

Chirapa Imprasittichai 2011: Antifungal Activity of Plant Extracts Against *Pseudocercospora dendrobii* and Control of Yellow Leaf Blotch Disease in Dendrobium Orchid cv. 'Dang Piriya'. Master of Science (Agricultural Research and Development), Major Field: Agricultural Research and Development, Faculty of Agriculture at Kamphaeng Saen. Thesis Adviser: Assistant Professor Chalida Leksomboon, Ph.D. 57 pages.

Yellow leaf blotch disease (YLB) of orchid caused by *Pseudocercospora dendrobii* is one of the most destructive diseases in Thailand. Disease control potential towards YLB provided by crude extracts obtained from *Alpinia galanga* Linn., *Plumbago indica* Linn., *Zingiber montanum* Koen. and *Azadirachta indica* Linn. was investigated *in vitro* and *in vivo*. Antifungal activity of the plant extracts on the fungus *P. dendrobii* were determined *in vitro* by means of mycelial growth and spore germination. The plants were extracted with 95% ethyl alcohol and the crude extracts were tested on its effectiveness to inhibit growth of *P. dendrobii* on V-8 juice agar. It was found that the crude extract of *A. galanga* and *Z. montanum* at 5,000 mg/l, the crude extract of *P. indica* at 7,500 mg/l and the crude extract of *A. indica* at 30,000 mg/l could 100% inhibit mycelial growth of the fungus. The crude extract of *A. galanga* and *P. indica* at 2,500 mg/l and the crude extract of *Z. montanum* and *A. indica* at 10,000 mg/l could inhibit spore germination of *P. dendrobii* at 100%. The potential of the four plant extracts to reduce disease severity of YLB was determined under Paiboonpaireepairit greenhouse at Kasetsart University, Kamphaengsaen Campus. The plant extract at 20,000 mg/l were sprayed separately to Dendrobium Orchid cv. 'Dang Piriya'. Although the pathogen multiplied abundantly in the plant tissue, the plant extracts suppressed disease development. It was found that foliar spray of *P. indica* significantly suppressed YLB. The *P. indica* extract also reduced the disease severity 3 months after spraying crude extract on leaves of natural infected plants 7 days interval for 4 months. There was no significant difference between the other plant extract treatment and the control treatment. Also, there was no significant difference between fungicide (carbendazim) treatment and control treatment.

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Thesis Advisor's signature