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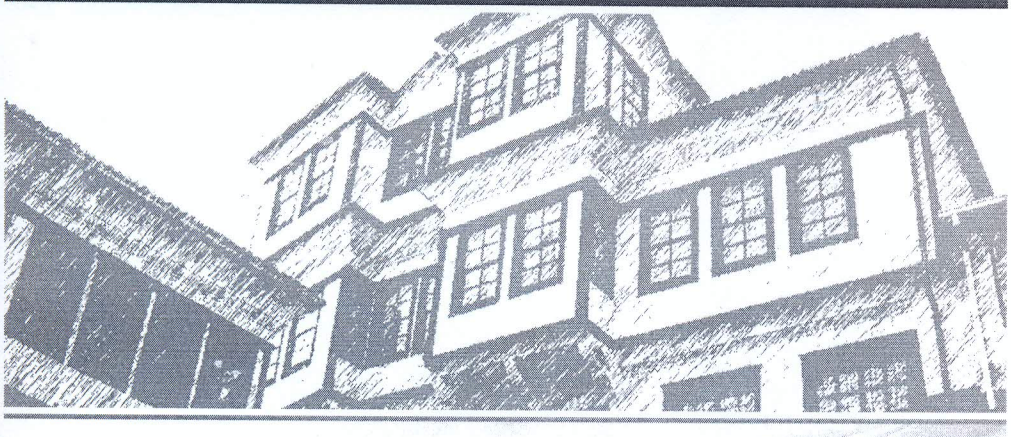

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material for analysis, fermented raw material was taken from two harvests of tobacco crops in 2011 and 2012 including three insertions: lower, middle and upper. The experiment included following analyses: quantitative determination of the content of total and soluble carbohydrates (spectrophotometric method), quantitative analysis of total nitrogen and proteins (Kjeldahl) and testing of the oxidoreductase activity (catalase enzyme activity).

Results: Examined parameters directly affect the quality characteristics of fermented tobacco and they alter the physical and features flavors of tobacco products. The carbohydrates are one of the most important biomolecules and in mature leaves of tobacco, they can be represented up to 40-45% of dry matter. The harvest of 2012 in all varieties of tobacco, shows larger concentrations of total and soluble carbohydrates, unlike 2011 where the concentrations are lower.

Conclusion: Carbohydrates as primary metabolites are inversely proportional according to the concentration of proteins and total nitrogen. The results also showed larger concentration of proteins and nitrogen in the harvest of 2011 than that of 2012, which confirms that, prolonged fermentation of the raw material decreases the content of carbohydrates and increases the concentration of proteins and nitrogen, analogous to the reduction of the quality of tobacco. The enzyme catalase has a defensive role in the fermentation process from different microorganisms and it shows largest activity at the variety JK-125/3 which is one of the most resistant species to Tobacco mosaic virus (TMV).

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Natural radioactivity in uncultivated soil in the surrounding of Skopje

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Introduction: Natural radioactivity of the environment and the associated external exposure that is due to gamma radiation depend primarily on the geological and the geographical conditions and exist at different levels in the soil of every region of the world. The measurement and the understanding of the behavior of natural radionuclides in the environment is very important, because natural radiation is the biggest contributor for the external dose in the world population. The objective of this study was focused on determination of the concentrations of activity of ^{226}Ra, ^{232}Th and ^{40}K in samples of uncultivated soil, collected from different locations in the surroundings of Skopje. The concentrations of activity of ^{226}Ra, ^{232}Th and ^{40}K in the collected soil samples were assessed with gamma spectrometry and the technique for registration and monitoring.

Material and methods: In order to measure natural radioactivity in soil, samples of uncultivated soil were collected from 14 locations in the surroundings of Skopje in May 2012, including 3-4 samples of uncultivated soil according to the recommendations of IAEA. The measurements of the concentrations of activity of ^{226}Ra, ^{232}Th and ^{40}K in the collected soil samples were determined by using HPGe gamma spectrometer and the technique for registration of the monitoring of fission.

Results: In the current study it was found that the specific activity of these radionuclides in the soil is not uniform, however it is different in different soils, depending on the geological or the typographical character of the area. Also, the measured values of concentration of activity of the radionuclides ^{40}K, ^{226}Ra and ^{232}Th in all soils that are being examined are within the world range indicated by international organizations. Due to the long half-life of ^{232}Th, the values of ^{232}Th are higher than the values of ^{226}Ra in all uncultivated soils in all the places that were being examined. In terms of the activity in regard to depth, no mutual conection is found between the activity and the depth for ^{226}Ra and ^{232}Th. The measured values of radioactivity show that it is randomly distributed in different depths of the soil that was being examined.

Conclusion: One can determine that the activity of all natural radionuclides in uncultivated soil is significantly lower than the measurements that are performed at the cultivated soil. This is due to the application of different fertilizers that are applied on agricultural fields in recommendable quantities, that may increase the level of radioactivity in soils. The results and data from this study are useful as a foundation, for the preparation of a radiological map of the studied area, as well as for enrichment of the world data base.

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Investigation of methicillin and vancomycin resistance in *Staphylococcus aureus* isolated from goat milk with mastitis

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In this study, the phenotypical and genotypical resistance of *S. Aureus* isolates, from goat milk with mastitis, to methicillin and vancomycin were investigated. For this purpose, a total of 466 milk samples were collected from 233 goats in the Burdur province. Out of 43 *S. Aureus* isolates from goat milk samples, 7 isolates according to disk diffusion test and 5 isolates according to minimal inhibitory concentration (MIC) values were found phenotypically resistant to methicillin, but none of these isolates carried the *mecA* gene encoding methicillin resistance. All *S. Aureus* isolates did not harbor the *vanA* gene (encoding vancomycin resistance) and these isolates were also susceptible to vancomycin according to the disc diffusion test and MIC. As a conclusion, it is stated that