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BIOLOGICAL CONTROL

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CONTROL OF WATERHYACINTH (*Eichhornia crassipes* (Mart.) Solms) BY  
*Aphanomyces* sp. THESIS ADVISORS: SITTIPONG DILOKWANICH, M.Sc.,  
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Objectives of this research were to explore and collect fungus which caused leaf blight to waterhyacinth (*Eichhornia crassipes* (Mart.) Solms) in natural water bodies of Greater Bangkok. *Aphanomyces* sp. was isolated and investigated for its pathogenic severity that caused waterhyacinth leaf blight in both greenhouse and natural conditions. The fungus was later evaluated for its potential use in biological control of waterhyacinth as well as for its impacts to aquatic plants or host ranges, namely *Nymphaea pubescens* Wild., *Neptunia oleracea* L., *Ipomoea aquatica* Forsk., *Limnocharis flava* (L.) Buchen. and *Monochoria hastata* (L.) Solms.

The research outcomes showed that *Aphanomyces* sp. caused damage to waterhyacinth throughout the year; it brought about especially severe leaf blight during the rainy season. Isolation of this fungal pathogen was obtained by either tissue transplanting or baiting technique. Mycelia and zoospore of the isolated fungus could induce leaf blight remarkably. Wounded leaves were more severely affected than the non-wounded ones. It was also found that *Aphanomyces* sp. NON-16, an isolated fungus from Klong Bangyai in Nonthaburi Province, was the most powerful strain which caused severe leaf blight. Six days after the inoculation in greenhouse condition, 38.11% of wounded and 18.30 % of non-wounded leaves were blighted. When zoospore suspension was sprayed onto three sizes of waterhyacinth leaves for 2 times at 7-day intervals, *Aphanomyces* sp. NON-16 critically damaged leaves within 14 days, notably the small-sized leaves. In addition, dry weight of the treated plants decreased by 62.58%. In natural condition, two inoculations showed a better result of plant damage. In host range study, mycelia of *Aphanomyces* sp. NON-16 did not harm 5 aquatic plants.