DETERMINATION OF XYLANASE ACTIVITY FROM FERMENTATION OF OIL PALM FROND

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Final Year Project Report Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science (Hons.) Biology in the Faculty of Applied Sciences Universiti Teknologi MARA

JULY 2016

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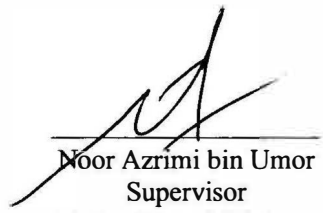

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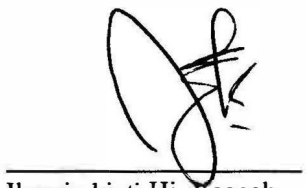

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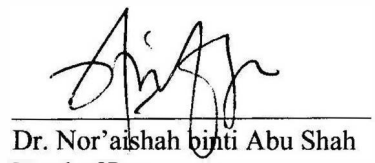

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ABSTRACT

DETERMINATION OF XYLANASE ACTIVITY FROM FERMENTATION OF OIL PALM FROND

Oil palm frond was one of the disposal residues in oil palm industry. Oil palm frond can be potentially used as a substrate for lignocellulolytic enzyme production. In this experiment, grinded oil palm frond was used as a substrate in solid state fermentation using *Aspergillus fumigatus* to produce CMCase and Xylanase enzyme. The independent variables in this experiment were the fermentation time and the water treatment during fermentation. Experiment was run for 3,5,7,9 and day 11. Further investigation was continued to analyze the effect of water fed to the production of reducing sugar, Xylanase and CMCase activity. Maximum production of reducing sugar was 33.725μmole at day 5 in the presence of water. Both Xylanase and CMCase produced highest activity on the 11th day of experiment without water fed which were 1.13 and 0.497 U/ml respectively. Fermentation with water fed increased the moisture content and yielded more reducing sugar. Xylanase and CMCase were optimum in absence of water fed due to acidic condition of fermentation. Statistical analysis showed that water treatment do not have significant correlation towards reducing sugar production. Meanwhile, t test proved that water fed strategy do not affect the Xylanase but have an interaction towards CMCase.