

ANALYSIS OF BEE BREAD QUALITY FROM SERPENTINE AREAS IN ALBANIA AND BULGARIA

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The quality of bee bread samples collected from south eastern serpentine areas in Albania and Bulgaria was evaluated and compared on the basis of their pollen content by qualitative melissopalynological analysis, chemical composition and morphological characteristic of bee bread. The pollen morphological data after standard acetolysis method were used to determine the botanical origin of the collected samples. Macro elements K, Ca, Mg, P and microelements Cd, Co, Cr, Cu, Fe, Mn, Na, Ni, Pb and Zn were determined after inductively coupled plasma atomic emission spectroscopy (ICP-AES) method. Most of the analyzed Albanian samples were mono floral while Bulgarian samples were poly floral. The percentages of pollen between samples varied considerably. Predominantly *Vicia* type pollen grains were found in the Albanian bee bread samples. *Brassicaceae* pollen was also determined in all samples but in different concentrations mostly in Albanian samples. Pollen from Ni hyper accumulator *Alyssum murale* was difficult to be separated from other *Brassicaceae* pollen grains. Studied elements have different concentrations in bee bread samples even if they originated from the same geographical region and locality depending on the environmental characteristics of the locality. The concentrations of Ni, Cr, Co and Fe elements that normally are elevated in serpentine areas were in Albanian samples about 8, 4, 2 and 3 times higher compared to the data from Bulgaria.

The concentrations of Cu, Zn and Ca were higher in the Bulgarian samples. As a product of high commercial value, the quality of bee bread should be controlled and standardization of metal content for more metals has to be accepted. The bee keepers should be informed about possible negative effect of naturally metalliferous soils on the quality of bee bread and should pay attention to the environmental characteristics of the locality where they place bee hives. A strict control on the metal concentrations has to be paid on bee bread pollen used as a medication, as a food and as a nutraceutical supplement.

Biography

Aida Bani has graduated from Agriculture University of Tirana (AUT) in Agromomic Sciences, 1989. She enrolled at AUT and INPL, Nancy, France for her PhD studies and received the title Doctor of Sciences in year 2009. She has several articles published in high impact factor scientific journals. She has participated in 68 international scientific conferences. She is a passionate Lecturer of several courses such as: Landscape Architecture, Landscape Management, Soil Remediation Methodologies etc. Her scientific interest particularly relies on topics connecting with agriculture, environment and landscape. She has also been leading several national and international scientific projects in the field of agriculture and environment.

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