**ABSTRACT**

Reducing sugar in jam has an effect on the physico-chemical as well as sensory properties of the jam. To compensate for some of the functional properties lost, other co-solutes may be used. Therefore the objective of this study was to use gum Arabic from Acacia *senegal* var. *kerensis* in formulation of a reduced sugar jam from plums and pineapple fruits. The innovatively prepared jam was subjected to sensory evaluation by a semi-trained panel. Twelve formulations were prepared in factorial arrangement in a completely randomized design. The products were rated using a seven-point hedonic scale for colour, taste, texture/spreadability, mouth feel and general acceptability. Data were analysed using SAS, 2004 (version 9.1.3) to perform analysis of variance and determine the least squares means for each variable. The main effect of the study was the level of gum Arabic at 15% and 20% w/w, level of sugar content at 30 and 35% w/w, and the type of fruit. A control product was prepared for the two sugar levels but without gum Arabic. Significance was established at $p < 0.05$ level, while the means separation was done using Tukey's honestly significance difference (HSD). The results obtained showed that Fruit type significantly affected the color at $p < 0.05$, while gum Arabic and the interactions did not significantly affect the color (at $p < 0.05$). Fruit type, gum Arabic and their interactions with sugar affected the spreadability and it was highly significant at $p < 0.001$ while gum Arabic significantly affected the taste at $p < 0.001$. The best formulation for most attributes was 15% gum for the two fruits, 30% sugar for pineapple and 35% sugar for plum jam. It was therefore possible to reduce the amount of sugar by 50% of the commercially available jam while substituting it with 15% gum Arabic which qualifies the quantity necessary for an ingredient in food formulation. This is the first time that such work of innovatively preparing a jam with a sugar reduction of up to 50% via utilization of gum Arabic from Acacia *senegal* var. *kerensis* is being reported.

## Keywords

Gum Arabic, Sucrose/Sugar, Reduced Sugar Jam, Sensory Evaluation