Research program IZS VE 04/13

Assessment of the relationship between chickens' gut microbiota and Campylobacter infection dynamic to promote new control strategies at farm level

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Campylobacter is the most important foodborne zoonotic agent in EU with chicken being overwhelmingly themost important reservoir for human infection. Control measures at farm level which have been successfully applied to combat other pathogens such as Salmonella, i.e. biosecurity or vaccination, do not appear to be equally effective or available to reduce *Campylobacter* prevalence. This project seeks to better understand the processes that occur during the early development of chickens leading to their colonisation by *Campylobacter*.

Aim of the project is to accurately determine when broiler flocks first become *Campylobacter*-positive and to investigate the role in the gut colonization process of changes in gut microbiota and gut architecture. By determining the reasons for time-depending susceptibility to this major zoonotic pathogen, farm-based control measures that will have the potential to reduce levels of *Campylobacter* in poultry could be identified. The project is in partnership with one of the biggest integrated commercial broiler chicken production companies in Italy thus the beneficial impacts of this work could quickly be transferred to stakeholders.