

Effect of oil palm empty fruit bunch (OPEFB) particle size on cellulase production by Botryosphaeria sp. in solid state fermentation.

ABSTRACT

Locally isolated *Botryosphaeria* sp. showed the ability to produce cellulases (FPase, CMCase and β -glucosidase) from oil palm empty fruit bunch (OPEFB) as substrate. Different particle sizes (0.25-0.3 mm, 0.42-0.6 mm, 0.84-1.0 mm and 5.0-10 mm) of OPEFB were investigated under solid state fermentation on the cellulase production. The highest production of FPase and β -glucosidase were obtained from OPEFB particle size of 0.42 - 0.60 mm with 3.261 ± 0.011 U/g and 0.115 ± 0.008 U/g, respectively. It was found that among the four different OPEFB particle sizes studied, particle size of 0.84 - 1.0 mm gave the highest activity of CMCase (8.134 ± 0.071 U/g). Highest concentration of reducing sugars produced in this experiment was 4.303 ± 0.095 mg/ml.

Keyword: Substrate particle size; Cellulase; Solid state fermentation; *Botryosphaeria* sp..