

Plewa-Tutaj, K., Pietras-Szewczyk, M., Lonc, E. Attempt to Estimate Spatial Distribution of Microbial Air Contamination on the Territory and in Proximity of a Selected Poultry Farm. *Ochrona Srodowiska* 2014, Vol. 36, No. 2, pp. 21–28.

Abstract: Intensive poultry farming poses a serious health hazard as a source of bioaerosol that may lead to local and more extensive air pollution. The aim of the research was to investigate numbers of airborne bacteria inside and outside poultry houses as well as to visualize spatial distribution of bioaerosol using geoinformatic methods. ArcGIS software was used for spatial analysis of the results while interpolation methods, simple kriging and ordinary kriging, to create maps of distribution of microbial contamination. The results obtained confirmed high concentration of microorganisms in indoor air, which may spread as bioaerosol via ventilation system outdoors. Microbiological data presented on raster maps illustrate, with the use of GIS techniques, potential spread of microbial contaminants, thus, indicating the areas most at risk. Conclusions drawn from the research findings may be employed for local health or urban architectural strategy formation, mostly in relation to the choice of housing estate locations.

Keywords: Air pollution, bioaerosol, GIS, spatial analysis, simple kriging, ordinary kriging.