

## **DEVELOPMENT OF A SET YOGHURT USING LOCALLY AVAILABLE WATERMELON VARIETIES**

**A.W.C.P. Kumari, W.V.V.R. Weerasingha and A.M.J.B. Adikari**

*Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.*

Health benefits and consumer preference of set yoghurt can be improved by incorporating different fruit pulp or juices. Juices of three watermelon varieties, Thilini, Kinaree C28 and Rocky 475 were used with 25% (v/v) concentration level to develop a set yoghurt and selected the best variety for yoghurt preparation. Four incorporation levels of juice as 15%, 20%, 25% and 30% (v/v), were used to develop the set yoghurt using the selected watermelon variety. Authenticated set yoghurt without adding watermelon was used as the control. Thirty (30) untrained panellists were used in the sensory evaluation to select the best watermelon variety and respective concentration level. Organoleptic, microbiological and physicochemical properties of all samples were analysed during the 21 days of storage period. Parametric and sensory data were analysed using Analysis of Variance procedure and Friedman test, respectively. Rocky 475 variety at 20% (v/v) concentration level resulted the best sensory properties for colour, taste, texture and aroma. Fat content in watermelon incorporated yogurts decreased gradually with the increasing levels of watermelon juice ( $p < 0.05$ ). The highest titratable acidity and the lowest pH were recorded in the control. The syneresis of yoghurt samples were increased and the Total Plate Count (TPC) was reduced ( $p < 0.05$ ) with the increasing levels of watermelon juice. The lowest TPC ( $\log_{10}$  5.72 CFUg<sup>-1</sup>) was observed in 30% (v/v) incorporation level. Yeast and mould counts of all yoghurt samples were lower than the acceptable range ( $1 \times 10^3$  CFUg<sup>-1</sup>) during the storage period. This study showed that set yoghurt could be enriched with desirable organoleptic properties, while ensuring microbiological safety by incorporating 20% (v/v) of Rocky 475 variety of watermelon juice.

**Keywords:** Organoleptic properties, Set yoghurt, Watermelon juice