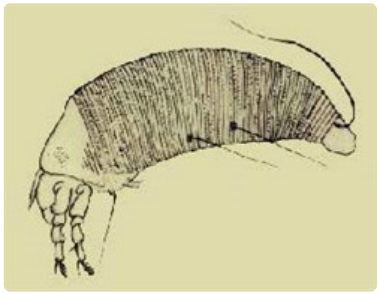

Figure. The mites are microscopic, too small to be seen by the naked eye; they are 0.15 mm long and 0.05 mm wide, tapering to the rear end.

Common Name

Sweetpotato gall mite

Scientific Name

Eriophyes gastrotrichus

Distribution

Widespread. South and Southeast Asia. It has been reported from India (wild *Ipomoea*), Indonesia, the Philippines and Papua New Guinea.

Hosts

Sweetpotato, and weeds in the Convolvulaceae (morning glory family).

Symptoms & Life Cycle

Irregular-shaped growths, known as galls, form on the stems, petioles and leaf blades (Photos 1&2). They vary in size from 2 to 10 mm in length, and 1 to 5 mm wide. It is thought that the galls develop when the mites inject a chemical into the plant as they feed.

The mites that cause the damage are too small to see with the naked eye. The adults are about 0.15 mm long and 0.05 mm wide (Figure). Eggs are laid in the galls, and these hatch as nymphs, emerging as adults to infest new vines. The adults are wormlike, white, cylindrical, and become narrow towards the rear end. The body surface has numerous fine lines that give it a wrinkled look. Inside the galls, there are mites at all stages of development.

The mite is spread in galls on cutting used for planting (Photo 3).

Impact

When there are heavy infestations of mites, and large numbers of galls on each shoot, the shoots become deformed. Trials in Indonesia, in 2011, compared growing plants from gall-free and gall-infected cutting and found that plants without galls had more storage roots (about 20%) and larger yields (about 15%).

Detection & inspection

Look for the characteristic galls on the vines. If a low power microscope is available cut the galls and examine for eggs, nymph and adults.

Management

QUARANTINE

The unrestricted movement of plant propagating material (cuttings, shoots and storage roots) has the potential of further spreading the gall mite, and should be done with caution. Follow the advise given in FAO/IBPGR *Technical Guidelines for the Safe Movement of Sweet Potato Germplasm* (http://www.bioversityinternational.org/e-library/publications/detail/sweet-potato/).

CULTURAL CONTROL

Before planting:

- Do not plant vines with galls; use only gall-free planting material.

During growth:

- Inspect vines regularly and cut off and burn any shoots with galls.
- Destroy weeds within and around sweetpotato plantings, especially *Ipomoea* species in the Convolvulaceae family. Note, little is known about alternative hosts of this mite. In India, it has been recorded on *Ipomoea staphylina*.
- Destroy any sweetpotato plants that are growing wild outside the planted crops.

After harvest:

- Collect the vines after harvest and burn them.

RESISTANT VARIETIES

It is likely that there are differences between varieties in the number of galls and the damage done to the vines, but no research has been done to find out.

CHEMICAL CONTROL

Trials in Indonesia with dicofol applied weekly did not increase the yield of storage roots. Note, dicofol is an organochlorine miticide related to DDT, and its use is restricted in many countries. Abamectin, a product derived from a soil bacterium may give better results. It is absorbed into plants but is not systemic. Tests are needed to confirm its suitability against this mite.

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