Filip Van Immerseel

Curriculum

Filip Van Immerseel es Máster en Ciencias de Bioingeniería (1999) y Máster en Ciencias de Animales de Laboratorio (2004) y recibió un doctorado en Ciencias Médicas Veterinarias en 2004, estudiando los desencadenantes ambientales en el intestino que influyen en la invasión de Salmonella. Después de un período de posdoctorado, fue nombrado Profesor de Investigación por la Universidad de Gante en 2008. Actualmente es Profesor Titular en el Departamento de Patobiología, Farmacología y Medicina Zoológica de la Facultad de Medicina Veterinaria de la Universidad de Gante en Bélgica y es director de un grupo de investigación que estudia las interacciones huésped-bacteria en el intestino. Filip Van Immerseel tiene actualmente más de 230 artículos científicos en revistas internacionales revisadas por pares, ha escrito capítulos de libros y editado libros sobre Salmonella y Clostridium perfringens y es un conocido orador en eventos internacionales. Es editor de la revista Avian Pathology y está involucrado en muchas redes internacionales de investigación colaborativa, tiene una docena de patentes y ha otorgado licencias de múltiples soluciones de salud intestinal a empresas. El enfoque general siempre es estudiar las interacciones huésped-patógeno o huésped-bacteria y recopilar datos científicos sobre los mecanismos de a) la patogenia de las enfermedades o b) los efectos protectores de las cepas bacterianas y los metabolitos bacterianos en la homeostasis intestinal. Estos datos se pueden usar para el desarrollo racional de medidas

Resumen de la ponencia

Control of Salmonella infantis: a complicated matter

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Salmonella has been and still is an important foodborne zoonotic agent, although the prevalence of human infections has declined significantly over the last decade worldwide. The main serotypes associated with human infections are Enteritidis and Typhimurium, the former mainly originating from eggs, the latter originating from porcine and poultry meat, amongst other sources. The last decadeb other serotypes have emerged regionally and globally. The global increase in Salmonella Infantis has caused concerns, as specific clonal populations that are highly antimicrobial resistant and carry specific plasmid-encoded virulence factors have emerged worldwide in the broiler population.

This serotype has been the major one isolated from broiler meat and on broiler farms, to about 50% of all isolates. Although this has not yet caused a steep increase in human food poisoning cases, Salmonella Infantis now became the third most important human food poisoning serotype.

Controlling Salmonella Infantis relies on multiple strategies, the most important one being optimal biosecurity to reduce entry of the pathogen on farms and elimination on the poultry premises, including slaughterhouse hygienic measures. This seems to be very difficult to achieve, as Salmonella Infantis is highly persistent on positive farms, likely because of biofilm formation and its high resistance against environmental stressors. Breeder flocks are sometimes found positive and Salmonella vaccination strategies can aid in reducing incidence. Data show that live Salmonella Enteritidis and Typhimurium vaccines are highly cross-protective against intestinal colonization with Salmonella Infantis. With regard to dietary additives to reduce caecal colonization and spread in broilers, some strategies that target the microbiota can have merit, including the ones that increase the abundance of butyric acid producing fermentative anaerobes. Indeed, colonization with Salmonella and colonization with butyrate producing anaerobes are negatively correlated with each other, and increasing colonization with butyrate formers reduces Salmonella colonization because butyrate reduces Salmonella entry into epithelial cells, a prerequisite for colonization. A variety of dietary additives, including acids, pro- and prebiotics can be of value, although they will not eliminate the pathogen. In conclusion, a multitude of strategies are needed to reduce Salmonella Infantis, including biosecurity measures, vaccination of breeders, and dietary additives. Elimination of the pathogen from the broiler production is however complicated and difficult.