

Polyphenol composition and antioxidant activity of Kei-apple (*Dovyalis caffra*) juice.

J Agric Food Chem. 2006 Feb 22;54(4):1271-6

[Loots DT](#), [van der Westhuizen FH](#), [Jerling J](#).

School of Physiology, Nutrition and Consumer Science and School for Chemistry and Biochemistry, North-West University, Potchefstroom Campus, Private Bag X6001, Potchefstroom 2520, South Africa. vgedtl@puk.ac.za

The polyphenolic and ascorbate (ASC) components as well as the antioxidant capacity of Kei-apple (*Dovyalis caffra*) juice were analyzed and compared to three other fruit juices. The Kei-apple juice had significantly the highest total polyphenolic concentrations (1013 mg gallic acid equivalent/L), and solid phase (C(18)) fractionation identified the majority of these polyphenols to be phenolic acids. The Kei-apple juice also had significantly the highest ASC concentrations (658 mg/L), which showed exceptional heat stability with very little conversion to dehydroascorbate (DHA). Antioxidant capacities of both the unfractionated fruit juices and their solid phase-extracted fractions, as determined by oxygen radical absorbance capacity and ferric reducing antioxidant power analyses, correlated well to the polyphenol concentrations. Gas chromatography-mass spectrometry analyses showed caffeic acid as the most abundant polyphenol present (128.7 mg/L) in the Kei-apple juice; it contributed to 63% of the total antioxidant capacity (of all of the individual compounds identified). Other notable polyphenols identified in higher concentrations included p-coumaric acid, p-hydroxyphenylacetic acid, and protocatechuic acid. Our results therefore support the putative high antioxidant value linked to this fruit and better define this potential in terms of the major antioxidants that exist in the Kei-apple.