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Nutritional and Antioxidant Impacts of Yoghurt Fortified with Sweet Potato Flour

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Yoghurt is considered a nutrient-dense food, but any added ingredients and production methods will dictate the final nutritional content. Sweet potato Flour (2%) is added to improve the nutritional value of yoghurt. In the present study, the nutritional and phenolic composition as well as the antioxidant activity of sweet potato yoghurt were determined and compared to the control yoghurt. Results showed that sweet potato yoghurt had the highest values of some amino acids such as serine, glycine, histidine, tyrosine, and lysine (0.76, 0.39, 0.38, 8.19, 1.01 g/100gm, respectively) when compared to the control yoghurt. Our promising yogurt with 2% SPFL presented the highest amount of Ca, Fe, Zn, Mn and P (1837, 20.21, 23.5, 1.78 and 10973.077 mg/Kg, respectively). Antioxidant vitamins (A, C and E) were observed in sweet potato yoghurt which recorded as 5.55IU/kg, 383.43 and 13.42mg/kg, respectively when compared with the control yoghurt (4.69IU/kg, 112.8 and 1.7mg/kg, respectively). The antioxidant activity was determined using 2,2-diphenyl-1-picrylhydrazyl (DDPH). As, Scavenging of DPPH free radicals is a widely used method to evaluate antioxidant activity of specific compounds or extracts in a relatively short time compared with other methods. The scavenging effects of the ethanolic extracts of promising yogurt fortified with 2% SPFL on DPPH radical was 19.044 % inhibition. On the other hand, it was 11.796% inhibition for the control yoghurt. Total flavonoid (TF) contents, was expressed as rutin (RE/g DW) equivalents per gram of sample dry weight. As, it was observed a 1.726 mgRE/100g in our tested yoghurt when compared with control yoghurt 0.837 mgRE/100g. The IC50 values was 120 mg/ml of yoghurt fortified with 2 % SPFL, for 50% inhibition of DPPH free radicals. Conversely, control yoghurt showed the highest IC50 value which was 200mg/ml. As a conclusion, incorporation of 2% SPFL in yoghurt greatly improved the nutritional values as well as the antioxidant potential scores of the resulted yoghurt.

Keywords: Sweet potato yoghurt, Amino acids, Minerals, Vitamins, Antioxidant activity

Biography:

Aisha ELATTAR graduated from the Faculty of Agriculture, Dairy Department in 1993 with excellent grade, and obtained a master's degree in the same department in 1997 with the title (Biotechnological studies on milk and milk products. Biochemical studies on enterococci). She also obtained Ph.D from INA-PG, France in 2001 with the thesis title (Sélection et caractérisation de mutants de *Lactococcus lactis*. présentant une forte activité gazogène). Dr. El ATTAR has been working in isolation and identification of LAB for ≈20 years. Also, she studied the probiotic characteristics of isolates from Egyptian environment as well as from the camel milk.