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Feeding animal or microflora: the nutritional dilemma

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The microflora of the digestive tract of poultry is still incompletely known. But the withdrawal of the antibiotic growth promotants (AGPs) has resulted in an increased interest in the role of the microflora of the digestive tract and its control in birds. It is necessary to gain a better knowledge of the microflora of the digestive tract and its effect to be able to propose effective AGP alternatives, but also to better understand how works the whole digestive system. The current knowledge on the digestive flora shows a strong interaction between the microbial populations and their host. Particularly, there is a competition for nutrients, and depending on the diet composition and presentation, the growth of some bacteria or the growth of the animal is favoured. Moreover, among the microbial population, beneficial bacteria are continuously competing with pathogens through competitive exclusion. Thus, nutrition offers an array of approaches to influence different bacterial control mechanisms that play a role in competitive exclusion, including specific diet formulations or the use of feed additives. The main objectives of these approaches are to enhance the performance of the birds as well as to improve their health status.