

The Role of Probiotics in the Poultry Industry

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For more than 50 years, antibiotics have been used in poultry industry extensively both as growth promoters and therapeutic agents to prevent or control poultry diseases, to promote growth and feed efficiency, to enhance poultry production as well as to treat sick animals before they were banned in many countries due to the fear of resistance development in bacterial populations to antibiotics in exposed individuals, presence of antibiotic residues in poultry products intended for human consumption such as meat and eggs and the increasing emergent consumer demand for products free from antibiotic residues. With increasing concern about antibiotic resistance and the ban on sub-therapeutic use of antibiotics in Europe and the US, it has become important in poultry production to find alternative products that could replace antibiotics, without any loss of productivity/product quality or negative influence on health. An alternative approach is the use of probiotics which can be defined as “live microorganisms which, when administered in adequate amounts, confer a health benefit on the host by improving its intestinal balance”. Among probiotics used in poultry production, although lactic acid bacteria (LAB) such as *Bifidobacterium*, *Lactobacillus*, *Lactococcus*, *Enterococcus* and *Pediococcus* species are the ones most commonly used; *Bacillus*, *E. coli*, *Streptococcus* species, a range of yeast species such as *Saccharomyces* and non-defined mixed cultures have also been used. As compared to antibiotics, probiotics do not leave residues in the poultry products, which may have serious health implications for consumers. Besides, the addition of probiotics provides competition to pathogenic organism for intestinal colonizing sites, replaces enteric pathogens by means of competitive exclusion in the poultry intestinal tract, thereby increase the intestinal health of poultry by reducing pathogenic infections and protect the host against pathogens, which is relevant in promoting animal growth as well as improving the productivity (performance of poultry) and immunity of the host.

Biography:

Ozlem Osmanagaoglu graduated from the Biology Department of Middle East Technical University in Turkey. Later, she completed her master and PhD program on genetics of Lactic Acid Bacteria at the Biotechnology Institute of METU. During her doctoral and post doctoral periods, she worked under NATO grant and scholarship in the University of Wyoming, USA. Presently, she is a member of the Biology Department within the Science Faculty of Ankara University in Turkey where she has established Microbial Genetics Laboratory with a young productive research team. Her work has focused on bacteriocins, natural antimicrobial peptides, produced by Lactic Acid Bacteria, their molecular typing and probiotics.