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The influence of ultrasound treatment to composition and food properties in traditional organic pork-beef meat products*

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Abstract

One of the core assumptions of traditional food production is to manufacture natural products following recipes passed from generation to generation, containing as few food additives, contaminants and residues of plant protection agents as possible. In consumers' opinion, traditional food is characterized by unique sensory properties and high quality. Producers of organic meat products made according to traditional methods try to satisfy the buyer's needs; therefore, they use new technologies to guarantee the expected quality of these products. One of the new preservation methods is ultrasound treatment. The aim of this study was to investigate differences in the composition of traditional organic meat products, such as salami and sausages, treated with ultrasounds at various frequencies. The experimental material consisted of samples of salami and sausages with various beef additions. The results showed that the products ultrasonicated at a higher frequency contained significantly more protein and pigments. It was found that sonication reduced nitrate and nitrite content in products, which significantly improved the health quality of the assessed products. No significant effect of the different ultrasound frequencies on the content of chlorinated hydrocarbons was found; however, the content of these compounds was lower than the threshold levels contained in the regulation of the European Commission.

Keywords: ultrasound treatment, organic meat products, meat composition, meat quality

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