

**PHYSICOCHEMICAL, MICROBIOLOGICAL AND SENSORY  
PROPERTIES OF PROBIOTIC YOGHURT SUPPLEMENTED WITH  
INULIN FROM LOCAL YAMS**

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Prebiotics supplemented dairy products are popular among consumers around the world. Inulin is a common ingredient used in food industry as a prebiotic and fat replacer. In this study, inulin was extracted from different local yams namely, *hingurala* (*Dioscoreaalata* L.), *rajaala* (*Dioscoreaalata* L.), *raasavalli* (*Dioscorea alata* L.) and *Jaffnainiala* (*Dioscorea alata* L.) using hot water extraction method and the inulin content was quantified using alcoholic extraction method. The effects of incorporation of extracted inulin at level 0.2% (w/v) on physicochemical, microbiological and sensory properties of yoghurt were investigated with the commercial inulin prepared of same concentration (control). Proximate analysis and viscosity measurement were carried out using freshly prepared yoghurts. Sensory evaluation was done with untrained panellists using a five-point hedonic scale. Counts of yoghurt bacteria and probiotic bacteria, titratable acidity and pH were measured weekly for 28 days. Results revealed that protein, ash, moisture, fat and fibre contents were not significantly different ( $p>0.05$ ) among treatments. Viscosity of the yoghurts were significantly different ( $p<0.05$ ) among treatments. The highest viscosity was recorded in yoghurt containing inulin extracted from *hingurala*, while the yoghurt containing inulin extracted from *rasavalli* showed the lowest viscosity. Microbial count and pH of all treatments were gradually decreased with time and titratable acidity increased with the storage time. Sensory analysis revealed that the yogurt supplemented with inulin extracted from *hingurala* was with the best sensory properties including appearance, texture and overall acceptability. In conclusion, inulin extracted from *hingurala* can be used as a prebiotic in fermented dairy products such as probiotic yoghurt with enhanced physicochemical, microbiological and sensory properties.

**Keywords:** Dairy products, Prebiotic, Probiotic