

**EFFECTS OF INULIN ON THE
SENSORY, MICROBIOLOGICAL AND
PHYSICOCHEMICAL PROPERTIES
OF SOY YOGURT**

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ABSTRACT

The effect of inulin substitution on the sensory, physicochemical and microbiological properties of soy yogurt was investigated in this study. Soy yogurt was prepared by fermenting soy milk mixture for 6 hours at 43°C; substituting sucrose with different percentage of inulin (1%, 3% and 5%). The sensory profile of soy yogurts was evaluated by Quantitative Descriptive Analysis (QDA) and Hedonic Test; while physicochemical properties such as pH, titratable acidity, moisture, total solids, fat, protein and syneresis were analyzed after one day of storage at 4°C. Viable cell counts for *S. thermophilus* and *L. bulgaricus* in soy yogurt of one day storage at 4°C were enumerated under aerobic and anaerobic conditions respectively. The results from QDA indicated that there were significant ($p < 0.05$) increment in thickness and reduction in sweetness of soy yogurt with the increasing percentage of inulin substitution; while the sourness, creaminess, firmness and smoothness attributes of soy yogurt were not significantly affected ($p > 0.05$). Soy yogurt with 3% inulin (F2) was the best formulation with mean ratings of 73.47 ± 0.57 on sweetness, 60.10 ± 11.78 on sourness, 78.60 ± 9.90 on creaminess, 69.13 ± 7.67 on firmness, 91.10 ± 5.74 on thickness and 121.43 ± 8.98 on smoothness. Hedonic test revealed that F2 was most preferred by consumers with an overall acceptability of 5.64 ± 1.68 on a 9-point hedonic scale and ranking score of 1.57 ± 0.62 (score 1 denoted the most preferred). Significant increase in titratable acidity and less syneresis was observed with increased inulin substitution; while no significant differences on pH values, moisture, total solids, fat and protein content was detected. Viable cell counts for *S. thermophilus* and *L. bulgaricus* were above 10^6 cfu/ml in all formulations, ranged between 7.45 ± 0.04 to 7.77 ± 0.07 log cfu/ml. No significant effect in viable cell counts was observed with the increase in inulin substitution. These results suggested that inulin affected some characteristics of soy yogurt in terms of sensory and physicochemical properties but had no significant effect in stimulating the growth of *S. thermophilus* and *L. bulgaricus*.

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