Animal Science Seminar Series

When: Tuesday 24th March, 12:00 – 1:00 pm

Where: Wright Lecture Theatre

POULTRY INTESTINAL HEALTH, PATHOGEN CONTROL WITH PROBIOTICS AND ORGANIC ALTERNATIVES TO AGPs

Associate Professor Dragana Stanley

Central Queensland University

Gut health is important to the health and productivity of agricultural animals. The microbial populations that inhabit the gastrointestinal tract (GIT) play a major role in the establishment and maintenance of a healthy gut and immune system. Gut microbiota helps digest food, produce health promoting metabolites, regulates and primes the immune system, controls fat storage and obesity, produces hormones and regulates some brain functions. Outnumbering host cells 10 fold, intestinal bacteria represent an important organ which has a beneficial influence on host health. In addition to a number of benefits it provides to the host, intestinal microbiota is also a major source of pathogens. Intestinal microbial communities in chickens assume a near-stable state within the week which leaves a very small window for permanent microbiota remodelling. It is the first colonisers that determine the fate of microbial community in humans and birds alike, and after the microbiota has matured there are very small odds for permanent modification as stable community resists change. This presentation will cover outcomes from the microbiota manipulation experiments aiming to permanently modify intestinal microbiota at hatch or during the first week for perpetual health benefits. The use of in-feed antibiotic growth which the host-microbiota promoters (AGPs) is one way in interaction has been manipulated. AGPs have been used to control pathogens and improve productivity. A rapid increase in the volume of free range and organic agricultural products is also driving the need in the Australian industry for efficient natural alternatives to the use of antibiotics. This has critical implications for issues of national concern such as food security, the economy, bio-security, health and wellbeing of the population who consume agricultural animals. We will also present the data on microbiota manipulation using natural AGP alternatives.

Associate Professor Dragana Stanley from Central Queensland University is an ARC fellow in poultry research. Dr Stanley is one of Australia's highest contributors to the field of poultry intestinal microbiota, however she is also well known in human microbiota and immunological research. Based on Scopus and SciVal benchmarking feature, 58.8% of all of her manuscripts are in world's top 10% best journals and 57.1% of her manuscripts belong to top 10% most cited publications in the world. Dr Stanley is author of 4 Nature publications and first author on Nature Medicine manuscript investigating role of bacterial translocation in post stoke pneumonia.

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