

DEVELOPMENT OF DETECTION METHOD OF AN OOMYCETES, *PHYTOPHTHORA PALMIVORA* CAUSING BUD ROT DISEASE OF OIL PALM BY LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP)

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The oil palm (*Elaeis guineensis* Jacq.) is an important oil crop in tropical regions especially Malaysia. The oil palm industry plays an important role in the growth of the country's agricultural sector and has made significant contributions to its gross domestic product (GDP), foreign currency exchange and labour. In Latin America, the industry has been hindered by a devastating disease known as the bud rot disease or *Pudricion del cogollo* (PC) which has been reported to cause significant losses. To date, the disease is still considered as exotic in Malaysia and other Southeast Asian (SEA) countries. In 2010, a species of oomycetes from the genus of 'plant destroyer' *Phytophthora*, *P. palmivora*, has been identified as the causal agent of the disease. To protect the oil palm industry in Malaysia and the SEA region, the disease needs to be contained with strict biosecurity. A rapid and robust detection of the pathogen is important to contain the invasive pathogen outside the borders and to monitor the outbreak and disease incidence locally. Loop-mediated isothermal amplification (LAMP) is a modern molecular detection technique that offers a rapid and specific diagnostic tool. LAMP is an isothermal nucleic acid amplification that is carried out at a constant temperature using a set of six primers which increases the specificity and offer the possibility of *in situ* diagnosis. LAMP also produces higher amounts of DNA amplicons when compared to polymerase chain reaction (PCR). We have design and tested five sets of primers and have successfully come out with three sets of species-specific primers that only amplified *P. palmivora*.

Keywords: oil palm, *P. palmivora*, Loop-mediated isothermal amplification