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TITLE: Influence of different litter types on harmful gases emission in broiler production

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ABSTRACT (upto300 words)

One of the key factors for the success of broiler production is the selection of an adequate bedding material. In an intensive broiler production system, broilers are raised under a deep litter system that has high absorption potential. Poultry production has been developing rapidly in recent years and with it the growing concern for the waste disposal and harmful gases emission. In poultry rearing bedding material plays a very important role. Emission of harmful gases affects both birds and workers. The aim of this study was to estimate the emission levels of harmful gases, such as ammonia (NH₃), carbon dioxide (CO₂) and hydrogen sulfide (H₂S) using six different litter types. Measurement of harmful gas concentrations were performed weekly from each treatment. The concentration of ammonia was first recorded above the permitted value of 20 ppm at day 28. During the fattening period the concentrations of measured carbon dioxide did not exceed the permitted level of 3000 ppm, while hydrogen sulfide was not detected. The mentioned research indicates the influence of different materials and formulations used in broiler production. Due to the fact that broilers are in constant contact with the litter, careful selection, adequate management, proper storage and proper use contributes to better and higher quality air inside the broiler house, which leads to lower gases emission.

Key words: broilers, bedding materials, ammonia, carbon dioxide, hydrogen sulfide

BIOGRAPHY (upto200words)

Slobodan Knežević completed his basic studies at the Faculty of Veterinary Medicine, University of Novi Sad, Republic of Serbia. He is currently attending doctoral studies at the Faculty of Veterinary Medicine, University of Belgrade. Since 2015, he has been employed at the Scientific Veterinary Institute in Novi Sad. He works as a Research Assistant at the Department of Epizootiology, Clinical Examination and DDD. His scientific field is health protection of poultry and wildlife, veterinary epidemiology. He is also head of the Service for material reception. Slobodan published over 53 publications.

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