Thesis Title	Environmental Factors Influencing Lactic Acid Production of *Lactobacillus* sp.
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ABSTRACT

Environmental factors influencing production of lactic acid were investigated in this study. The influences of MRS, modified MRS, GS, MEA, GYP and GYP-$CaCO_3$ media on growth of *Lactobacillus casei* subsp. *rhamnosus* and *Lactobacillus delbrueckii* were determined in both shake flask and static cultures. The result showed that static cultures gave higher maximum specific growth rate (μ_{max}) and lactic acid yield ($Y_{p/s}$) than shake flasks. The suitable media were MRS or modified MRS because there was no significant difference between these media. The modified MRS was selected for further study because of low cost and *L. casei* subsp. *rhamnosus* was selected because it gave higher μ_{max} and $Y_{p/s}$ than *L. delbrueckii*.

The cultivation of *L. casei* subsp. *rhamnosus* at various initial glucose concentrations of 1, 2, 5, 7 and 10% was determined and it was found that the glucose concentration of 5% gave higher μ_{max} and $Y_{p/s}$ (1.41 h^{-1} and 0.81 $g.g^{-1}$) than other glucose concentrations with significant difference.

The influences of dissolve oxygen, temperature and pH on growth of *L. casei* subsp. *rhamnosus* were dertermined in batch cultures. The result showed that the suitable dissolve oxygen was o% which gave higher μ_{max} and $Y_{p/s}$ (0.55 h^{-1} and 0.69 $g.g^{-1}$) than other concentration. The optimum temperature was at 37 °C because of higher μ_{max} and $Y_{p/s}$ (0.55 h^{-1} and 0.69 $g.g^{-1}$) than at 45 °C and the controlled pH gave higher μ_{max} and $Y_{p/s}$ (0.62 h^{-1} and 1.24 $g.g^{-1}$) than the uncontrolled pH.