DETERMINATION OF ANTIOXIDANT ACTIVITY AND TOTAL PHENOLIC CONTENT IN BUCKWHEAT (*FAGOPYRUM ESCULENTUM* MOENCH) GRAINS.


Buckwheat (*Fagopyrum esculentum* Moench), a gluten-free pseudocereal crop belonging to the family Polygonaceae, is an important functional food source, presenting positive effects on some chronic disease conditions, such as hypertension, diabetes, and other cardiovascular diseases. It also has a good antioxidant activity, being an alternative source of compounds with antioxidant activity for celiac disease patients. The objective of this study was to evaluate the antioxidant capacity and total phenolic content in buckwheat grains. The antioxidant capacity was measured by the DPPH (1,1-diphenyl-2-picrylhydrazyl) radical scavenging method. The absorbances of the solutions were measured at 517 nm. The results were expressed in IC$_{50}$ values (concentration of extracts giving 50% inhibition). The total phenolic content was determined using the Folin-Ciocalteu reagent, and the absorbances of samples were measured at 765 nm. The results were expressed in gallic acid equivalent (GAE). Buckwheat obtained IC$_{50}$ value of 89.71 µg/mL. The antioxidant activity index (AAI) for this grains was 0.4, although it is considered weak, is higher than that found in other pseudocereals. The total phenolic content of buckwheat grains was 130.13 mgGAE/100g, similar to that found in other cereals such as oats and barley, proving the fact of the grain to be a good replacement of such compounds to the celiac disease patients. With these results, this study confirms that buckwheat grains are an important alternative source of antioxidant compounds in human diet.