

## Keynote Speech

### The role of probiotics in the poultry industry

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#### Abstract

The poultry industry has become an important economic activity in many countries. In large-scale rearing facilities, where poultry are exposed to stressful conditions, problems related to diseases and deterioration of environmental conditions often occur and result in serious economic losses. Prevention and control of diseases have led during recent decades to a substantial increase in the use of veterinary medicines. However, the utility of antimicrobial agents as a preventive measure has been questioned, given extensive documentation of the evolution of antimicrobial resistance among pathogenic bacteria. So, the possibility of antibiotics ceasing to be used as growth stimulants for poultry and the concern about the side-effects of their use as therapeutic agents has produced a climate in which both consumer and manufacturer are looking for alternatives. Probiotics are being considered to fill this gap and already some farmers are using them in preference to antibiotics. Over the years the word probiotic has been used in several different ways. It was originally used to describe substances produced by one protozoan which stimulated by another, but it was later used to describe animal feed supplements which had a beneficial effect on the host animal by affecting its gut flora. The main sources of probiotics in poultry are strains of microorganisms such as *Lactobacillus*, *Enterococcus* and *Bacillus* and fermented dairy products like yoghurt, cultured buttermilk and cheese. A good probiotic is characterized by its ability to exert a beneficial effect on a host, resistance to low pH and bile salts, adhere and colonizing of the intestinal epithelium, non-pathogenic to host and produces antimicrobial substances towards pathogens. It also boosts immune responses, improves the growth performance and productivity of poultry and increases the quality of meat and egg. This Keynote will discuss the principles, mechanisms of action and criteria for selection of probiotics, and to summarize their applications in the poultry industry.

**Keywords:** Disease control, Immune response, Growth performance, Poultry, Probiotics

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