ANTIOXIDATIVE CAPACITY OF A NIGERIAN OKRA SEED FLOUR AND ITS STABILITY BY IN VITRO DIGESTION

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Dried seeds of okra have been proposed as a new high protein crop for the temperate zone and the tropics. Studies have been conducted on okra seed oil, defatted meal, nutritional value of okra seed flour and its antioxidant property. Since high antioxidant levels in foods don't necessarily translate into levels found in the body and the potential health benefits of these antioxidants ultimately depend on how they are absorbed and utilized in the body, this study was carried out to determine the stability of okra seed antioxidant under gastrointestinal tract by in vitro digestion.

Known and equal (100g) quantities of okra seeds were soaked in 300ml of water for 6, 12, 18, 24, 36 and 48 hours respectively. These were washed, dried, milled and sieved to obtain a flour fraction of less than 250 µm. Determination of the free radical scavenging activity (FRSA) in the 1,1-diphenyl-2-picrylhydrazil radical (DPPH) assay and in vitro digestion were determined according to standard method. Digestion in vitro with enzymatic extracts mimicking conditions in the gastrointestinal tract showed that the amount of antioxidants released by the okra matrix into the human intestine was higher than that from measurements made on the usual aqueous-organic extracts for all samples and also higher than those released in the gastric phase. The health benefit of this seed was established due to its stability under gastrointestinal tracts. We therefore conclude that the flour obtained from the seed could find useful application in food formulations.