Effects of Partial or Total Replacement of Cow's Milk with Soy Milk and the Type of Commercial Starter Culture Composition on Biochemical and Microbiological Characteristics of Probiotic Soy-Doogh

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Background & Objectives: In this research, the effects of cow's milk to soy milk proportion (100:0, 75:25, 50:50, 25:75 or 0:100) as well as the type of commercial culture composition (ABY-1, MY-720 or YO-Mix-210) on biochemical and microbiological characteristics of probiotic soy-Doogh was investigated.

Methods: pH, titrable acidity and redox potential during fermentation, lactic and acetic acids as well as viability of probiotics in final products at the end of fermentation were assessed.

Results: The greatest mean of pH drop rate and mean acidity increase rate were observed for treatment with cow's milk to soy milk proportion of 50:50 and culture composition of ABY-1/Chr-Hansen and the lowest amounts of mentioned parameters were related to the treatment with cow's milk to soy milk proportion of 0:100/Danisco. Treatments with cow's milk to soy milk proportion 100:0/Chr-Hansen and 0:100/Danisco showed the highest and lowest percents of lactic and acetic acids, respectively. The highest and lowest viable count of *B. bifidum* and *L. acidophilus* during 21 days of refrigerated storage were observed for treatments with cow's milk to soy milk proportion of 25:75/Chr-Hansen and 25:75/DSM, respectively. The lowest viable count for mentioned bacteria was related to the treatment 0:100/Danisco for *B. bifidum* and 0:100/Chr-Hansen for *L. acidophilus*.

Conclusion: Considering results obtained from this study, the cow's milk: soy-milk of 50:50 regardless of type of culture composition was selected as the best treatments from probiotics' viability point of view.

Keywords: Cow's Milk; Soy Milk; Starter Culture; Probiotic; Soy Doogh