

The Activity of Beta – Glucosidase Towards the Production of Farnesol in Josapine Waste

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ABSTRACT

Terpenes have its proven protective functions but recently researchers have found that farnesol has anti-cancer agent. The fermentation of Josapine waste using *Saccharomyces cerevisiae* that comprises beta (β)-glucosidase might enhance total content of farnesol which is useful in the biopharmaceutical industry. The aims of this study were to compare and quantify the β -glucosidase activity in the fermented peel and pulp of Josapine as well as to relate the amount of β -glucosidase to farnesol extracted from the fermented peel and pulp. *S. cerevisiae* was able to ferment the pulp and peel of Josapine to yield farnesol. Fermentation was carried out for 0 hour, 24 hours and 48 hours separately for both natural and microbial fermentation. The cell density and pH of the fermented broths were recorded with intervals of 0 hour, 24hours and 48 hours respectively. Farnesol was extracted from the fermentation broths by using hexane as the organic solvent. Farnesol separation was carried out by using adsorption chromatography. The farnesol obtained from the separation was quantified using UV-visible spectrophotometer at 290 nm. However, the amount of farnesol was relatively low may be due to the inefficiency of *S. cerevisiae* in using the existing substrate(s) in the pulp and peel of Josapine. It is expected farnesol was not eluted out properly during the separation.