

## Effect of Different Processing Methods on Antioxidant and Total Phenol Content of Selected Vegetables

<sup>1</sup>S.Mythini, <sup>1</sup>S.Vasantharuba, <sup>2</sup>S.Balakumar and <sup>2</sup>K.Sritharan

<sup>1</sup>Department of Agricultural Chemistry, Faculty of Agriculture, University of Jaffna, Sri Lanka

<sup>2</sup>Department of Biochemistry, Faculty of Medicine, University of Jaffna, Sri Lanka

Vegetables contain different types of phenolic compounds with good antioxidant properties. A study was conducted to find out the effect of different processing methods on antioxidant and total phenol content of two commonly used locally available vegetables in Jaffna namely Okra or Vendi (*Abelmoschus esculentus*) and Bitter gourd or Pahal (*Momordica charantia*). These vegetables were cooked by different cooking methods such as conventional cooking, pressure cooking, steam cooking and microwave cooking and their antioxidant and total phenol content were measured. Antioxidant content of fresh and cooked vegetables were measured by both phosphomolybdenum assay and reducing power assay and the results were expressed as Ascorbic Acid Equivalent (AAE) and Tocopherol Equivalent (TE) respectively. Total phenol content of above vegetables was estimated using the Folin Ciocalteu reagent and expressed as Gallic Acid Equivalent (GAE). Antioxidant content of fresh Okra and Bitter gourd were  $407.10 \pm 0.32$  and  $413.95 \pm 0.27$  mg of AAE/100 g dry weight (phosphomolybdenum assay) and  $76.40 \pm 0.62$  and  $217.48 \pm 0.52$  mg of TE/100 g dry weight (reducing power assay) respectively. Total phenol content of fresh Okra and Bitter gourd was  $145.56 \pm 0.56$  and  $179.58 \pm 0.42$  mg of GAE/100 g dry weight respectively. A positive correlation was observed between antioxidant (phosphomolybdenum assay) and total phenol content of Okra ( $r^2=0.772$ ) and Bitter gourd ( $r^2=0.597$ ). Antioxidant and total phenol content of both vegetables were reduced in most of the cooking methods when compared to the respective fresh samples. The rate of loss in antioxidant and total phenol content was less in conventionally cooked Okra and Bitter gourd when compared to above vegetables cooked by other methods.

**Keywords:** Antioxidant; Bitter gourd; Okra; Processing methods; Total phenol.