

trial report summary

Effects of protease on weight, feed conversion and breast yield of broilers.

Wang J. J. et al., 2006, J. Appl. Poult. Res. 15: 544-550

Introduction

The goal of this study was to determine the effect of a protease (CIBENZA® DP100) on performance and carcass yield of broilers fed different levels of protein. The maximum use of the protein source in accordance of the utilization (digestibility) of the animals, allowing cost reduction per kilogram of chicken produced.

Materials and Methods

5,088 day old chicks were allotted to 48 pens in a randomized block design. The treatments were:

- 1) BPAA: low protein and amino acids (95% of commercial levels)
- 2) BPAA + protease: low protein and amino acids + protease
- 3) MPAA: average protein and amino acid (100% of commercial levels)
- 4) Protease MPAA + Protease: average protein and amino acid + protease.
- 5) APAA: high protein and amino acid (105% of commercial levels)
- 6) APAA + Protease: high protein and amino acids + protease.

The thermostable protease used, produced from the *Bacillus licheniformis* PWD-1 strain, was added at a rate of 300,000 units of activity/kg feed. Animals were fed a pelleted four-phase diet. Performance and carcass yield were evaluated and the results were submitted for analysis of variance (GLM ANOVA) and subsequently to Tukey test ($P < 0.05$).

Results and Discussion

According to Figure 1, the protease was effective in recovering the fraction of performance lost due to a 10 percent drop in protein and amino acids in the diet.

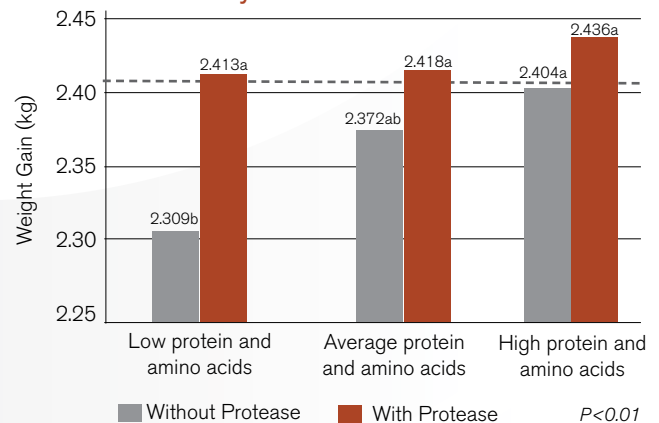


Key Findings

The use of dietary CIBENZA® DP100:

- Reduces feed cost
- Maintains animal performance
- Improves housing efficiency
- Maintains intestinal integrity and immune response

Figure 1. Weight Gain of Chickens from 1 to 48 Days



The same trend was observed for feed conversion (data not shown). More efficient feed conversion allows for higher carcass and breast meat yield at time of harvest (Figure 2). There was also a numerical increase in diets with low and medium protein levels. This indicates that the effects of enzyme extends beyond the improvement in digestibility and nutritional intake, and it may also result in benefits related to improved intestinal health and immune response.

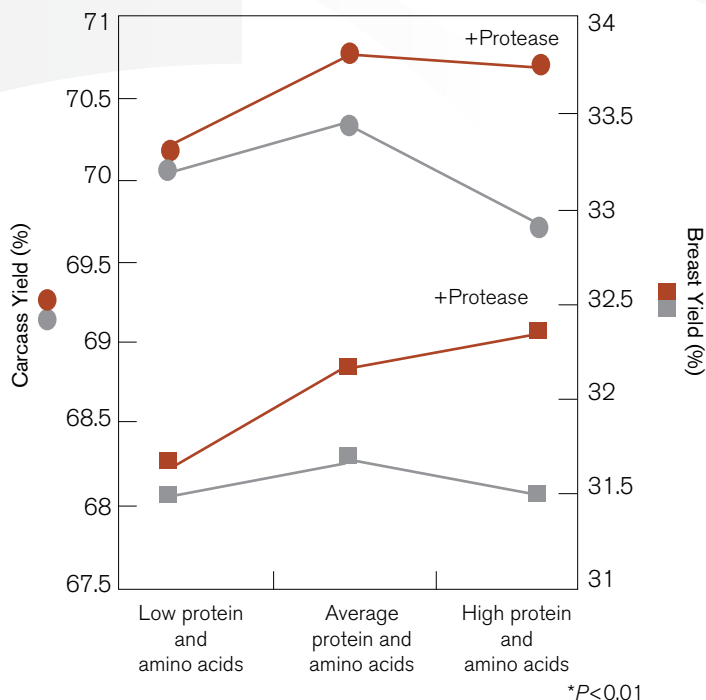
Conclusion

The protease was effective in increasing the bioavailability of amino acids in the diet, recovering the fraction of performance lost due to a reduction of 10 percent crude protein and amino acids. This, in turn, led to optimized performance of the broilers.

***Note:** Adapted from “Beneficial Effects of Versazyme the Keratinase Feed Additive, on Body Weight, Feed Conversion, and Breast Yield of Broiler Chickens.”

CIBENZA® DP100 is the new brand name Versazyme.

Figure 2. Carcass Yield and Breast Meat Yield of Broilers



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