

EXOTIC DISEASES OF IMPORTANCE TO OIL PALM (*Elaeis guineensis*) IN PAPUA NEW GUINEA



The diseases shown in this poster have been found to affect oil palm (*Elaeis guineensis*) and coconut (*Cocos nucifera*) in other countries. These diseases are not currently known to be present in PNG and could possibly be introduced by importation of germplasm without adequate testing and control or by accidental introduction of crops or vectors across borders. It is important to note that some of these organisms may also occur naturally in PNG but have not developed pathogenic strains or types.

RED-RING DISEASE

Origin / Occurrence

This disease is originally a disease of coconut and bears the same name. It is prevalent in some countries of South America where it is caused by the nematode *Rhadinphelencus* (*Bursaphelencus*) carried by the large palm weevil *Rhincophorus palmarum*.

Symptoms

Shortened young leaflets, necrosis of leaflet tips, gradual dessication of fronds, reduced bunch production and eventual death of the palm. The trunk, when cut, has a characteristic 'red' ring.

Control

Treatment of the disease is through the control of the vector with insecticides and by the removal of infected palms.



Photos: JP Tovar

LETHAL WILT (MARCHITEZ LETAL)

Origin / Occurrence

This disease is present in South America and the causal agent has been found to be a phytoplasma of the aster yellows group.

Symptoms

Gradual desiccation of fronds from the tips inwards. Rotting or aborted bunches leading to cessation of production and death of the palm within 6 months of detection of the first symptoms.

Control

Removal of infected palms. Treatment with tetracycline antibiotics maybe effective in the early stages of the disease but it is very expensive and ineffective at advanced stages of the disease.

Photos: JP Tovar



SUDDEN WILT

Origin/Occurrence

This disease is found in the wetter areas of South America and possibly in SE Asia.

The causal agent of this disease is an organism called *Phytomonas* sp., a flagellate that is present in the soil. Its transmission by soil-burrowing insect vectors has been suggested but not confirmed.

Symptoms

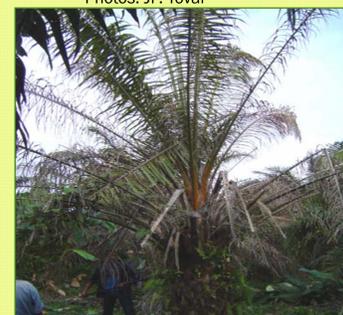
Yellowing of the leaves followed by dessication starting from the lowest fronds and finally death of all the fronds. A foul bacterial odour accompanies the symptoms in the advanced stages.

Control

The only means of control is by removal of infected palms and avoiding planting in areas with poor drainage.



Photos: JP. Tovar



FUSARIUM WILT

Origin/occurrence

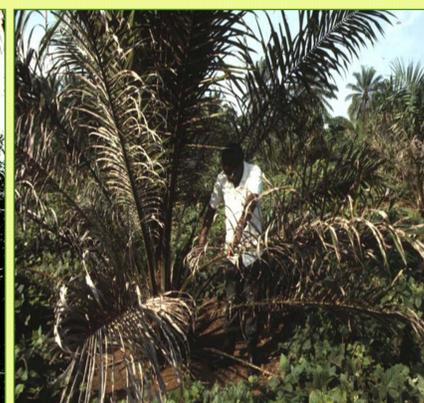
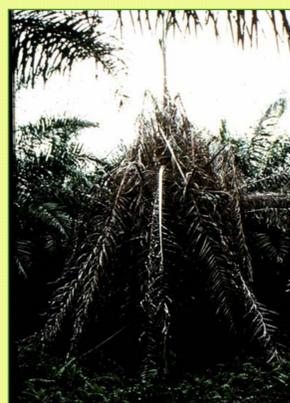
The likely origins of this disease are in West Africa where the oil palm originates. FW is the major disease in West Africa. It is caused by a special form of the fungus *Fusarium oxysporum* known as *F. oxysporum* fsp. *elaedis*. The fungus is soilborne and is spread by infected soil and plant material, including seed.

Symptoms

Symptoms include yellowing, dessication of the leaflets in the lowest fronds followed by frond fracture midway along the length of the rachis. Younger fronds will become yellow and also bend or fracture closer to the stem. Wilting of the lower fronds is sometimes observed.

Control

Removal of infected palms and prevention of movement of soil from infected areas.



Photos J. Flood

Photo: P D Turner

BUD ROT (PUDRICION COGOLLO, PC)

Origin/Occurrence

Bud rot is present in most countries of Latin America. There is no known cause for this disease but the insect *Myndus crudus* is thought to be the vector of the causal agent. Insecticide trials however, have not yielded conclusive results. Recently, *Phytophthora palmivora* has been implicated in this disease in younger palms.

Symptoms

Rotting of the spears followed by death of the surrounding, lower fronds. The majority of palms will eventually recover but yield recovery takes 3 years or more.



Photos: JP. Tovar

CHLOROTIC RINGSPOT

Origin/Occurrence

The disease is known from South America (Colombia) and a single outbreak has been reported in the Philippines. It is caused by a *Potyvirus* that is carried by insect vectors, probably aphids.

Although considered a nursery disease, the long-term effects of this disease on palm health have not been studied.

Symptoms

In the early stages pale white rings form on leaflets indicating presence of the virus in these spots. After a few weeks, the pale areas will darken until they achieve bright orange colour. It is not known if the virus is still active at this stage.

Control

There is no published methodology on the control of this virus. Immediate culling of affected palms and insecticide treatment to control aphid populations is the best option at present.

*Potyvirus*es may be transmitted through seed and seed imports from affected countries should be tested.



Photos: C Pilotti