

Strategic Selection of Exogenous Enzymes for Corn/soy-based Poultry Diets

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Abstract :

The usefulness of carbohydrases in corn/soy-based diets for poultry is still unclear and all the more so when phytase is present in the feed. Though there are many interacting factors involved in dictating the measured response to an exogenous enzyme the most influential is the nutritional value of the diet to which it is added. The inherent ileal digestibility of starch, protein and lipid in a corn/soy-based diet varies from around 70% to over 95% and this variance explains up to 90% of the variance in enzyme response. An appreciation for the concentration of undigested starch, protein and lipid in any given diet is an important starting point for the prediction of the effect of the enzyme on digestible energy and amino acids. Instructively, around 15-25% of this undigested fraction can be rendered digestible with the addition of xylanase and so the magnitude of the response is largely explained by the quantity of this undigested portion. As phytase improves the digestibility of the diet, effectively reducing the concentration of undigested amino acids and energy it can be predicted that xylanase will deliver less value in a diet which has already been improved with phytase. It is the purpose of the current paper to describe these effects and the implications for the strategic selection of enzymes for corn/soy-based poultry diets.

Key Word :

digestion, nutrition, phytase, poultry, xylanase

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