

**EFFECT OF SUPPLEMENTAL EXOGENOUS  
PROTEASE ENZYME IN DIET WITH REDUCED  
LEVELS OF SOYBEAN MEAL (SBM) ON FEED  
CONVERSION RATIO (FCR) OF BROILERS**

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## ABSTRACT

The use of enzymes in animal feed is great importance. Consistent increase in the price of feed ingredients has been a major constraint in most of the developing countries. Soybean meal is the main protein-rich ingredient used in poultry diets. But main problem is the high cost of soybean meal. Typically, for conventional feed ingredients, amino acid digestibility averages only 80 to 90 per cent. This means 10 to 20 per cent of all ingested protein is not digested. But protease enzyme improve the digestibility of amino acids in a wide range of natural feed ingredients, allowing lower protein diets to be formulated without loss in animal performance.

The study was carried out at the New Bernards Animal Feeds (Pvt) Ltd at Udubaddawa , Sri Lanka. The experiment was conducted with 630 *hubbard flex* broiler chickens from day old to 38 days of age to study the effect of supplemental exogenous protease enzyme in diet with reduced level of SBM on FCR of broilers and flexibility to low cost diet formulation. Broiler chickens were divided into three groups each consisting of 210 birds and assigned to three dietary treatments. Each diet was fed to 210 birds with three replications and 70 birds were randomly placed in each replication. The starter diet in control diet and treatment 1 (diet with astrozyne enzyme) were contained 21.5 % CP and finisher had 19.25% CP. The starter diet in treatment 2 (diet with protease enzyme) contained 20% CP and finisher had 17.75% CP.

According to the results, body weight of the chicks fed with enzyme supplement diet has become significantly different from the control. The body weight showed a significant difference ( $p < 0.05$ ) with protease enzyme supplement. Therefore exogenous protease enzyme was responsible to increase the live weight of broilers on similar level of dietary nutrient concentration. FCR was higher in control group than enzyme supplemented group. The FCR of the chicks showed a significant difference ( $p < 0.05$ ) with protease enzyme supplement. Therefore feed conversion of broilers, fed on diet with protease enzyme was better than control group. Applied enzyme preparation had no effect on mortality of chickens in the trial. The lowest mortality was showed in treatment 1, but in all groups it was below 5% (Table 5.1), which is considered as technologically acceptable.