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1. međunarodna studentska GREEN konferencija

17. i 18. svibnja 2018.

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Osijek

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KNJIGA SAŽETAKA

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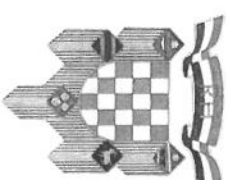
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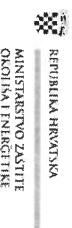
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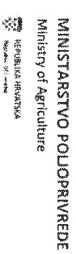
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Osijek, Croatia, 17-18 May 2018

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PRIRODNE ZNANOSTI/NATURAL SCIENCES
**USAGE OF AUTOCHTHONOUS BREEDS IN ORGANIC
AGRICULTURE IN THE DEVELOPMENT
OF UNDERDEVELOPED AREAS**

Edina Srabović, Mirela Grbić, Almir Sarajić, Mirnesa Zohorović*

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Half liter of organic whole milk (or an equivalent of fat from other milk products like butter or cheese) provides estimated 16% (39 mg) of the recommended daily intake of a very long chain of omega-3 acids, while conventional milk provides 11% (25 mg). A higher level of fatty soluble vitamins, such as vitamin E and carotenoids, and 40% more CLA in organic milk have also been observed. Conventional milk has a higher average proportion of single unsaturated fatty acids compared to organic. Bush is one of the smallest breeds in the world, lactating from 1000 to 2000 liters of milk with 4-6% fat. The meat is of exceptional quality. The domestic Balkan horned goat is mostly encountered in the lower and higher regions of the naked and covered karst of Bosnia and Herzegovina (flat and mountainous type). During 5-6 months lactation produces 100-150 liters of milk. In comparison to the more noble breeds, they are more resistant to poorer conditions of keeping and are not picky in the nutrition. Pramenka is a term that denotes a primitive sheep, a weak physiological property, which was created in the scarce conditions of nutrition and care, and which has been well adapted for many years. The development of organic agriculture contributes to the preservation of natural resources, especially water and land, directly influencing the development of a range of additional activities in rural areas, and most of all contributes to the development of rural tourism.

Keywords: organic whole milk, conventional milk, lactation, Bush, The domestic Balkan horned goat, Pramenka

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PRIRODNE ZNANOSTI/NATURAL SCIENCES
**NEW METHODS FOR BIOMATERIAL PREPARATION:
MECHANOCHEMICAL SYNTHESIS OF CALCIUM
OXALATE MONOHYDRATE**

Silvija Šafranković, Dominik Goman¹, Filip Bolić², Marina Sekulić²,
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Frequent occurrence of kidney stones caused by the changes in living and eating habits especially in developing and industrialized countries, has led scientists to study mechanisms of kidney stones genesis. Calcium oxalate crystallizes in three hydrate forms: thermodynamically stable calcium oxalate monohydrate (COM), metastable dihydrate (COD) and trihydrate (COT). COM is the most commonly found in kidney stones and therefore, most of the studies put the emphasis on this form of oxalate.

This study shows the environmentally friendly, mechanochemical synthesis of calcium oxalate in a planetary ball mill, with and without the presence of a small amount of solvent. Unlike previous investigations that were mainly focused on the solution synthesis this type of preparation will bring a new knowledge about the synthesis of calcium oxalate crystals caused by the influence of mechanical energy.

The main goal is the synthesis, identification and characterization of COM synthesized from calcium salts (chloride, sulfate and nitrate), using a mill speed of 750 rpm with monitoring the reaction progress as a function of the synthesis time. Structural and thermal properties of the samples were examined by FT-IR spectroscopy, thermogravimetric analysis, and crystal morphology was characterized by optical microscopy.

Keywords: Natural Sciences, Mechanochemistry, Calcium oxalate monohydrate, kidney stones