# PLANT PATHOLOGY NOTE: NO. 34

## How to send diseased plant specimens for identification

Derek Tomlinson, Deputy Director, Agricultural Research Division
D.A.L., P.O. Box 417, Konedobu.

### INTRODUCTION

There are many plant diseases which affect the growth of crops in Papua New Guinea. Many of these we do not yet know about. The diseases may occur only in a small area of the country or may kill only a few plants in a garden at any one time. However, such diseases can often become serious very quickly. If we know where they occur we stand a better chance of reducing their effects in a big disease outbreak.

For this reason we need a constant flow of information and plant disease samples coming into the Crop Protection Laboratories in Konedobu. The purpose of this Note is to advise growers of the best way to send plant material to us so that it arrives in good condition and a quick diagnosis can be made. The address to send samples is given at the end of this article.

### SENDING SAMPLES

As soon as you notice plants dying or looking sick, ask your local didiman to come and look at them. If he doesn't know what is wrong with your plants then send samples to the Plant Pathology Section, D.A.L. Kila Kila. The important thing about sending samples is to ensure that they arrive in good condition. This helps the plant pathologist in observing the symptoms of the disease and then making isolations of disease-causing organisms from the affected part of the plant. Plant parts showing the signs of the disease should be sent. When you are not sure what the symptoms are, then the whole plant including the roots should be sent.

### PREPARING SAMPLES FOR IDENTIFICATION

It is important to pack the plant in the correct way to avoid damage during transportation. For small plants such as potato, sweet potato, tomato and peanut, firstly remove any tubers or fruit. Then press the plants between sheets of newspaper. Do not throw the tubers or fruits away. Wrap these in separate newspaper and place in small cardboard boxes. Tubers that have badly rotted should not be sent in the post. Only tubers with early signs of rot should be sent. These will be in suitable condition for examination on arrival at the laboratory.

Keep the pressed samples together between two pieces of cardboard. This keeps the sample tightly packed and thereby prevents damage.

#### Soil

If you are not sure that a disease is causing your plants to grow poorly you should send a soil sample. This should be taken from around the roots and placed in a polytene bag. One half shovelful is enough. This soil sample can be analysed to check whether all the nutrients necessary for growth of the plant are present. We can also extract and count some soil organisms that can damage plant roots.

#### Large Plant or Trees

If large plants or trees are dying ask your local didiman to come and look at them. He may be able to tell you what is wrong. If he doesn't know, he can arrange to have part of the plant or tree sent to Crop Protection Laboratory for examination.

Before he does this he should telephone the plant pathologists and describe the symptoms. The pathologist can then usually say which part of the plant is likely to be diseased. Large woody plant specimens can be placed in a sack for shipping to D.A.L.

### DETAILS OF SAMPLES

When sending samples the following information should also be included.

1. Name of the plant.
2. Symptoms of the disease on the plant (eg leaf spots, wilting, poor growth/stunting, loss of green colour in leaves, smaller leaves than normal, abnormal appearance of plant)
3. Location of where the disease is occurring.
4. Number of plants affected (few, several, all) and different crop plants affected. (List all the different types of plant which appear to have the same disease and if possible

send samples of each different plant type to Konedobu for examination).

5. Number or size of garden(s) affected by the disease.
6. Details of any previous trouble with the same disease.
7. Date on which the infected plants were collected from the garden.
8. Name, address and telephone number of the person sending the samples.

Before sending the sample, it is advisable to let the plant pathologist know how you are sending the samples eg air freight, post, or hand delivery. If sending by air freight give the consignment note number and the flight on which the plants are likely to be transported so that Plant Pathology staff can collect them from the airport as soon as possible after arrival. It is better to send plant samples by the fastest method available (ie air freight or hand delivery). Long delays could result in the plants getting damaged.

## RECOMMENDATIONS

After identifying the disease the pathologists will be able to make recommendations for its control. If it is necessary to use a fungicide the pathologists will explain which one should be used, how much is needed and how it should be applied.

When the disease control recommendations have been carried out, the farmer should write to the plant pathologists to tell them how successful they were. This will be of great help to the plant pathologists in making recommendations next time the disease occurs.

## HANDLING OF CHEMICALS

There are certain safety precautions which must be carried out when handling fungicides or any other chemical. These involve the person using the fungicide and any other people or animals which may come into contact with the fungicide or the treated crop. These precautions are listed in Entomology Bulletin No. 9.

A separate article, Entomology Bulletin No. 6, explains how to send insect pests for identification.

## ADDRESS OF PLANT PATHOLOGISTS

The Chief Plant Protection Officer, Port Moresby - D.A.L., P.O. Box 2141, Boroko, N.C.D.

## FURTHER INFORMATION

Copies of this Plant Pathology Note, and of others in the series are available from the Publications Officer, Publications Section, D.A.L., P.O. Box 417, Konedobu.