

The Economic Impact Analysis of the Use of Probiotics and Prebiotics in Broiler Feed

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Abstract : Probiotics and prebiotics claimed to serve as effective alternatives to antibiotics in the poultry. This study aims to investigate the effect of different probiotics and prebiotics on the economic impact analysis of the use of probiotics and prebiotics in broiler feed. The study involved four broiler cycles, two during winter and two during summer. In the first two cycles (summer and winter), different types of prebiotics and probiotics were used. The probiotics were *Bacillus coagulans* (1 g/kg dried culture) and *Lactobacillus* (1 g/kg dried culture of 12 commercial strains), and prebiotics included fructo-oligosaccharides (FOS) (5 g/kg) and mannan-oligosaccharide (MOS) derived from *Saccharomyces cerevisiae* (5 g/kg). Based on the results obtained, the best treatment was chosen to be FOS, from which different ratios were used in the last two cycles during winter and summer. The levels of FOS chosen were 0.3, 0.5, and 0.7% of the diet. From an economic point of view, it was generally concluded that in all dietary treatments, food was consumed less in cycle 1 than in cycle 2, the total body weight gain was more in cycle 1 than cycle 2, and the average feed efficiency was less in cycle 1 than cycle 2. This indicates that the weather condition affected better in cycle 1. Also, there were very small differences between the dietary treatments in each cycle. In cycle 1, the best total feed consumption was for the FOS treatment, the highest total body weight gain and average feed efficiency were for *B. coagulans*. In cycle 2, all performance was better in FOS treatment. FOS significantly reduced the *Salmonella* sp. counts in the intestine, where the environment was driven towards acidity. FOS was the best on the average taste panel study of the produced meat. Accordingly, FOS prebiotic was chosen to be the best treatment to be used in cycles 3 and 4. The economic impact analysis generally revealed that there were no big differences between the treatments in all of the studied indicators, but there was a difference between the cycles.

Keywords : antibiotic, economic impact, prebiotic, probiotic, broiler

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