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UTILIZATION OF XANTHAN GUM IN THE MANUFACTURE OF PEANUT YOGHURT LIKE – PRODUCT

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ABSTRACT

Peanut milk was prepared and separately supplemented with different concentrations of xanthan gum, pectin, gelatin, carrageenan, skim and whole milk. The different preparations were fermented with yoghurt starter at 42°C for 3-4h. The chemical, microbiological, rheological and sensory attributes of the resultant yoghurt like-products were investigated.

All These additions had no effect on pH values, or lactic acid bacterial counts of peanut yoghurt like-product when fresh or during storage. In addition, mould and yeasts as well as coliform groups were not detected in the all fermented preparations, either when fresh or during storage. The use of xanthan gum (0. 1%) with lactose (4%) and whole milk (50%) increased the curd tension of peanut yoghurt. Peanut yoghurt prepared with 4% lactose, 0.1 % xanthan gum and 50% whole milk gained the highest sensory scores compared to the corresponding products of other treatments.
Keywords: Peanut milk, yoghurt like product, xanthan gum,

INTRODUCTION

In response to environmental concerns, some industries which have previously used non-degrading polymers in their products and raw materials have looked closely at the possibilities of using materials that are greener and environmentally friendly (Rosalam and England 2006).

Xanthan gum has discovered in the late 1950s by US scientists and is the first biopolymer produced industrially (Rosalam and England 2006). Xanthan gum is an extracellular hetero-polysaccharide, which is produced by the aerobic fermentation of *Xanthomonas campestris* (Psomas, *et al.*, (2007).

Xanthan gum is widely used in a broad range of industries, such as food, toiletries, oil recovery, cosmetics, as water-based paints, etc., due to its superior rheological properties and is used as rheological control agent in aqueous systems and as stabilizer for emulsions and suspensions. The important properties of xanthan gum is the ability to form high viscosity solution at low shear forces, highly pseudoplastic and may also display a viscosity yield value. Yoshida *et al* (1993). On the other hand, preparing yoghurt-like products that are free from defects in body, consistency and syneresis continues to be a problem in the dairy and dairy-like industries. Stabilizer gums such as xanthan gum are used to improve the texture, increase the firmness and prevent syneresis in yoghurt (Kalab, *et al.*, 1975 and Abd El Salam, *et al.*, 1996). Fresh peanuts contain about 44-56% oil and 22-30% protein. In that oil, the major fatty acids are 56 % oleic (monounsaturated), 20% linoleic (polyunsaturated) and 8% palmitic (saturated). In both animal and human studies monounsaturated as well as polyunsaturated fatty acids have been shown to be beneficial in reducing heart disease. (Ziboh, *et al.*, 2000). Nutrients which have been demonstrated in either human or animal studies to be required for the immune system to