

**EFFECT OF TEMPERATURE and pH ON LACTIC ACID
FERMENTATION FROM LIQUID PINEAPPLE WASTE USING
IMMOBILIZED *LACTOBACILLUS DELBRUECKII* ATCC 9649**

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Batch fermentation of glucose to lactic acid was conducted using immobilized *Lactobacillus delbrueckii* subsp. *Delbrueckii* ATCC 9646 under anaerobic condition. Liquid pineapple waste medium was used as the fermentation medium and the effects of temperature and pH on cell growth, glucose consumption and lactic acid production were investigated. The fermentation process was carried out for 72 hours and the results indicate that pH and temperature have a significant effect on the lactic acid production. The maximum concentrations of lactic acid produced at 56 hours of fermentation are 28.73 g/L at 37°C and 29.02 g/L for pH 6.5 with initial glucose concentration of 31.3 g/L. Thus, it is observed that the conversion yields for lactic acid production are 91.7% and 92.7% at 37°C and pH 6.5 respectively. Temperature and pH seem to play the largest role in the organism ability to grow and thus affecting its production of lactic acid.

Keywords: Lactic acid, fermentation, liquid pineapple waste, cell immobilization, *Lactobacillus delbrueckii*