

Phytophthora palmivora Butler (Butler)

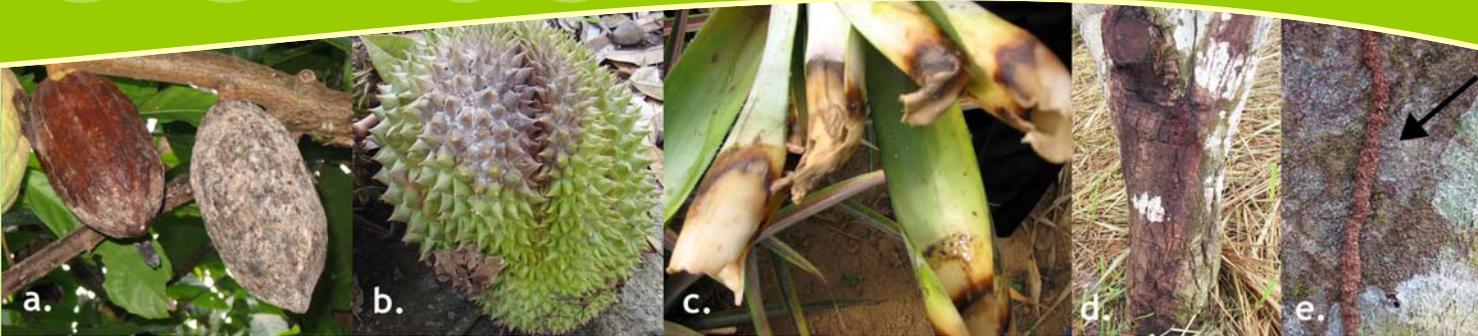


Fig. a. Black pod of cocoa; b. fruit rot of durian; c. heart rot on pineapple d. Stem canker on a jackfruit tree; e. ant trails carry *Phytophthora* into the canopy.

Diseases: Fruit rots, stem cankers, leaf and seedling blights and root rots of tropical plants.

Classification: D: Eukaryota, K: Stramenopila, C: Oomycota, O: Peronosporales, F: Pythiaceae

Phytophthora palmivora is a ubiquitous pathogen causing many different diseases on a wide range of plants. The pathogen is believed to have originated in Southeast Asia but is now pantropical. It causes significant losses to farmers of tropical fruit and vegetable crops.

Host Range:

P. palmivora infects a thousand or more plant species including ornamental, horticultural and agricultural crops. It is also a common soil inhabitant. Important horticultural hosts include cocoa (black pod (Fig a), canker, cherelle wilt), papaya (fruit rot), durian (fruit rot (Fig b), canker) pineapple (heart rot (Fig c), citrus (canker), black pepper (foot rot) and coconut (bud rot).

Impact:

P. palmivora thrives under humid wet conditions, and as a result can cause significant losses in many economically important tropical fruit crops. Symptoms include root rots, collar rots, stem cankers (Fig d), leaf blights and fruit rot. In the nursery, the pathogen can lead to heavy losses through seedling blight.

Key Distinguishing Features:

P. palmivora has conspicuous papillate sporangia, which can be distinguished from other *Phytophthora* species because they are caducous and have short pedicels. The sporangia form on sympodial sporangiophores.

Dissemination and spread:

Primary inoculum originates from the soil and infected plant material. The pathogen is disseminated through rain splash, insects and human activity into the canopy of trees, where symptoms appear. Secondary inoculum spreads rapidly through wind and rainsplash, contact and vector activity (Fig e) in humid weather.

Management:

Phytophthora palmivora can be managed using cultural and chemical methods. The use of resistant varieties, improved nursery hygiene, sanitation (including complete harvesting and the removal of infected planting material and weeds), pruning to improve air flow and reduce humidity and improving soil health by increasing organic matter can be used as part of an integrated management strategy.

Chemicals used in the control of *P. palmivora* include phosphonates, metalaxyl or copper hydroxide to paint cankers, and phosphonates as a soil drench, trunk injection or foliar spray.

Further Reading:

Drenth, Guest (2004) Diversity and Management of *Phytophthora* in Southeast Asia. ACIAR Monograph No. 114, 238p. Saul-Maora (2008). Diversity of *Phytophthora palmivora* in Papua New Guinea. PhD Thesis, University of Sydney. Erwin, Ribeiro (1996) *Phytophthora* diseases worldwide. St Paul, USA, American Phytopathological Society Press.

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