

## Kinetic Model Based Fed-batch Fermentation of *Lactobacillus rhamnosus* for High Concentration of Lactic Acid Production from Date Juice

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Arabic date is suitable biomass because it is abundant and not expensive raw material and it contains a lot of sugar that can be easily used by bacteria without complicate pretreatments. previous works were limited with respect to process aspect, showing only batch fermentation results. In order to scale up to industrial level, various bioprocesses such as fed-batch fermentation or continuous fermentation should be studied. Especially, fed-batch fermentation is powerful tool to achieve high concentration of product because it can avoid substrate inhibition which is one of the main problems of batch fermentation. In this study, a kinetic model of *Lactobacillus rhamnosus* growing with Arabic date juice was built, and from the model, fed-batch fermentations were designed and conducted to get high concentration of lactic acid. [This work was supported by the Advanced Biomass R&D Center(ABC) of Global Frontier Project funded by the Ministry of Education, Science and Technology. Further supports by the World Class University Program(R32-2008-000-10142-0) of the MEST were appreciated.]