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Correlation of Major Components And Radical Scavenging Activity of Commercial Fruit Juices in Taiwan

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In order to understand the antioxidant capacity of commercial fruit juices and find out the major components of fruit juices contributed to their antioxidant capacity, 17 commercial fruit juices including 100% fruit juices and non-100% fruit juices were investigated. Antioxidant activity of the fruit juices were determined by scavenging ability on 1,1-diphenyl-2-picrylhydrazyl (DPPH) and 2,2'-azino-bis (3-ethylbenzthia- zoline-6-sulphonic acid) (ABTS) radicals and their correlations to the total phenolics, ascorbic acid, sugars and free amino acids were also evaluated. The rank order of the total phenolics contents in fruit juices were 100% grape juices > 100% orange juices > non-100% fruits juices. Higher ascorbic acid concentration was found in 100% orange juices. The concentrations of the total phenolics in all fruit juices significantly ($r>0.8$) correlated with scavenging ability on DPPH and ABTS. However, the concentration of the ascorbic acid ($r>0.95$) in 100% orange juices had higher correlation with the scavenging ability on DPPH and ABTS. 100% fruit juices had higher sugar contents and total free amino acid concentration than non-100% fruit juices. Our results show that 100% fruit juices had higher free radical scavenging activity than that of non-100% fruit juices may be related to their high levels of the total phenolics and ascorbic acid.

Keywords: Fruit juices, Total phenolics, Sugars, Ascorbic acid, Free radical scavenging activity