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Physicochemical and Sensory Evaluation of Lemon Grass Leaves Extract Enriched Soybean Milk Yoghurt

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Abstract

There are challenges in the utilization of soybean-based foods due to undesirable flavors associated to the Lipoxygenase and trypsin inhibitors causing oxidation of polyunsaturated fatty acids (Linoleic Acid and alpha linolenic) in soybean. This study aimed to prepare soybean based yoghurt with different amounts of lemon grass essential oil in the ratios of 0, 25, 50, 75, and 100 µl per liter of soy yoghurt. The different treatments of Soybeans based yoghurt were analyzed for protein by Kjeldhal method, fats by Soxhlet method, total ash by muffle furnace method, crude fiber, pH, titratable acidity, syneresis and viscosity by AOAC method, total phenolic compounds

by spectrophotometric method and sensory analysis by effective tests with 10 panelists using 5 hedonic scale tools. The results ranges for Moisture content, % (89.3-89.6%); Protein, % (5.5-6.8%); Fat, % (2.7-3.6%); Total Ash % (0.43-0.53 %); Crude Fiber, % (0.06-0.33 %) and Carbohydrate, % (0.59-0.93 %). Physicochemical properties ranges for PH (4.30-5.59); Viscosity, Pa.s (2.85- 3.17); Titrable acidity, g/l (0.01-0.07) and Syneresis (6.44-7.56) and Total Phenolic compound mg/g (8.59-18.40). The level of pH showed a significant variations between the treatments while titratable acidity, syneresis and viscosity did not show any significant variations. Total phenolic compounds varied between 8.59 to 18.40 mg/g and Sensory evaluation showed that the treatment (100 µl) with highest level of lemon grass essential oil per liter of soy yoghurt was the most liked. In conclusion, incorporation of lemon grass essential improved the level of phenolic compounds and sensory properties of yoghurt. More studies that are extensive need to be carried out on the microbial status and other parameters of the lemon grass extract enriched soy yogurt.

Key words: Physicochemical, soy yoghurt, sensory evaluation, lemon grass extract