PLANT PATHOLOGY NOTE: NO. 17

SWEET POTATO LEAF SCAB

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INTRODUCTION

Sweet potato leaf scab or spot anthracnose is caused by the fungus *Elsinoe batatas*. It is very common in the highlands of Papua New Guinea. It is also found in the lowlands, but it is not so common there. The disease was first reported in the 1940's in Brazil and Guam. It is now known to attack sweet potato in South America, Indonesia, Japan, Malaysia and the Pacific Islands.

The way sweet potato leaf scab spreads from one plant to another is ideally suited to the climate of the Papua New Guinea highlands. Spores from the surface of the scabby areas are scattered by rain. Cool conditions are best for spreading the disease. The spores can survive in rotted plant material.

Sweet potato plants infected with sweet potato leaf scab can show big reductions in yield.

SYMPTOMS

The fungus feeds on the living cells causing them to thicken. The disease is first seen as brown lesions (spots) on the main veins and midrib on the undersurface of the leaves. Leaves may be reduced in size and distorted. In bad cases,

Leaf scab on sweet potato leaves and vines. The disease causes the leaves and vines to curl up.

the whole plant appears distorted, lesions are found on petioles and stems, and the growing points of the vines may be killed.

The tubers do not show symptoms.

ECONOMIC IMPORTANCE

Leaf scab infection has been recognised as the cause of large yield reductions in Polynesia. In Malaysia and Guyana, it has been such a serious problem that resistant varieties have been developed.

A trial conducted in the Simbu Province has also shown a significant yield reduction in

sweet potato affected by leaf scab. Two varieties were tested: 'Wanmun red' and 'Konme'. Leaf scab was found to reduce the yield by more than 50% in both varieties.

Even if 25% of the crop is lost because of scab, this could cause large losses of money to the small commercial grower. If his yield is reduced from 12 to 9 tonnes/ha, this means a loss of K300/ha if he sells at 10 toea/kg.

CONTROL

The best method of control in other countries has been to use resistant varieties. It is not known yet whether there are any resistant varieties in Papua New Guinea. Certainly some varieties are more likely to be affected than others. For example, in the Simbu Province, over 80 varieties have been tested for the disease. All were found to be infected to some extent. However, in some cases the infection was hardly noticeable, but in others it was very serious.

If an area is badly affected by leaf scab, this area should not be replanted to sweet potato. All the plant refuse should be turned under and the ground planted to other crops.

If the stock of vines for replanting is infected, disinfected small roots may be used. The roots are disinfected by dipping them for 20 minutes in a 1:5 chlorox solution. They are then sprouted in a moist place. The disease-free sprouts are used for transplanting.

Spraying is a simpler though more expensive method of control. Fortnightly sprays of Bordeaux mixture are recommended at a concentration of approximately 7 g per litre of water. In the trial in the Simbu Province, Benlate was used successfully at a concentration of approximately 0.5 g per litre of water.

FURTHER INFORMATION

For more information about sweet potato leaf scab, and resistant varieties of sweet potato, contact the author at Simbu Land Use Project, P.O. Box 76, Kundiawa, Simbu Province, or the Chief Plant Pathologist, D.P.I., P.O. Box 417, Konedobu.

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