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## Nutritional Characterisation of Passion Fruits, Pineapple and Mangoes in Tanzania

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### Abstract

Fruits are considered important as cash crops that have good development prospects and substantial impact on the incomes for majority in Tanzania. Fruits contain several health-promoting factors including fiber and high concentrations of phenolic acids, flavonoids, vitamins, and minerals. Phenolic acids and flavonoids, although not essential for survival, may over the long term provide protection against a number of chronic diseases. Minerals play a vital role in the maintenance of human health.

The present study intended to evaluate nutritional parameters, which play a role in quality evaluation of organically grown mango (*Mangifera indica* L.) cv. “Dodo”, yellow passion fruit (*Passiflora edulis* f. *flavicarpa*) and pineapple (*Ananas comosus* L.) cv. ‘Smooth Cayenne’ to meet local and international market standards. Special focus is given on compounds that contribute to human nutrition, such as total phenolic and mineral contents.

Mango juice was characterised by the highest concentration of phenolic contents in 100 ml juice (2.80 mg) followed by pineapple (2.52 mg) and passion fruits (2.11 mg). Passion fruits were characterised by the highest phosphorus content per 100 g dry matter (23.71 mg), mangoes (11.84 mg) and pineapples (7.1 mg). Potassium content per 100g dry matter was also significantly highest in passion fruits (1537.99 mg) compared to mangoes (926.72 mg) and pineapples (801.92 mg). Iron content per 100 g dry matter was significantly higher in passions fruits (2.72 mg) than in pineapples (1.06 mg) and mangoes (0.69 mg)

Pineapples fruits have higher contents of calcium in 100 g dry matter (72.2 mg) than mangoes (62.08 mg) and passion fruits (41.37 mg). The content of magnesium per 100 g dry matter was also higher in pine apple fruits (1331.05 mg) compared to passion fruits (1084.96 mg) and mangoes (774.45 mg). Manganese was also significantly higher in pineapples fruits (69.92 mg) than in mangoes (1.33 mg) and passion fruits (0.5 mg).

Mangoes, passion fruits and pineapples consumed as fresh and juices are good source of phenolic compounds. Passion fruits and mangoes are good source of phosphorus, potassium and iron, while pineapples are good source of calcium, magnesium and manganese.

**Keywords:** Mangoe, minerals, passion fruits, pineapple, total phenolics