PROTEASE FOR BROILERS CHICKENS: BENEFITS ON PERFORMANCE AND INTESTINAL HEALTH

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Protease enzymes can improve dietary protein utilization. The objective of this study was to evaluate the effects of a protease on performance and intestinal health of broilers. Cobb chicks (n=392; 1-42d) were divided in 4 treatments. There were 2 feed formulations: a standard diet (STD) and a diet with 6% reduction in crude protein and main digestible amino acids (Low-CP/AA) that were either supplemented (+P) or not (-P) with protease (Jefo Protease at 125 g/t). Performance was evaluated by feeding phase. At day 28, samples of ileum were analyzed by a morphometric index for histological alterations (I See Inside Scoring System - ISI®). No differences between the treatments were observed from 1 to 7d. For other phases, birds fed the Low-CP/AA-P were lighter and/or had poorer feed conversion ratio (FCR; P<0.05). The addition of the protease on the Low-CP/AA affected positively body weight gain (BWG) and FCR (P<0.05) and promoted a performance similar to the STD-P. At 42d, the birds fed the STD+P were the heaviest (124g difference to STD-P, P=0.1) and presented the same FCR of the STD-P and Low-CP/AA+P groups with a FCR 13 points lower (P<0.001) than the Low-CP/AA-P group. The birds supplemented with the protease presented the best ISI® morphological index (P=0.06) mainly as a result of the lower number of alterations regarding lamina propria, epithelial thickness and enterocytes proliferation. In conclusion, the protease improved performance and intestinal health indicators of broiler chickens when added on top of a standard diet or with a low-density diet.

Key Word: protease