

## The Effects of Fermentation Times and Fructose Concentration on the Fermentation Characteristics and Quality of Soy Kefir

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The objectives of this study were to characterize the effects of fermentation times(6, 12, 18, or 24hrs) and fructose concentrations(0, 4, or 6%) on the quality of soy kefir. The formation of kefir grain was accelerated in proportion to the fructose concentration in fermentation media at rates of 0.75~0.85%/hr and 0.95%/hr for soy- and milk kefir, respectively. The decrease in pH values in the reverse order of acidity changes was noted as is commonly seen in normal fermentation processes while the acidities values were staying higher in milk kefir, rather than in soy one. After the progress of fermentation for 24 hrs, the acidity values, as affected by fructose concentrations, were recorded as 0.40(fructose 0%), 0.44(fructose 4%), and 0.50%(fructose 6%), respectively. Total microbial counts, as well as those of lactic acid bacteria and yeasts were increased in proportion to fermentation time and fructose concentration. The most favorable soy kefir was obtained after fermenting for 18 hrs when the number of total microbial counts reached as  $10^7$  CFU/mL. Based on the sensory evaluation results, the fermentation time of 18 hrs and the fructose concentration of 6% were the most appropriate to prepare soy kefir of best quality in aspects of sour taste, sweet taste, astringent taste, mouthfeel, and overall quality.

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