P 2.13. PHENOLIC COMPOUNDS AND ANTIOXIDANT CAPACITY OF LENTIL (*Lens culinaris* L.) FLOUR

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Legumes are important crops because of their nutritional quality and also known as "a poor man meat". The lentil (*Lens culinaris* **L.**) is a legume plant and one of the oldest known food crops. It is an excellent and inexpensive source of amino acids, such as lysine and arginine, complex carbohydrates, fibber, mineral matters and phenolic compounds. In bread making industry, the flour from legume seeds, could be used in order to increase the protein value and enrich bread with legume nutritients. The phenolic compounds have free radical scavenging abilities, antimutagenic and anticancerogenic activities and there is increasing interest for phenolic compounds in food, today. In our work the content and composition of phenolic compounds as well as their antioxidant activity of lentil flour were examined. The lentil flour was obtained by milling a lentil seeds originated from Canada, grown in 2009. year and sieving through a 0.30 mm riddle. The phenolic compounds were extracted by using 80% (v/v) ethanol and their content was determined based on a standard curve with chlorogenic acid concentrations covering the range from 10 to 300 μmol/dm^3 (C=2319xAb-10.2). The antioxidant activity was determined by using DPPH radicals test. HPLC analyses on an Agilent 1100 Series HPLC system, Agilent Eclipse XDB-C18 column and spectrophotometric detection in the UV region at 350 nm was used for determining the composition of phenolic compounds. The content of phenolic compounds in investigated lentil flour was 34.7 μmol of chlorogenic acid per g of dried extract residue i.e. 2.82 μmol of chlorogenic acid per g of lentil flour. Results of antioxidant capacity of investigated extracts of phenolic compounds showed the maximum DPPH radical scavenging capacity was 93% at extract's concentration of 8.0 mg/ml. The extract's concentration that causes a decrease in the initial DPPH concentration by 50 % was 1.9 mg/ml. By using the HPLC analysis, quercetin 3-O-sophoroside (48.8 %), kaempferol 3-*O*-(6'' -malonylglucoside)-7-*O*-glucoside (38.1%), apigenin 4-*O*-glucoside (3.8 %) and kaempferol-3-*O*-rhamnoside (1.1%) were compounds found in content of over 1%. In total sum, the content of quercentin glucosides were 50.1% and the content of kaempferol glucosides, 39.6%.

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