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Chem Sci Trans., 2012, 1(2), pp 303-310
DOI: 10.7598/cst2012.182

Research Article

Ascorbic Acid, Total Phenol Content and Antioxidant Activity of Fresh Juices of Four Ripe and Unripe Citrus Fruits

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Abstract
The ascorbic acid and total phenolic content to antioxidant activity of fresh juices of four ripe and unripe citrus fruits namely *Citrus limon*, *C. reticulata*, *C. sinensis* and *C. aurantium* were compared. The fruits were collected from local market and the pulp and seed free juices were collected. The pH and total acidity were determined. Ascorbic acid content and total phenolic content of fresh fruit juices were determined by volumetric and Folin-Ciocalteu reagent method respectively. Antioxidant activity of fruit juices was determined by two in vitro assays namely DPPH free radical scavenging assay and Ferric reducing assay. The pH was lesser in unripe fruit juices. Acidity, ascorbic acid and total phenolic contents were high in unripe fruit juices. Ascorbic acid and total phenolic content was high in *C. aurantium* and *C. sinensis* respectively. In DPPH assay, *C. limon*, *C. reticulata* and *C. sinensis* exhibited stronger scavenging potential when compared to *C. aurantium*. Ferric reducing potential was higher in *C. sinensis* followed by others. Overall, unripe fruit juices have displayed stronger antioxidant activity when compared to ripe fruit juices. In this study, the antioxidant activity of fruit juices was shown to be directly related to the content of ascorbic acid and total phenolics except in case of *C. aurantium*. The lower antioxidant activity of ripe fruit juices could be due to the possible reduction in the ascorbic acid and total phenolic content during ripening.

Keywords
Citrus, Ascorbic acid, Antioxidant activity, Total phenolic, Folin-Ciocalteu method

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Received 16 May 2012

Accepted 4 June 2012

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