# “Comparative study of probiotic production through two methods of closed-cultivation and semi-continuous using whey”

parisa javidan*,

**Abstract History and Purpose: Probiotics are live organisms which have beneficial effects on the host’s health by mitigating intestinal microbial flora. Generally, they are human resources and Non-pathogenic. The mechanism of probiotics’ effect is not completely known but some mechanisms are suggested to explain their preventive and therapeutic effects on human diseases including production of bacterial inhibitor compounds, adjustment of intestinal pH, blocks of bacterial binding sites, competing to absorb food and strengthening immune system. The present research aims to investigate, comparatively, the two methods of producing probiotics whey: Batch and Feedbatch. Methods and Materials: The Lyophilized lactobacillus ampoule was provided microbial collections section of Iranian Scientific and Industrial Research Organization. The ampoule was cultivated in MRS solid environment in perfectly sterile condition and then Inoculated as pre-cultivation in MRS liquid medium. The effects of four factors of strain type, the auxiliary carbon source type, auxiliary nitrogen source type, and pH were investigated in four levels at batch and feedbatch condition. The main medium for all of these tests was diluted whey. The results were analyzed in the form of obtained dry precipitate weight. Findings: The results indicate that in batch condition, the best production of probiotics occurred in the presence of glucose, the source of nitrogen ammonium nitrate and 5 to 6 pH and in feedbatch condition, the best production of probiotics occurred in the presence of glucose, the source of nitrogen ammonium nitrate and 4 to 5 pH. In feedbach condition, the auxiliary nitrogen source type and auxiliary carbon source type and the strain type have significant and meaningful effect on the production of probiotics. In the batch condition, the auxiliary carbon source type and strain type had significant effect on the amount of probiotics production. Conclusion:Totally, a better production was**

**observed in feedbatch condition. Keywords: Probiotics, Lactobacillus, Whey**

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