

## **Sugars, ascorbic acid, total phenolic content and total antioxidant activity in passion fruit (*Passiflora*) cultivars**

### **ABSTRACT**

**Background:** The levels of sugars, ascorbic acid, total phenolic content (TPC) and total antioxidant activity (TAA) were determined in fruit juices from seven passion fruit (*Passiflora* spp.) cultivars: *P. edulis* cultivars Purple, Frederick, Yellow, Pink, *P. edulis* f. *flavicarpa*, *P. maliformis* and *P. quadrangularis* (we also tested this cultivar's mesocarp). **Results:** Purple and Yellow *P. edulis* had significantly higher total sugar,  $142.85 \pm 0.17$  g kg<sup>-1</sup> and  $139.69 \pm 0.12$  g kg<sup>-1</sup>, respectively, than other cultivars. Glucose and fructose content were higher in juice from vine-ripened fruits of Purple, Frederick and Yellow *P. edulis*, *P. quadrangularis* and *P. maliformis*. Sucrose content was significantly higher in juice of non-vine-ripened fruits of *P. edulis* (Pink) and *P. edulis* f. *flavicarpa*. Ascorbic acid, TPC and TAA were significantly higher in vine-ripened Purple and Yellow *P. edulis*; ranges were 0.2260.33 g kg<sup>-1</sup>, 342.806382.00 mg gallic acid equivalent L<sup>-1</sup> and 409.136586.70  $\mu$ mol Trolox L<sup>-1</sup>, respectively. Based on principal component analysis (PCA) and cluster analysis, the main variables  $\delta$  °Brix, total sugar, glucose, fructose, ascorbic acid, TPC and TAA  $\delta$  formed the characteristics for the group comprising Purple and Yellow *P. edulis*. **Conclusions:** Glucose, fructose, sucrose, ascorbic acid, TAA and TPC were quantified in passion fruit juices. Variation of the above variables in juices of *Passiflora* depends on the cultivar and ripeness.

**Keyword:** Ascorbic acid; HPLC; Passion fruit cultivars; Sugars; Total antioxidant activity; Total phenolic content