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Apparent Metabolizable Energy and Amino Acid Composition of Soon Soon High Efficiency Dehulled Soybean Meal

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Introduction

In the poultry industry, feed represents between 70 - 75% of the total cost of production. And, in a typical broiler feed, the major portion of the feed cost is associated with meeting the energy and amino acids needs of the birds.

Soybean meal is the major protein source used in animals feeds. It contributes approximately 70% of amino acids and 25% of energy to a typical corn-soy diet. Therefore a consistent high quality soybean meal is critical for the production of a high performance feed at optimum cost.

Soon Soon High Efficiency (SSHE) dehulled soybean meal is a revolutionary product produced from a new processing method. This product has higher nutritional availability in terms of apparent metabolizable energy (AME) and protein (amino acids) efficiency ratio (PER). It also possesses lower anti nutritional factors.

A comparison of AME of this SSHE dehulled soybean meal and soybean meals of other origins was carried out at the Bangkok Animal Research Center Co., Ltd. (BARC), a subsidiary of Ajinomoto Thailand. Results (Table 1) showed that on the average the AME of SSHE dehulled soybean meal was 13.9% and 7.7% higher than Argentine dehulled SBM and US dehulled SBM, respectively.

Similarly, SSHE dehulled soybean meal tested in several laboratories also showed higher levels of amino acids (Table 2). Bioassay of protein quality also showed that, on the average, PER (weight gained per unit protein intake) value of SSHE dehulled soybean meal was 24.7%, 22.2% and 49.9% higher than US dehulled, Argentine dehulled and Brazilian dehulled, respectively. This suggests that SSHE dehulled SBM possesses higher protein / amino acids availability than other soybean meals.

Results

AME Value (average of 3 tests)

On dry matter basis　　= 12.35 MJ/Kg or 2952 Kcal/Kg

At 12.0% moisture basis　= 10.87 MJ/Kg or 2598 Kcal/Kg

Amino Acid Profile (average of 3 tests) :

Lysine, %	3.00
Methionine, %	0.66
M + C, %	1.33
Threonine, %	1.87
Tryptophan, %	0.68
Valine, %	2.31
Isoleucine, %	2.22
Leucine, %	3.80
Phenylalanine, %	2.45
Histidine, %	1.31
Arginine, %	3.67

Appendix

Table 1: AME of Soon Soon High Efficiency Dehulled soybean meal compared to other origins as tested by Bangkok Animal Research Center/ Ajinomoto, Thailand.

Date of Test / Origins	AME Dry Matter, MJ/Kg (Kcal/Kg)			
	Test 1	Test 2	Test 3	Average
	November 2004	May 2005	July 2005	
Soon Soon	11.67 (2789)	11.95 (2856)	13.44 (3212)	12.35 (2952)
US	11.46 (2740)	11.22 (2681)	11.71 (2799)	11.46 (2740)
Argentine	10.54 (2520)	11.13 (2661)	-	10.84 (2591)

Source : Test 1 and test 2, Soon Soon unpublished data
Test 3, ASA unpublished data

Table 2 : Protein and Amino Acid content of Soon Soon High Efficiency Dehulled soybean meal as tested by various laboratories.

Tested by / AA profile	Sample 1	Sample 2	Sample 3	Average
	Eurofins Lab, USA Sept, 2005	Carat Lab/ Adisseo July, 2005	Ajinomoto, Thailand Feb, 2005	
Lysine	3.03	2.94	3.03	3.00
Methionine	0.66	0.63	0.68	0.66
M + C	1.31	1.31	1.36	1.33
Threonine	1.77	1.87	1.97	1.87
Tryptophan	0.69	0.68	0.66	0.68
Valine	2.38	2.38	2.17	2.31
Isoleucine	2.27	2.30	2.10	2.22
Leucine	3.78	3.78	3.83	3.80
Phenylalanine	2.48	2.42	2.44	2.45
Histidine	1.26	1.26	1.40	1.31
Arginine	3.69	3.70	3.62	3.67

Table 3: Comparison of PER value of Soon Soon High Efficiency dehulled SBM with other soybean meals.

Date of Test / Origins	PER		
	Test 1	Test 2	Average
	2003	2004	
Soon Soon	2.491	2.642	2.566
US	1.779	2.337	2.058
Argentine	1.842	2.359	2.100
Brazilian	1.591	1.834	1.712

Source : ASA unpublished data.