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Phytophthora Black Rot of Orchid (*Phytophthora palmivora*)

Date Reported: January, 2007
Collected by: Jesse Bamba and Phoebe Wall
Place: Dededo, Guam
Operation: Nursery
Plant: Vanda hybrid cv. Bangkok Blue
Distribution: Known to occur only at one nursery, 85% of plants were infected.

Observations: Eleven six-inch tall Vanda orchids were submitted for evaluation. Nine of the plants inspected had necrotic areas, most often radiating from the base of the leaf, and with distinct margins (**Fig. 1**). White fungal growth on the necrotic areas could be observed with the naked eye. Microscopic examination of tissue taken from the margins revealed spores characteristic of Oomycetes (**Fig. 2**). Rot progressed on the plant during the three weeks they were kept in the lab under a plastic tent.

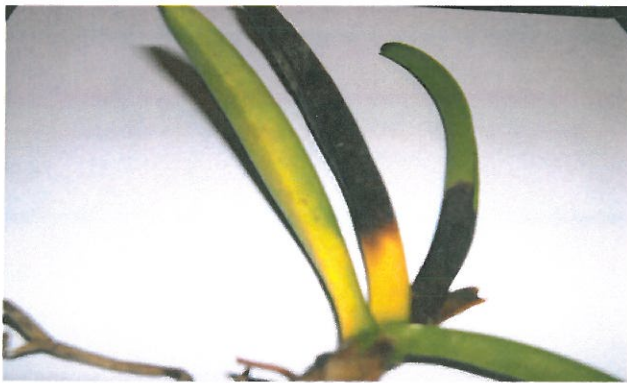


Figure 1. Phytophthora black rot symptoms on Vanda hybrid from a Guam nursery (photo by Pierre Wong).

Process: The causal agent was tentatively identified as *Phytophthora* from disease symptoms, spore morphology, and presence of zoospores (**1**).

Fungal samples from tissue tested positive for *Phytophthora* sp. using a “Pocket Diagnostic” batch J19 quick test kit made by Central Science Laboratory (CSL). *Phytophthora* from lesions were grown on pimarinic-ampicillin-rifampicin-agar (PARP), a *Phytophthora* selective media, and then isolated onto corn meal agar which was sent to Indooroopilly Research Center, Indooroopilly, Australia for species identification. A. Drenth identified the species as *P. palmivora*.



Figure 2: Lemon shaped spores, 65 X 50 μm, isolated from infected Vanda hybrid on Guam (Photo by Roger Brown, 400X magnification).

Conclusion: The disease is most likely *Phytophthora* black rot of orchid and the causal agent *P. palmivora*

References:

- Standard, D.J., G.M. Waterhouse, F.J. Neewhook, G.S. Hall. 1990. Revised tabular key to the species of *Phytophthora*. CAB International, Kew.