World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:8, No:12, 2014

The Effect of Addition of White Mulberry Fruits on the Antioxidant Activity of the New Developed Bioactive Bread

Authors : Kobus-Cisowska Joanna, Flaczyk Ewa, Gramza-Michalowska Anna, Kmiecik Dominik, Przeor Monika, Marcinkowska Agata and Korczak Józef

Abstract : Cereal products, including mainly bread is a staple food known from the beginning of history throughout the world. It is now believed that there is no replacement of the basic food. Bread, due to the high content of starch is the energy source for the proper functioning of our body. It also contains proteins, fats, vitamins, especially of the B group and vitamin E, a number of minerals, and fiber. The aim of the study was to evaluate the antioxidant activity of new developed bread premixes with mulberry fruits for people with anemia, diabetes, obesity and cardiovascular disease. From the finished product-bread, aqueous and methanol extracts was prepared, which in next step were analyzed to assess the activity of the radical DPPH test, ABTS, chelating activity, the ability to reduce metals. Extracts were prepared from bread were acquired with premixes directly after production and stored for three months. The resulting trial breads effect by different mechanisms of antioxidant. They showed the ability to scavenge radicals ABTS and DPPH and chelating activity. Methanol extracts showed significantly greater antioxidant activity in comparison with aqueous extracts, and the largest effect was estimated for sample of bread for anemia, diabetes and cardiovascular disease. The greatest ability to scavenging ABTS radicals showed breads for anemia, diabetes and cardiovascular disease, while smaller for anemia and control sample. It was shown that the methanol extracts of the breads samples showed no ability to chelate iron (II). These properties are observed only in the aqueous extracts. The greatest ability attempt had anemia while the lowest control sample. Financial supported by the UE Project no POIG 01.01.02-00-061/09.

Keywords : morus alba, antioxidant activity, free radicals, polyphenols
Conference Title : ICAEE 2014 : International Conference on Agricultural and Environmental Engineering
Conference Location : Sydney, Australia
Conference Dates : December 15-16, 2014