

USING ENZYMES TO FREE MORE PROTEIN

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In many markets feed accounts for nearly 70% of live production costs for broilers. Maximising the nutritive value of feed is a crucial part of satisfying birds' dietary requirements while maximising growth performance and producer profitability. This is especially true for protein, which plays a vital role in helping birds realise their genetic growth potential. Even when high quality protein meals such as soybean meal are fed, protein is still not 100% digested by the animal. Between 15-20% of dietary protein escapes digestion by the animal's own endogenous proteases, passes through the gastrointestinal (GI) tract and is excreted. This undigested protein poses several problems:

- It represents an economic loss for producers paying for protein and consequently amino acids that are not utilised for growth.
 - High levels of protein in the latter regions of the GI tract is associated with proliferation of non-beneficial bacteria which can impact gut health.
 - Lower protein digestibility means higher protein excretion resulting in increased nitrogen in litter; bacteria in the litter can transform nitrogen into ammonia increasing pollution.
- By applying an exogenous protease in feed, producers can reduce dietary

crude protein while still meeting the birds' amino acid requirements and maintaining animal performance. This will reduce the cost of the diet and at the same time alleviate some of the negative effects of undigested protein. Axtra PRO is a broad-spectrum protease active at a wide range of pH with a complementary mode of action to the endogenous proteases. It has the power to deliver more digestible amino acids from various feed ingredients, improving animal performance in a lower protein/amino acid diet (Fig. 1). Axtra PRO has demonstrated effects on different feed ingredients (Fig. 2), enabling utilisation of industrial by-products and alternative protein meals outside of soybean meal, which are often less costly, but are limited in their commercial inclusion by lower protein digestibility. With improved levels of protein digestibility some of these alternative ingredients are more attractive in least cost formulation. The addition of Axtra PRO increases the efficiency of animal production by maximising protein utilisation and reducing waste. Producers can get more digestible amino acids from their feed, greater flexibility in ingredient selection, increased control of emissions, and maximum feed cost savings through nutritional research.

Fig. 1. The addition of Axtra PRO to a negative control diet deficient in digestible amino acids showed a decrease in 42 day FCR in broilers and an increase in ADG to a level comparable to the PC diet. The digestible amino acid levels in the NC diet were on average ~3% lower than in the PC diet and also reduced by ~40kcal/kg (Means with different superscript are significantly different, P<0.05).

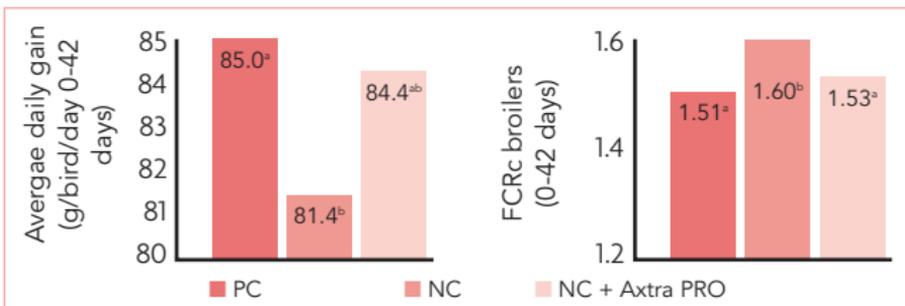


Fig. 2. The addition of Axtra PRO to semi-purified diets of soybean meal, meat and bone meal, rapeseed meal and feather meal in all cases resulted in an increase in protein digestibility (*indicates a significant difference to its relative control group, P < 0.05).

