University of Zabol
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The Thesis Submitted for the Degree of M.Sc
The effect of temperature and fermentation time on the quantitative and qualitative properties of instant KashkeZard

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June 2023

Abstract:

Yellow curd is a traditional fermented food that is highly desirable in Sistan and Baluchistan province. In order to preserve probiotic bacteria, instant yellow curd was prepared for the first time in Zabul University. The purpose of this research is to optimize the fermentation conditions of instant yellow curd based on the temperature and duration of fermentation in order to obtain a product with the highest quantitative and qualitative properties. The variables included fermentation temperature (at three levels of 25, 30 and 35 degrees Celsius) and duration of fermentation (at five levels: 0, 3, 6, 9 and 12 days). Microbial tests on the samples include: counting the total population of microbes, lactic acid bacteria (bacillus and cocci), mold and yeast, coliforms, as well as chemical tests including the determination of protein amounts, protein digestibility, fat, ash, zinc, calcium, phetic acid, poly compounds Phenolic, the ability to inhibit free radicals (DPPH) and the overall acceptance rate were performed and the obtained results were analyzed with the help of a factorial test in the form of a completely randomized design. Statistical analysis was performed using SAS software version 9.1. The results showed that the amount of protein, antioxidant, total phenol, calcium, total carbohydrate, absorption capacity of calcium and zinc increased in instant yellow curd samples with increasing fermentation time. Also, the duration of fermentation had a decreasing effect on the amount of zinc and pH. Regarding the effect of fermentation time on the amount of phetic acid, a decreasing trend was observed for the samples until the sixth day of fermentation, and the amount of phetic acid increased on the 9th and 12th day of fermentation. By increasing the fermentation time, the microbial contamination in the samples decreased, and increasing the fermentation temperature had a direct effect on the growth of Lactobacillus strains, and with increasing the fermentation temperature, the growth of Lactobacillus strains decreased. The instant yellow curd sample, which underwent a 12-day fermentation process at a temperature of 35 degrees Celsius, got the highest score for overall acceptance among 15 instant yellow curd samples.

Keywords:phytic acid, lactic acid bacteria, sensory properties