

Evaluation of Amino Acid Digestibility and Apparent Metabolizable Energy of linPRO® in Laying Hens

Background:

The nutritional value of dietary proteins for laying hen can vary significantly due to several factors including ingredients and processing parameters. Currently, ileal digestibility values are considered the preferred method for estimating amino acid availability for poultry. Therefore, to improve the accuracy of nutritional data related to O&T Farms Ltd.'s linPRO™ product, ileal digestibility and Apparent Metabolizable Energy (AME) values -specific to laying hens- was determined.

Methodology:

A total of 144 Lohmann LSL hens were used within 4 replicated care units at the University of Saskatchewan's Poultry Research Facilities. Hens were fed either a control diet or a treatment diet containing 20% linPRO for a 28 day period. On Day 27, fecal samples were collected from each replicate unit and dried prior to analysis. On Day 28, all birds were euthanized with T-61 solution prior to sampling. The ileum of each was removed and the contents within each replicate. The AMEn and amino acid digestibility was extrapolated from a regression analysis from the maximum inclusion level of the test ingredient, predicting the AMEn and digestibility if the ingredient were 100% of the diet. Data was corrected for moisture content and is reported on an as fed basis.

Results:

Apparent ileal digestibility (%) content, and Apparent Metabolizable Energy (AME; kcal/kg) of LinPro in laying hens.

	LinPro
Taurine	20
Hydroxyproline	28
Aspartic acid	63
Threonine	63
Serine	36
Glutamic acid	62
Proline	51
Glycine	66
Alanine	69
Cysteine	69
Valine	66
Methionine	84
Isoleucine	71
Leucine	73
Tyrosine	74
Phenylalanine	51
Hydroxylysine	52
Lysine	70
Histidine	45
Arginine	78
Tryptophan	78
AME	3820
AME _n	3664

Conclusion:

Results of the study support the value of linPRO™ in laying hen diets as good source of digestible amino acids, and energy. The data obtained in this study support previous research that shows the benefits of extrusion on nutrient digestibility and energy availability, and offers accurate dietary information for nutritional evaluation of linPRO™ in laying hen diets.