COMPARATIVE NUTRIENT ANALYSIS OF PALMYRAH FRUIT PULP WITH AND WITHOUT ARTIFICIAL PRESERVATIVE

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ABSTRACT

The study presents the results of a small scale laboratory research carried out to examine the effect of the chemical preservative, sodium metabisulphite (SMS) on the nutritional characteristics of the pulp with time. Palmyrah fruits of same maturity and size from the same palm were subjected to manual extraction of pulp. pH of the pulp was measured and it was adjusted to 3.8 using food grade citric acid. The pH adjusted pulp was then heated to 90° C for 30 minutes using open pan heating and was allowed to cool down to 60° C. Food grade SMS was added to one portion of the pulp in the ratio of 0.4 gram per litre and the other portion of the pulp was not mixed with SMS. Both pulp portions were hot filled into sterilized glass bottles and stored at 4° C in a refrigerator. Continuous nutrient analysis was carried out and the results were subjected to two way ANOVA using Minitab 16 software. Results of the study exhibits that within two months there is a decline in titrable acidity, Na level, moisture level and there is a rise in pH in the pulp with SMS. Furthermore, the abundance of the sugars, protein, fat and K level remained stable throughout the study which lasted for two months. In the pulp without SMS, there is an increase of reducing sugars and titrable acidity and a decline in pH, and total soluble solids levels with time and the differences between the values obtained periodically were significant. Moreover, the microbial colony count shows that the chemical preservation treatment is effective since the colony count is zero in the pulp with SMS at the end of 2^{nd} month, whereas pulp without SMS shows prominent growth of microorganisms and the total plate count here is 55 CFU/ ml at the end of 2^{nd} month. Based on the results of this study there is no adverse effect of SMS on the nutritional composition of the pulp. Addition of SMS shows a strong preservation activity when combined with refrigeration whereas refrigeration alone can be employed to preserve the pulp for up to one month.

Key words: preservation, physicochemical properties