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Variation of water solubility index and water absorption index of *Ipomea batatas* (sweet potatoes) cultivars

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Sweet potato (*Ipomoea batatas* L.) is considered as one of the most versatile energy and vitamin provider. Functional properties of food such as water solubility index (WSI) and water absorption index (WAI) are used in food industry to find the suitability of flour types for food systems. The objective of this study is to make available the data on WSI and WAI of five sweet potato varieties consumed by Sri Lankans. Determination of WSI and WAI of Dhawala, Gannoruwa White, Chithra, CARI 273 and Makandura Purple was carried out using flour of raw and freshly boiled (home cooked) sweet potato samples of the selected varieties. Determination of WSI and WAI was carried out by standard methods (n=6). Significances were analyzed at 95% confidence interval using SPSS. WSI of tested sweet potato varieties varied between 19-30 % in raw flour, having the highest and lowest values for Dhawala (30%) and Makandura purple (19%) varieties respectively. In boiled flour Gannoruwa white and Dhawala had the lowest (17%) and highest (27%) WSI respectively. Irrespective of processing Dhawala had the highest solubility followed by Chithra and CARI 273. However, there was no significant change in WSI of the varieties due to boiling. WAI varied between 185-370% in raw forms and 320-500% in boiled forms. There was significant increase ($p<0.05$) in WAI of all the varieties due to boiling. Among the tested varieties, both boiled (496%) and raw (369%) forms of Makandura Purple had the highest WAI. All the five tested sweet potato varieties (both boiled and raw forms) showed high water absorption indices above 180% and low water solubility indices less than 30%. Low WSI with high WAI of flours suggests that the flours can be used in formulation of food such as extruded snacks and bakery products.

Keywords: Functional properties, *Ipomea batata*, water absorption index, water solubility index

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