

2nd International Probiotics, Nutrition & Microbiome Conference

October 10-11, 2018 Amsterdam, Netherlands

Probiotics and its Use with Antibiotics in Improving Animal Performance, Feed Efficiency and Disease Prevention

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Improvements in feed utilization, animal production and health, and animal food safety are the goals of rumen microbial studies. These goals may be achieved by facilitating desirable fermentation, minimizing ruminal disorders, and excluding pathogens. One approach that has been widely investigated is the application of direct-fed microbial (DFM) preparations in order to promote digestion and intestinal hygiene, enhance animal performance and reduce usage of antibiotics. Probiotics are defined as live microorganisms which can confer a health benefit for the host when administered in appropriate quantity. One of the most common explanations for improved animal health when ruminants are fed a DFM suggests that beneficial microbes compete with potential pathogens and prevent their establishment. Testing DFM supplementation produced variable and inconsistent results so far. One main point to explain this is the diversity of DFM origin. Several biotic factors such as the strain of yeast, bacteria, fungi, enzymes and its viability, nature of the diet, animal type and its physiological status and level of performance may play considerable role in this regard. Also some DFM are designed for one-time dosing while other products are designed for feeding on a daily basis. Premixes of active substances and compound feeds contain many substances which must be checked with one another for compatibility. The stability of the probiotics used and their availability and efficacy in the animal must be ensured. Since active antibiotic substances in particular inhibit microorganisms, the question arises whether they reduce the activity of probiotics. At first glance it therefore may seem contradictory to put probiotics and antibiotics into a feed together. However, studies indicate that positive combinatory effects had been achieved though extensive works still need to be done to ascertain the results. This review focuses on some of the major factors affecting the use of probiotics and other substances.

Biography:

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