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The potential of Malaysian seaweeds as the source of antifungal compounds for application in the oil palm industry

Zetty Norhana Balia Yusof
Universiti Putra Malaysia, Malaysia

Oil palm (*Elaeis guineensis*) is a major contributor of the world's edible vegetable oil and also a potential source of biodiesel in Malaysia. However, it is confronted with a serious disease caused by fungi. *Ganoderma boninense*, a plant pathogenic fungus was recognized as the main factor that causes a disease which will affect the production of oil palm products and also causes death in palms. To date, there is no efficient strategy for early detection or control of this disease just yet. Fungicide and chemicals have been utilized as the main control but they are harmful for the environment and human health. Alternative disease control utilizing organic sources such as microbes and plants have been postulated to be having high potential. Seaweeds or also known as macroscopic, multi-cellular, marine algae have been known to possess various natural compounds with antifungal activities. Seaweeds are abundant in Malaysia and most of their potential and advantages are under-explored. The utilization of seaweeds will be a more natural way of controlling the disease without harmful effects to the environment as well as human. This project aimed at discovering potential local seaweeds which possess useful antifungal characteristics and also at elucidating their bioactive compounds with inhibitory activity against oil palm disease-causing fungus, *G. boninense*. Crude extracts were recovered from selected seaweeds of Malaysia and tested for their antifungal activities. Phytochemical analyses were carried out to identify the potential bioactive compounds for antifungal activities. This project is hoped to be the solution for the never ending hunt for the best disease-control mechanism of diseases caused by fungus in oil palm.

Biography

Zetty Norhana Balia Yusof is working as a senior lecturer in the department of Biochemistry, as a Faculty of biotechnology and Biomolecular Sciences. Her research interest are Thiamine (vitamin B1) biosynthesis pathway in plants, specifically in oil palm (*Elaeis guineensis*) and microalgae, effect of thiamine towards the immune system of plants, potential of seaweeds as a source of bioactive compounds, the hunt for riboswitches in plants. She is supervising 3 ongoing Master of Science students. She has been hosted by various awards.

zettynorhana@upm.edu.my
zetybyusof@gmail.com

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