The Air Quality in Pig Growing and Fattening Shelters

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SUMMARY

Hygienic air quality is an important factor in modern pig farms because it represents one of the abiotic components necessary for the health and welfare of animals (Duchaine et al. 2000). Namely, air in the facilities can serve as a reservoir for primary and potentially pathogenic microorganisms that are important in the etiology of infectious and allergic diseases (Wathes, 1994). This study’s aim was to determine the air quality in pig growing and fattening shelters. The investigations were made in 3 shelters in a farm of approximately 3000 heads in Cluj county, in April 2009. The air quality was assessed through the total number of germs (TNG), number of Streptococci, Staphylococci, Gram negative germs and fungi. The numbers of bacteria and fungi were determined by the sedimentation method. The TNG ranged from 5.94 x 10⁵ to 7.59 x 10⁵; the number of Staphylococci had a domain from 8.48 x 10³ to 2.87 x 10; the number of Streptococci was between 4.14x10⁵ and 5.82x10⁶; the Gram negatives between 5.5 x 10⁵ and 3.14 x 10⁶; and the number of fungi ranged from 3.14 x 10⁵ to 2.84 x 10⁶, respectively. Our results are in accordance with those obtained by other studies, excepting the numbers of Streptococci and fungi. Highly variable data on the total number of bacteria in the fattening unit, ranging from 10⁴ to 10⁶ CFU/m³ (Chang et al., 2001), have been published. The numbers of Streptococci and of the fungi are higher comparative to other studies’ determinations (Chang et al., 2001; Donham 1991). Within the germs with hygienical significance, the Streptococci had the highest density, representing between 70 and 97% inside the TNG. The obtained results indicate both the necessity of air disinfection in the investigated shelters and the need of general disinfection, taking into account the fact that Streptococci represents a contamination indicator of air, especially for naso-pharyngeal and buccal microflora.

Keywords: pigs, airborne bacteria, fungi

REFERENCES