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### Red fleshed guava as source of lycopene

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Evidences based on epidemiologic studies indicate that diets containing lycopene can lower a wide range of cancers like prostate gland cancers, colon, bladder and breast cancers and several other chronic diseases. These health benefits are probably linked with antioxidant properties of lycopene. It is also believed that commodities like guava are rich in lycopene hence are cheaper sources of these carotenoids. Aim of the present study was to quantify carotenoids in local red fleshed guava (*Psidium guajava*) and to determine the *in vitro* bioaccessibility of the carotenoids. Even though the lycopene content of Brazilian guava varieties was reported there were no reports on horana red variety of guava carotenoids. For the study, the guava variety Horana Red was obtained from Horticultural Crop Research and Development Institute Gannoruwa, Kandy, Sri Lanka. Five fruits of the Horana Red variety selected randomly were analyzed separately, Carotenoids from guava were extracted according to the Rodriguez Amaya (1999), which involved extraction of carotenoids, partition to petroleum ether, separation of carotenoids by Open Column Chromatography (OCC), identification of carotenoids using Ultra Violet Visible absorption spectra (maximum absorption and spectral fine structure), order of elution in OCC and chemical tests. Purity of the identified carotenoids was further confirmed by using the HPLC with photo diode array detection. Mobile phase consisted of acetonitrile, methanol and ethyl acetate containing 0.05% of TEA (Trimethylamine) and the gradient used was 95:5:0 to 60:20:20 in 20 minutes and this proportion was maintained during the entire run at a flow rate of 0.5ml/min. In the study of *in vitro* accessibility, fruits were initially homogenized into small pieces whose sizes resembled to the magnitudes resulted from chewing in the mouth in normal bites and was subjected to an *in vitro* digestion procedure according to Chandrika *et al.* (2006).

It is revealed that guava Horana Red variety had a high content of lycopene (45.3±8.1 µg/g on fresh weight basis (FW)) along with some other carotenoids like lutein and β-carotene in small amounts containing 2.1 ± 0.6 µg/g and 2.0±0.2 µg/g (FW) respectively. β -cryptoxanthin was found in trace amounts in the guava variety. The *in vitro* accessibility of lycopene in guava was found to be 73%. Moreover, guava can be ranked as commodity to contain more lycopene than many other lycopene containing fruits such as watermelon, papaya and tomato. Accordingly, Horana red variety of guava can be considered as a rich lycopene source.

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