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Effect of Some Treatments on Phenolic Compounds Content and Antioxidant Potency of Tiger Nut Tubers (*Cyperus esculentus* L) (2013)
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Abstract

The effects of different preparation methods (boiling water blanching for 45 minutes, soaking in water for 48 hours at room temperature and roasting at $130 \pm 5^\circ\text{C}$ for 30 minutes) on phenolic compounds content and antioxidant activity of tiger nut tubers (*Cyperus esculentus* L) were investigated. Among the eight phenolic compounds identified; gallic acid and apigenin were found the dominant in control sample with values 43.15 and 30.12 mg/mL respectively, all the treatments causes reduce in phenolic compounds content. Compared to control sample boiling water blanching showed the highest reduction on most phenolic compounds followed by roasting and soaking.

The same trend was noticed with the antioxidant potency measured by DPPH and ABTS assay techniques. In contrast measuring antioxidant potency of treated samples extracts in food matrix (oil) by Rancimat technique showed that the three treatments enhancing the antioxidant potency.

The order of decreasing efficacy was roasting followed by soaking followed by boiling water blanching extracts. From these results it could be suggested that roasting and soaking had more desirable effects on antioxidant activity of tiger nut samples.