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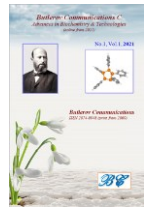

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The role of microflora of manure effluent in odour formation

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Abstract

The article considers the role of manure effluent microflora in the formation of odors caused by large industrial pig farms. The urgency of the issue is due to the high odour load experienced by the residents of residential areas located in the vicinity and downwind from pig farms. Understanding microbiological processes occurring in manure will solve the problem of smell formation from animal waste. Most odors are formed by a complex combination of odorous chemical compounds, which makes it difficult to identify them in the air by instrumental methods. The aim of the research was to study the role of microorganisms isolated from swine effluents in the formation of odors, as well as the effects of storage and pH changes (acidification) on the microbiocenosis of manure effluents (ME). The methods of odour control developed on the basis of microbial activity are promising and effective. Samples of pig manure were taken directly from the underground manure baths of the pig-fattening farm, local bacterial communities involved in the reactions causing unpleasant odours were identified and analyzed. In the course of the study, the qualitative and quantitative composition of manure effluents (ME) formed during the vital activity of pigs was determined, consideration being taken of the specific changes in the ME microflora depending on the storage period and pH changes (acidification). The shift in the pH of manure effluents from pH 7.7 to 5.3 led to a decrease in *Peptostreptococcus anaerobius* and *Peptoniphilus asaccharolyticus*, disappearance of *Prevotella bivia*, *R. intermedia* and *Alistipes putredinis*, as well as to a decrease in odour load. The most resistant to the pH shift to the acid side are *Clostridium spp.* and *Bacteroides fragilis*.

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