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## The efficacy of a deodorizing biopreparation in poultry farming

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The aim of this study was to determine whether the deodoric<sup>®</sup> biopreparation (a mixture of microorganisms on a mineral carrier, in loose form) can minimize odor from deep litter poultry houses, and improve sanitation and hygiene standards, i.e. contribute to eliminating pathogenic microorganisms and reducing microbial contamination. The experiment was performed on laying hens, broiler chickens and turkeys. Experimental and control groups of equal size were kept under identical housing, management, microclimate and feeding conditions. Stocking density met the relevant requirements. The biopreparation was applied to the litter once a week, at 170 g per m<sup>2</sup> in layer and broiler houses, and at 180 g per m<sup>2</sup> in turkey houses. The emissions of odorous gases, including ammonia and hydrogen sulfide, were measured. The tested biopreparation alleviated the effect of indoor environmental conditions on atmospheric ammonia concentrations in a layer house, and significantly reduced ammonia levels in broiler chicken and turkey houses. An analysis of growth performance data revealed that higher ammonia emissions in the control group could adversely affect the body weights of laying hens, the number of eggs laid, and laying performance, in comparison with the experimental group. Litter samples and swabs collected from the feet, sternum, beak, trachea and air sacs were subjected to microbiological analyses, which confirmed that microbial counts decreased in the litter and swabs. Blood immunological, biochemical and hematological parameters were determined, and a histological analysis was performed after slaughter. The results demonstrated that the analyzed biopreparation had no negative influence on the health status of birds. It was also found that the application of the biopreparation to the litter increased the fertilizer value of poultry manure.

### Biography

T Bakula, Habilitated Doctor, is employed at the Department of Veterinary Prevention and Feed Hygiene, Faculty of Veterinary Medicine, University of Warmia and Mazury in Olsztyn, Poland. He is the Director of the Biodefense Laboratory. His main area of research interest is biosafety in food and feed production. He has published over 60 scientific articles in international journals and over 150 other papers.

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