

Research project IZSve 16/14

Sustainable animal husbandry practices as a means to improve animal health and welfare and to reduce antimicrobial use in broiler chickens

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Husbandry conditions are known to have a direct impact on broiler health and welfare. Poor litter conditions increase the risk of enteric infections and technopathies (breast buttons, hock burn lesions, ascites, foot pad dermatitis). Ammonia and dust can harm broilers' respiratory system, worsening Mycoplasma and E. coli infections, IB, APV and ORT. Such a harmful environment may lead to increased use of antimicrobials and, therefore, to the occurrence of antimicrobial resistance. Innovative solutions for broiler sheds, which assure optimal control of temperature, humidity and ventilation, are expected to mitigate health problems in broilers and, consequently, to decrease antimicrobial use. At present, limited evidence is available on the association between antimicrobial use and broiler shed type, as well as on the possible effects of antimicrobial use on animal welfare and gut microbiota disturbance. This project aims at assessing the effect of the next-generation broiler housing on broilers' health and welfare and on their gut microbiota, both in terms of antimicrobial susceptibility and taxonomic variability according to 16SrRNA PCR-DGGE method.