Screening of vegetable greens for antioxidant activity: A comparative study on three cooking methods

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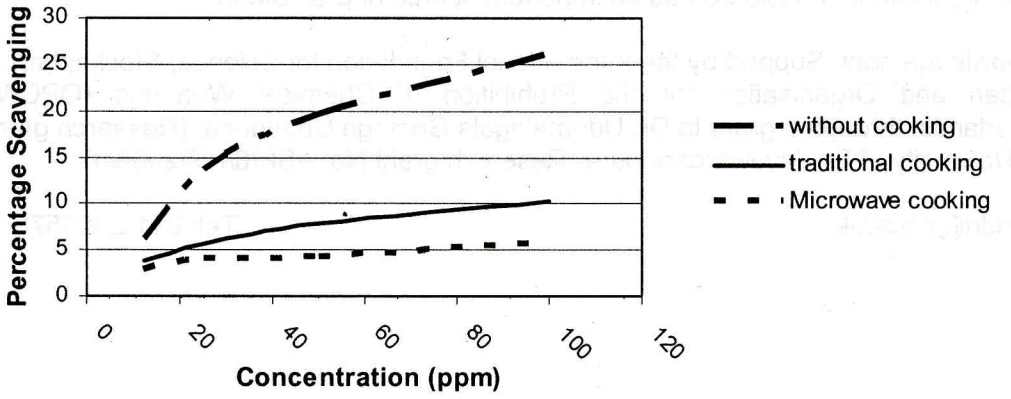
Food provides not only energy and essential nutrients needed for life, but also other bioactive compounds for health promotion and disease prevention. Epidemiologic studies have consistently shown that diet plays a crucial role in the prevention of chronic diseases. Consumption of fruits and vegetables, as well as grains has been strongly associated with reduced risk of cardiovascular disease, cancer, diabetes, Alzheimer disease, cataracts and age-related functional decline. In this context, antioxidants play a major role. Common antioxidants found in food are vitamin A, vitamin C, vitamin E and beta-carotene, and believed to be the most beneficial.

In our present investigation, qualitative and quantitative analysis of the antioxidant activity of popular vegetable greens consumed in Sri Lanka were tested and evaluated according to three common cooking methods, using DPPH (2,2-diphenyl-1-picrylhydrazil) radial scavenging assay. Qualitative assay demonstrated the presence of antioxidants in all the tested vegetable greens. Quantitatively highest amount of antioxidants were found in *Sesbania grandiflora* - Kathuru murunga (EC_{50} 219.94ppm) and *Brassica sativa* - Kola gowa (EC_{50} 249.45ppm), while the positive control Ascorbic acid had an EC_{50} value of 82.295ppm. Further, our results revealed that microwave cooking considerably reduces the antioxidant activity of vegetable greens while traditional cooking tends to reduce the antioxidant activity to a certain extent, when compared with the uncooked greens. Therefore, the best way to preserve the maximum antioxidant activity of vegetable greens is to consume them in raw state (e.g. as salads). Figure shows an example of the results of a popular vegetable green *Ipomoea aquatica*.

***Ipomoea aquatica*- Kankun**



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