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Laccase enzyme production by *Pycnoporus sanguineus* using oil palm empty fruit bunch as substrate

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Abstract. Laccase is one of the ligninolytic enzymes along with manganese peroxidase and lignin peroxidase. The biotechnological use of laccase has been widely applied in various field ranging from discoloration of textile dye effluent, pulp and paper processing, removal of phenolics from wine and many more. The white rot basidiomycete fungus *Pycnoporus sanguineus* is reported to be one of the most prominent laccase producers. Over the last few decades, many efforts have been done to improve the laccase enzyme production. The addition of inducer is expected to increase the laccase production as it will induce high expression of laccase gene by the fungus. Different types of inducer which are veratryl alcohol, copper sulfate, 2,5-xylidine and ferulic acid were investigated in this study using oil palm empty fruit bunch (OPEFB) as substrate in a submerged fermentation condition. Each inducer was added at certain concentration into the enzyme production medium using one factor at a time approach. An increase in laccase enzyme activity was observed with the addition of inducer into the basal medium. Hence, laccase production by *Pycnoporus sanguineus* can be improved with the addition of inducer.

Keywords: Inducer; Ligninolytic enzymes; Oil palm empty fruit bunch; *Pycnoporus sanguineus*