

# Beta-Glucosidase Activity and Linalool Production in the Fermentation of Pineapple Waste

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## ABSTRACT

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Linalool is one of the most interesting acyclic terpene alcohols, both from the point of view of academic interest and of practical value. Studies have shown that some essential oils which contain linalool have antimicrobial, antibacterial and antiviral effects. In this study, the production of linalool by fermentation of the pulp and peel of pineapple using *Saccharomyces cerevisiae* was tested. Fermentation was carried out for 24 hours and 48 hours separately for both microbial and natural fermentation. The cell density and pH of the fermented broths were recorded with intervals of 0, 24 and 48 hour(s) respectively. Linalool was extracted from the fermentation broths by using dichloromethane as the organic solvent. Linalool separation was carried out by using adsorption chromatography. The linalool obtained from the separation was quantified using UV-visible spectrophotometer at 300 nm. Based on the results, the activity of  $\beta$ -glucosidase showed an increase in activity, however, the yield of linalool produced through both microbial and natural fermentations of pulp and peel did not show any significant differences from 0 hour to 48 hours of fermentation. Although linalool was successfully extracted, the amount did not reflect  $\beta$ -glucosidase activity measured in both fermentations.