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Determination of Total Antioxidant Capacity and Vitamin C Content of Selected Local Under-Utilized and Commonly Consumed Fresh Fruits

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Epidemiological studies show the significance of antioxidants towards health promotion. Fruits are potential dietary sources of antioxidants with wide variety. Regular fruit consumption lowers the risk of cardiovascular diseases and certain cancers. Detailed characterization of the antioxidant profile of fruits and vegetables is important. However, it would be useful to know the overall or 'total' antioxidant power of foods as it reflects the antioxidant potential of the food item. Sri Lanka has several fruit varieties but health potential of most of the varieties, especially of the less common varieties is not known. In this study total antioxidant capacity (TAC), in terms of Ferric Reducing Power (FRAP value) and the vitamin C content of 23 varieties of fruits available in Sri Lanka were determined. The fruits analyzed had a wide range of FRAP values (503-33271 µmol/L/g of fresh weight) and vitamin C contents (6-240 mg/100 g of edible portion). Among the 23 fruit varieties studied, *Syzygium sp* (Dan) had the highest FRAP value (33271 µmol/L/g) while the highest vitamin C content was in *Phyllanthus acidus* (star gooseberry/nelli) (240 mg/100 g of edible portion). The highest vitamin C content per serving size was found in *Carica papaya* (papaw) (190 mg/serving). The results suggest that local underutilized fruit varieties have higher contents of vitamin C and TAC compared with commonly consumed fruits. There was no significant correlation between the TAC and the vitamin C content. It indicates insignificant contribution of vitamin C towards the TAC whereas greater contribution from other compounds with antioxidant properties present in fruits. Until the active component(s) of fruits and vegetables are clearly established, measuring their TAC and vitamin C content may be useful in planning diets for health promotion.