WHOLE WHEAT BREAD WITH MORUS ALBA LEAVES AS A PROPOSAL FOR DIABETICS

EWA FLACZYK, JOANNA KOBUS-CISOWSKA, MAŁGORZATA KOBUS-MORYSON, AGNIESZKA GRYSZCZYŃSKA*, JÓZEF KORCZAK

Faculty of Food Sciences and Nutrition
Poznan University of Life Sciences, Poznań, Poland.
*Institute of Natural Fiber and Medicinal Plants, Poznań, Poland.

Bread is one of the most popular cereal product. Bread prepared from whole cereals (whole grain flour) has much higher nutritive value than bread from endosperm. Such kind of bread can be readily consumed by diabetics. It should be produced from whole grains with fiber, β-glucans and rich in antioxidants and anti α-glicosidase activity substances.

The aim of the study was to analyze influence of adding of water extract of Morus alba leaves on antioxidant activity and the level of 1,5-dideoksy-1,5-imino-D-sorbitol (DNJ) in bread. Sensory acceptance of such bread were done also.

Breads from whole wheat flour with an addition of Morus alba leaves and two levels of water extracts were baked. Antioxidant properties of breads and amount of DNJ in 80% methanol extracts were estimated. The phenolics content (with Folin-Ciocalteu’s reagent), DPPH and ABTS antiradical activity, Fe+2 chelating activity were measured. Content of iminosugars (DNJ) in such bread extracts by UPLC TM/MS method were determined. Sensory 5-point analyses of different breads were done.

Bread with Morus alba leaves and lyophilized water extract possessed high antiradical activity against ABTS, DPPH, high chelating activity and reducing power and high amount of DNJ. Control bread had the smallest level of analyzed substances. Sensory analysis of breads concerns such descriptors as volume and shape, bread crumb and peel, flavor and susceptibility to chewing showed no statistically significant differences.

Breads with water Morus alba leaves extracts are rich in natural antioxidants and iminosugars and can be a proposal of bread for diabetics.

Financial supported by the UE Project nr POIG 01.01.02-00-061/09