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Comparison of the Qualitative and Sensory Characteristics of Fresh and Dried Fruit of a Promising Pineapple Selection Compared with cvs. 'Queen' and 'Cayenne'

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Abstract

Introduction: As pineapple consumption and export demand rises, efforts are being made to develop cultivars with improved organoleptic qualities. The short shelf life and high moisture content, however, put a limit on this. Drying has been regarded as one of the appropriate preservation techniques to increase shelf life. The purpose of the study is to compare promising pineapple selection versus older cultivars in terms of quality and sensory characteristics.

Material and methods: Fresh harvested cultivars (cvs. 'Queen' and 'Cayenne') and a promising selection being evaluated at the ARC's Hluhluwe research station were used to make fresh-cut, juice, and dried product. Using an electronic juicer, freshly squeezed juice was obtained and kept overnight at 1°C. On the day of the sensory evaluation, total soluble solids (TSS), titratable acidity (TA), and pH were assessed. For drying, fruit were peeled and cored manually and cut into ±2 cm slices and dried at 60°C for 16 hours. Fresh-cut, juice, and dried fruit were used for sensory evaluation comprising 50 untrained panellists using a 9 hedonic point scale. Statistical analysis was carried out using one-way ANOVA with separation of means using Fisher' least significant difference Tests.

Results and Discussion: The results showed that while the promising selection had significantly ($P<0.05$) higher pH, cvs. 'Cayenne' and 'Queen' had higher TSS and TA levels. For fresh-cut product, the promising selection was found to be more acceptable by panellists for its colour intensity, aroma, taste, sweetness, level of acidity, and the after-taste perception while the 'Cayenne' cultivar was least accepted. Both 'Queen' and the promising selection juice were equally acceptable to the panellists when compared with 'Cayenne' which scored the least in terms of sensory attributes. When consumed as dried product, the overall acceptance and sensory attributes were significantly higher for the promising selection followed by the 'Queen' and 'Cayenne' cultivars.

Conclusion/Recommendation: The research showed that the promising selection outperformed commercial cultivars whether it is consumed as fresh juice, fresh-cut fruit, or dried fruit.