

BIOPROCESSING OF LACTIC ACID BY FERMENTATION TECHNIQUE

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Chapter 3

Optimization of Media for *Lactobacillus rhamnosus* Fermentation for Lactic Acid Production

Maizirwan Mel, Mohamed Ismail Abd Karim, Mohammad Ramlan Mohammad Salleh, Noraini Alamin Mohammad Amin

Abstract

This chapter discussed about the media optimization of *Lactobacillus rhamnosus* for the fermentation process to produce lactic acid which were conducted in the shake flask. In this experiment, glucose and peptone content of media were optimized using the Central Composite Design (CCD) method via STATISTICA software. The optimization studies were carried out in shake flask experiments. The results indicated the optimum concentration of glucose and peptone for optimum bacterial growth rate and lactic acid production in shake flask were 9.80 and 9.98 g L⁻¹, respectively. The optimum productivity of lactic acid was 0.630 g g⁻¹ h which correspond to optimize growth rate of the bacteria.

Keywords: *Lactobacillus rhamnosus*, lactic acid, media optimization, fermentation, CCD methods