

Research project IZS VE 04/12

Effect of Ag nanoparticles in controlling salmonella in poultry and clinical and food safety insights

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Salmonellosis is of major public health concern and a huge amount of resources are invested in decreasing this foodborne disease incidence through a farm to fork approach with particular emphasis on the application of control measures at farm level.

The objective of this project is to evaluate the effectiveness as antimicrobials of different levels of silver nanoparticles (AgNPs) administered by drinking water in the control of Salmonella infection in laying hens. The potential silver accumulation in chicken edible parts and eggs will be estimated for the potential impact on the consumers' health as well, and clinical signs of toxic effects towards animals will be evaluated at macroscopic level.

According to literature, metal NPs behaviour can be hardly predicted as it could be influenced by their physical and chemical characteristics as well as by experimental conditions; for this purpose we will test the potentiality of a computational methodology based on machine learning techniques. This approach will be evaluated for its feasibility within nanotoxicological studies.