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Effect of Nutritional Difference between Soy Milk and Mung Milk on Fermentation

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[Abstract]

Dairy products are important diet source for human because of their balanced essential nutrients along with various vitamins and minerals. However, lactose in milk can result in diarrhea to some consumers with lactose intolerance. Soy milk has no lactose and is suitable as a substitute for dairy milk in accordance with recent trend of replacing animal food with vegetable food. However, polysaccharides in soy milks are difficult for humans to digest, leading to flatulence. These polysaccharides can be decomposed into monosaccharides by lactic acid bacteria, and fermentation can improve food quality. Because mungbean has higher carbohydrate content than soybean, mung milk can be easily fermented than soy milk, resulting in vege yogurt with higher contents of lactic acid. In this study, fermentation characteristics of vege yogurt were analyzed with different ratio of soy milk and mung milk (0%, 25%, 50%, 75%, 100% and 0%+sucrose) and different fermentation time (0, 8, and 16 hours). In general, pH decreased as fermentation time increased. Overall, pH significantly decreased when the mung milk content in yogurt increased. All samples showed higher titratable acidity after fermentation and soy yogurt (mungbean 0%, 16 hours) with sucrose showed the highest value (6.825%). As fermentation time increase, viscosity increased. In 8 and 16 hours, mung milk yogurt (mungbean 100%) showed the lowest viscosity while soy milk yogurt (soybean 100%) with no sucrose showed the highest viscosity after 16 hours of fermentation. The contents of crude protein, crude fat and ash were measured for nutritional analysis. Soy milk (mungbean 0%, 0 hours) had the values of crude protein 2.9g, crude fat 1.8g, and ash 0.3g, and mung milk (mungbean 100%, 0 hours), showed the values of crude protein 1.7g, crude fat 0g, and ash 0.3g. To analyze the effect of the differences in the contents of nutrition between soy milk and mung milk on fermentation, the changes in sugar contents, and antioxidant capacity will be conducted depending on fermentation time. Our results will provide the information in researching plant beverages.

[Acknowledgement]

본 연구는 정부 (과학기술정보통신부)의 재원으로 한국연구재단의 지원에 의해 이루어진 결과로 이에 감사드립니다 (no. 2021R1C1C1004233).

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