MICRO BIOTEC 15

Congress *of* Microbiology *and* Biotechnology

December **2015**

University of Évora

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GRAPHIC DESIGN
Nuno Carriço & Vanda Amaral

PRINT
GRECA – Artes Gráficas, Lda

ISBN
978-989-99475-2-8

Ergosterol as a rapid measurement of Ganoderma rot of oil palm

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Palm oil (PO) is a very important commodity for many countries and especially Indonesia and Malaysia who are the predominant producers. PO is used in ca. 30% of supermarket foods,cosmetics, cooking and as biodiesel. The growth of oil palms in plantations is controversial as the production methods contribute to climate change and cause environmental damage [1]. The plant is subjected to a devastating disease in these two countries caused by the white rot fungus *Ganoderma*. There are no satisfactory methods to diagnose the disease in the plant as they are too slow and/or inaccurate. The lipid compound ergosterol is unique to fungi and is used to measure growth especially in solid substrates. We report here on the use of ergosterol to measure the growth of *Ganoderma* in oil palms using HPLC and TLC methods [2]. The method is rapid and correlates well with other methods and is capable of being used on-site, hence improving the speed of analysis and allowing remedial action. Climate change will affect the health of OP [1] and rapid detection methods will be increasingly required to control the disease.

[1] Paterson, RRM, Kumar, L, Taylor, S, Lima N. Future climate effects on suitability for growth of oil palms in Malaysia and Indonesia. Scientific Reports, 5, 2015, 14457.
[2] Muniroh, MS, Sariah M, Zainal Abidin, MA, Lima, N, Paterson, RRM. Rapid detection of *Ganoderma*-infected oil palms by microwave ergosterol extraction with HPLC and TLC. Journal of Microbiological Methods, 100, 2014, 143–147.