

Extension Fact Sheet 14: Taro Leaf Blight



Common name: Taro leaf blight

Scientific name: *Phytophthora colocasiae*

Hosts: The fungus attacks taro and *edu* (*vili*, *nepa*; *Alocasia*); these are the only two hosts known from the Pacific islands.

Damage

Taro leaf blight reduces the life of the leaves: instead of lasting 40 days they last 20. The result is plants with few leaves and small corms. Yield is reduced by about 40%.

Taro leaf blight also causes a firm, brown corm rot after harvest. It takes 7-10 days, before the corm is completely decayed; often other fungi are present in the rots.

Biology and Life Cycle

The fungus is active in wet weather. Spores (photo above, lower right) are produced on the leaves and spread in wind and rain to other plants nearby or longer distances to new gardens. If they land on a leaf, and it is wet, they germinate. There are two ways:

- the spores germinate, like a seed, and infect the leaf; or
- the spores produce smaller spores, which burst out and swim short distances over the leaf before they germinate and infect.



In both cases, the fungus kills the cells of the leaf and brown spots occur. The spots grow very fast. They have yellow margins, and red-brown droplets develop on the under surface. The droplets dry as dark pellets (photo above, right). Infection occurs anywhere on the leaf surface, but often starts at the edges where rain and dew collect.

After a few days, a white ring can be seen near the margin of the spot; this is the area where spores are produced (photo, near right). There are millions of them. However,

the spores dry out quickly in the sun and by mid-morning they have shrivelled and died. They only stay alive if it is cloudy or raining.

Apart from wind and rain, spread can occur in other ways: (a) on suckers planted with infected leaves attached; (b) on stalks of planting material – probably on the cut ends in wet weather when stalks are trimmed for planting.

Corms become infected only after harvest, when the suckers are removed.

Signs and Symptoms

Look for spots that grow rapidly (photo above, left), and leaves that die early - plants have 3-4 leaves instead of 6 -7. Look for secondary spots produced below the first ones (photo above, centre). White rings of spores border the spots, seen most clearly in the early morning. Look for black, irregular pellets on the underside of the spots.

Management

Where rainfall is high, taro leaf blight is difficult to control. Cultural control can be tried, but it is often not effective.

Cultural control:

- Make new gardens as far away as possible from old ones;
- Inspect young taro twice a week; cut off infected leaves as soon as they are seen. Do this often, but it can only delay the disease where rainfall is high;
- Plant suckers without leaves attached;
- Cut taro stalks for planting when the ‘tops’ are dry.

Apart from the above, the best cultural practice is to make gardens in the highlands. The disease is much less at cooler temperatures.

Resistant varieties:

Breeding programs in Papua New Guinea and Samoa have produced plants resistant to taro leaf blight. Some of these are available from MAL. In Solomon Islands, a hybrid, LA16, has been found to be resistant to taro leaf blight.

Chemical control:

- Use copper fungicides (especially copper oxychloride), but they have to be used often and are only recommended where taro are grown for sale;
- Use metalaxyl (a systemic product) in combination with copper; it gives even better control, but costs are high;
- Use phosphoric acid alternating with mancozeb (used successfully in Samoa).

To prevent storage rots, wash the soil off the corms, trim the leaves and put them in plastic bags. Washing the corms in 1 per cent household bleach beforehand improves storage.