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Effect of *in vitro* gastric and pancreatic digestion on antioxidant potential of fruit juices**Sampan Attri, Niharika Singh, Tirath Raj Singh, Gunjan Goel***

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Abstract

The total phenolic content (TPC) and antioxidant activity (AA) of commercially available fruit juices (kiwi, mango, guava, litchi, apple and pineapple) from Himachal Pradesh, an Indian state in the North Western Himalayas was evaluated. The stability of TPC and AA was also compared between the juices using *in vitro* simulated digestion using pepsin and pancreatin. The TPC in all the juices ranged from 6.78-86.6 mg gallic acid equivalent (GAE)/L with AA ranging from 55.8-402 Trolox equivalent antioxidant activity (TEAC) $\mu\text{M/L}$. Under *in vitro* simulated digestion, the TPC and AA were significantly enhanced after each phase of digestion ($p < 0.05$). A strong correlation was observed for AA and TPC ($R^2 = 0.98$) at all the stages of digestion. The principal component analysis (PCA) indicated that the increase in AA in pineapple juice was more related with the phase of digestion, with the highest increase of AA after gastric (4.5 fold) and intestinal (21.0 fold) phases. The study indicates that the antioxidant potential varies considerably among different fruit juices at different stages of digestion

Keywords: Total phenolic contents; kiwi; apple; pineapple; litchi; mango; guava; pepsin; pancreatin; antioxidants; principal component analysis

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