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The congress addressed the following topics:
Food expertise and safety

Novel Systems for Food Chain
Natural Bioactive Compounds, Functional and Traditional Food Products
Global challenges and competitiveness

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Видання містить тези доповідей провідних вчених, спеціалістів та молодих науковців у галузі харчової науки, техніки, технології, хімії та економіки і управління - учасників Другого північно- та східно-європейського конгресу з харчової науки (NEEFood-2013).

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Глобальні виклики та конкурентоспроможність

Для викладачів, наукових працівників, інженерно-технічного складу та керівників підприємств харчової промисловості

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POSTER PRESENTATIONS

Section **FOOD EXPERTISE AND SAFETY**

APPLICATION OF THE MIXOLAB AS A TOOL FOR THE EXPANSION OF FLOUR ASSORTMENT

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The flour, as a product of the grain processing, is a raw material for the baking, pasta, confectionery, pastry industries. According to the Ukrainian standards only 3 grades of the flour are obtained at the mill while as the different quality indexes of the flour for the various products are required. At the modern mills with the expanded flow diagram is possible to obtain about 20-30 flour streams which were analyzed for the protein content, ash content, whiteness, quantity and quality of gluten, Falling Number, the index of sedimentation, water-absorbing capacity. The physical properties of dough at the Mixolab and Alveograph techniques, laboratory bakery and pastry tests of the flour streams also were conducted. One of the goals of these studies was the justification of the new innovative Mixolab device as a tool for the production flour for the different end-use purposes. Was established that the all flour streams have a different graphic Mixolab profile including 6 quality indexes even on the systems belonging to the one group of quality and especially on the systems of the different stages of the technological process. Index 1 primarily depends on the stage of the technological process and the modes of the system which the flour stream was obtained. The protein content, quantity and quality of the gluten impact on 2nd and 3rd Mixolab indexes and finally the 4,5 and 6 indexes are a result of the starch content, starch granules damage, Falling Number of the flour. Thus each flour stream has a different set of indexes and is suitable for producing of various products. For example, the maximum value of index 2 tend to flour streams from B3f, D2 and C1 system. This flour is good for baking purposes. In the opposite of that the flour from S2, C3, C5, B1 system has low value of this index, and better is suitable for producing of cookies and crackers. The flour from B1 also has a low water-absorbing capacity due to the low starch granule damage which makes it a valuable raw material for sugar cookies.

KEY WORDS: wheat flour, Mixolab, quality, end-use application

ANTIOXIDANT ACTIVITY OF MACROLEPIOTA PROCERA WILD MUSHROOM SUBMITTED TO DIFFERENT PROCESSING TECHNOLOGIES

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Mushrooms are very perishable food products and tend to lose quality immediately after harveStr. Drying is the most common method for preserving mushrooms, freezing is becoming increasingly popular and food irradiation has also been suggested by many researchers as a good conservation technique in order to maintain and increase the food shelf life. In the present work, the effects of different processing technologies (freezing, drying and gamma irradiation) on antioxidant activity of the wild mushroom *Macrolepiota procera* were evaluated. Fruiting bodies were obtained in Trás-os-Montes, in the Northeast of Portugal, in November 2011. The irradiation was performed in experimental equipment with four ^{60}Co sources at 0.6 kGy. The samples were submitted to different processing technologies: freezing (at -20 ºC in a freezer), drying (at 30 ºC in an oven) and gamma irradiation in fresh samples. Antioxidant activity was determined in the methanolic extracts by *in vitro* assays measuring DPPH (1,1-diphenyl-2-picrylhydrazyl) radical scavenging activity, reducing power, inhibition of β-carotene bleaching and inhibition of lipid peroxidation using thiobarbituric acid reactive substances (TBARS) assay. Total phenolics were also determined by the Folin-Ciocalteu assay. Dried samples gave the highest DPPH scavenging activity (50% at 2.7 mg/mL), β-carotene bleaching inhibition (50% at 1.10 mg/mL) and the highest phenolic content (19.2 mg GAE/g methanolic extract). Frozen and irradiated samples presented the highest reducing power (0.5 absorbance at 1.27 mg/mL) and TBARS formation inhibition (50% at 0.78 mg/mL), respectively. The applied processing technologies affected favourably the antioxidant potential of *M. procera* extracts, particularly dryness for DPPH scavenging activity and β-carotene bleaching inhibition, freezing for reducing power and irradiation for TBARS formation inhibition.

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KEY WORDS: wild mushroom, macrolepiota procera, processed samples, antioxidant activity