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## Production, Purification and Characterization of B-D-Fructofuranosidase from *Fusarium oxysporum* Isolated from Grape Juice and Soil sample from Sugar Cane Dumpsite

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### ABSTRACT

$\beta$ -D-fructofuranosidase has been reported to be present in plants, some animal tissues and microorganism. Screening, purification and characterization of  $\beta$ -D-fructofuranosidase from *Fusarium oxysporum* under submerged fermentation was investigated.  $\beta$ -D-fructofuranosidase production by *Fusarium oxysporum* ranged from 36.2-65.8% and 7.2-20.1 % under different pH and incubation time. pH 7 and 7 days incubation time supported the highest production.  $\beta$ -D-fructofuranosidase production ranged from 16.5-44.0 % and 27.8-68.8 % when different organic and inorganic carbon sources were used. Potato peels and fructose supported the highest  $\beta$ -D-fructofuranosidase production. Peptone supported the highest  $\beta$ -D-fructofuranosidase production (37.9 %) by *Fusarium oxysporum*.  $\beta$ -D-fructofuranosidase produced from *Fusarium oxysporum* was purified by Acetone precipitation method and gel filtration respectively. The crude and purified  $\beta$ -D-fructofuranosidase had the highest activity (27.7 % and 46.1 %) at 35 oC and 30 oC. Enzyme activities of the crude and purified  $\beta$ -D-fructofuranosidase are 65.79 % and 19.57 %. The Kinetic parameters (Km and Vmax) are 0.1285 mg/mL and 17.36 U/mg.

**Keywords:** *Fusarium oxysporum*,  $\beta$ -D-fructofuranosidase, Incubation time, Fructose, Gel filtration

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