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**National Agricultural Research Institute**

**WET-LOWLANDS MAINLAND PROGRAMME**

**METHODS OF CONTROLLING TARO LEAF  
BLIGHT**



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**Taro Leaf Blight (TLB)** is caused by a fungus called phytophthora. It is an important disease and one of a major factor in low taro production in Papua New Guinea. It is serious in areas with high rainfall (over 2,500 mm) spreading evenly through out the year.

Within the pacific region, it is present in PNG, Solomon Islands and the Trust Territories of the Pacific Islands.

#### **WHAT ARE THE SYMPTOMS OF TARO LEAF BLIGHT?**



The first sign of the disease is a small circular speck, brown on the upper leaf surface and water soaked below. Infection often begins on the lobes where the water droplets accumulates. The circular spores begins to enlarge and be-

come irregular in shape and a dark brown with yellow margin. The initial spots give rise to secondary infection and most of the leaf blade become colonized very rapidly.

Spores producing areas are clearly seen in early morning as a narrow white border around the spots. Under neat on the leaves is a clear yellow to red liquid which emerges from the centre of the spores and be-

## CHEMICAL CONTROL:



The disease can be controlled by spraying of copper fungicides beginning when infection first occurs and continuing at 7 – 14 days intervals through the stage where there is a full leaf canopy and until the natural decline in leaf area commences, this is about 100 days from planting. Copper oxychloride sprays at 4.5kg/hactre in 100 litres of water in a motorized spray

knapsack mist blower is recommended. Also a manual 15 or 20 liters knapsack sprayer can be used provided that a safety precautionary measures are taken, such as wearing safety protection clothing to protect your body when spraying.

## CONCLUSION:

The release of these taro varieties will diversify the genetic base of crop in the country and will give farmers more choice of diversified taro leaf blight (TLB) resistant materials with high yield and good eating quality.

comes dark brown and hard when dry. The fungus can cause a post harvest corm rot which is difficult to see unless corms are cut open. This is light brown and hard in contrast to the softer rots caused by the fungi Pythium and Botryodiplodia and the wet rot of the bacterium Erwinia.

## HOW DOES INFECTION OCCURS?

Spores of the fungus are moved by wind and rain splash and dew to new areas of the same leaf, or even move on to the new plants or to new plantings. Rapid spread of the disease is favoured by the temperatures and relative humidity.

The disease can also be spread on planting materials because the fungus can remain alive on planting tops for at least three (3) weeks after harvest. Spores of the fungus can be washed from the leaf spots into the soil to contaminate the outside of the developing corm. After harvest these spores infect and rot the corm tissue.

## WHAT ARE THE EFFECTS OF THE DISEASE?



Healthy leaves of taro may live for 40 days, but those infected leaves by the fungus can be destroyed within 10 – 20 days and plants may be reduced to two (2) or three (3) functional leaves, compared with the

normal leaf growth situation when 6 – 7 leaves are present. A reduction in yield of 30 – 50 % (percent) is not uncommon in places where climatic conditions favor the disease. The disease also reduces the size of planting materials for the next cropping season.

### **WHAT ARE THE CONTROL METHODS?**

#### **CULTURAL CONTROL:**



During the first three months after planting and where infection is mild, removing and burning infected leaves can be effective in controlling or delaying in rapid build up of the disease. There have been reports that wide spacing of plants may help in reducing disease incidence but locally

this has had negligible benefit when conditions are especially favorable to the disease.

Crop rotation is not effective, but a delay of at least three weeks after harvest before replanting the same site should be observed because the same fungus can not survive well within the plant debris or in the soil. Parts of infected plant materials after harvest should not be left

lying in the field can harbour the fungus. New plantings should not be established next to those already infected, if the taro suckers have the top leaves. Remove the leaves of taro suckers as they can be the source of fungus spores that may infect the new sprouting leaves.

#### **RESISTANT CULTIVARS:**



Resistant varieties have been developed by the taro breeding programme of Papua New Guinea (PNG) National Agricultural Research Institute (NARI) was established in 1993 under the Department of Agriculture and Livestock (DAL). The programme has

focused on breeding taro varieties with resistance to taro leaf blight (TLB) and with improved yield and eating quality. National Agricultural Research Institute (NARI) has released four (4) taro cultivars (varieties) known as NARI Taro One (NT 01) NARI Taro Two (NT 02) NARI Taro Three (NT 03) and NARI Taro Four (NT 04). These four released NARI taro varieties with resistant to Taro Leaf Blight (TLB), good eating quality and high yielding performances has now being distributed and well adopted by the farmers and stake holders throughout Papua New Guinea.