SOON SOON OILMILLS
APPLICATION BULLETIN

Issue No. AB05-06/2005

Use of Soon Soon High Efficiency Dehulled Soybean Meal In Poultry Feeding

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Introduction

Soon Soon High Efficiency (SSHE) Dehulled Soybean Meal is a revolutionary product produced from a new processing method. This product has higher nutritional availability yet possess lower anti nutritional factors. It is produced with high quality soybeans under stringent quality control which includes mycotoxin, pesticide and heavy metals screening to ensure the safety of the final product. Freshness is ensured by minimizing holding time. Together these ensure less variation of quality resulting in a product of consistent superior performance.

SSHE Dehulled Soybean Meal can be used to improve the performance of poultry feeds. Testing by varies independent institutions and at farm feeding trials consistently show that SSHE Dehulled Soybean Meal performs much better than other sources of dehulled soybean meal.

Product Specification

Moisture	% max	13.0
Protein(Nitrogen Combustion)	% min	47.5
Protein (Kjeldhal)	% min	46.5
Crude Fiber	% max	3.5
Urease Activity	Δ pH	< 0.2

Benefits of using SSHE Dehulled Soybean Meal in poultry feeds

1) **Higher Apparent Metabolizable Energy (AME) compared to other sources of soybean meal**.

Studies done by University of Sydney has determined that SSHE Dehulled Soybean Meal can increased the AME of final feed by 1.3% when compared to US soybean meal (Table 1). Based on 25% soybean meal inclusion rate, the additional AME is equivalent to 185 Kcal/kg (0.77 MJ/kg) more energy derived from SSHE Dehulled Soybean Meal. (Selle, 2004)

Table 1: Determination of Apparent Metabolizable Energy poultry(AME) comparing Soon Soon High Efficiency (SSHE) dehulled soybean meal to US dehulled soybean meal

Diets	AME MJ/kg DM (Kcal/kg DM)	Extra AME of SBM (at about 25% of feed)
1.US dehulled SBM	14.81 (3540)	
2.SSHE dehulled SBM	15.01(3587)	+ 0.77(185)

A more recent study at Bangkok Animal Research Centre showed that the AMEn of SSHE Dehulled Soybean Meal is 6.0% and 14% higher than US dehulled soybean meal and Argentine dehulled soybean meal respectively. On average the AME of SSHE Dehulled Soybean Meal is 120 Kcal/Kg higher than US soybean meal and 300 Kcal/Kg higher than Argentine dehulled soybean meal. (Figure 1)

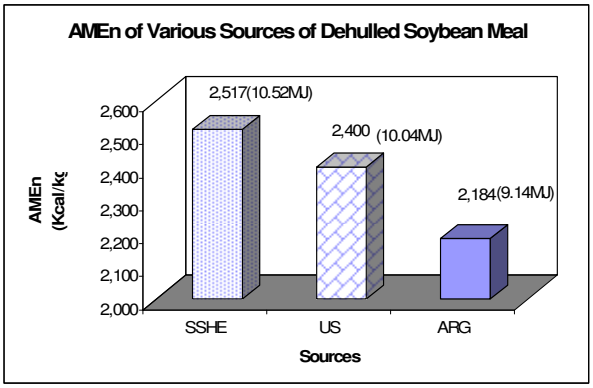


Figure 1: Comparison of AMEn (DM) for various sources of dehulled soybean meal. (Soon Soon unpublished data, 2004)

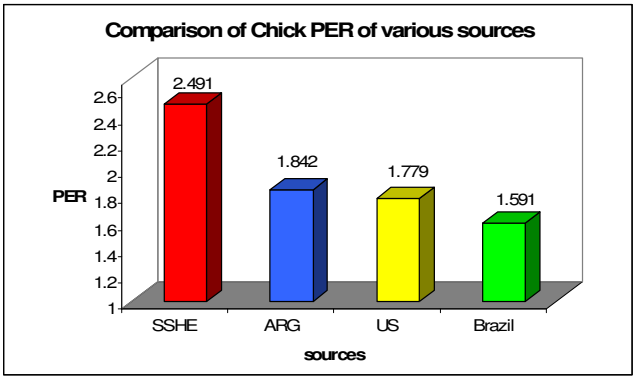


Figure 2 :Comparison of Chick PER test for various sources of dehulled soybean meals. (ASA Robert Swick unpublished data, 2004)

2) Higher bio-availability of Protein

Measurement of bio-availability of protein through Chick Protein Efficiency Ratio (PER) study showed that the PER of SSHE Dehulled Soybean Meal was 35-56% better than other sources of dehulled soybean meal. From results of the PER trial, it can be safely stipulated that the protein of SSHE Dehulled Soybean Meal is at least 5 to 10% more available than other sources of dehulled soybean meal. (Figure 2)

3) Create synergistic effect with SSHE Dehulled Full Fat Soyabean Meal.

SSHE Dehulled Soybean Meal can be used to complement the positive effects of SSHE Dehulled Full Fat Soybean Meal. When used together with a 10% inclusion of SSHE Dehulled Full Fat Soybean Meal, it can increase the AME of feed by 5.3%. However, very little additional effect was seen when other sources of dehulled meal were used with SSHE Dehulled Full Fat Soybean Meal. (Selle, 2004). Results are presented in Table 2.

4) Lighter Visceral, More Carcasses Yield.

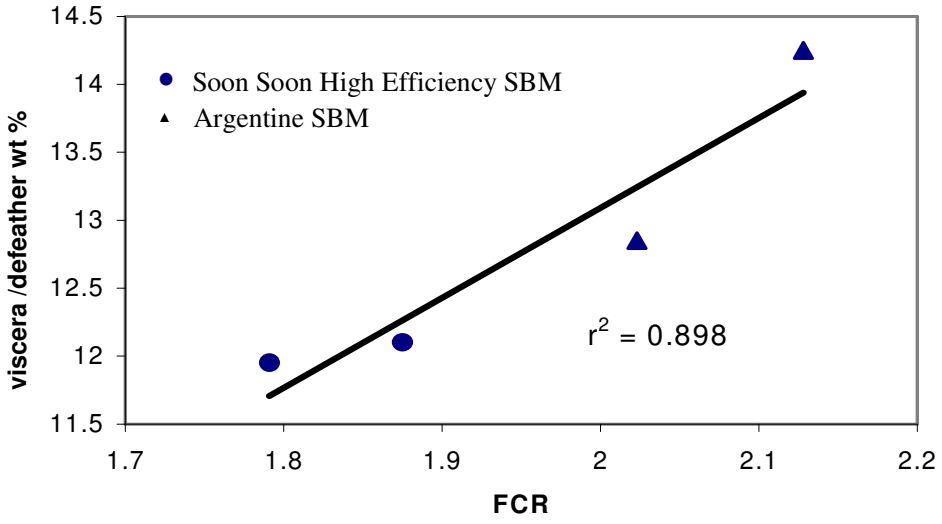
Better quality feed ingredients such as SSHE Dehulled Soybean Meal produces a lighter viscera system, thus giving a better carcass yield. As lighter visceral system is more efficient and requires less nutrients for maintenance, thus freeing more nutrients for growth and reproduction, resulting in a better FCR. Studies showed that the visceral system of broilers using SSHE Dehulled Soybean Meal was on the average of 13% lighter than those using Argentine dehulled soybean meal. (Figure 3)

It is estimated that the 13% lower visceral weight will require 4.3% less nutrients for maintenance therefore an additional 10.75% more nutrients will be available for growth in broiler chicken. Assuming that the viscera system consumes 33% of the available total nutrients and that on the average 40% of total available nutrients is normally used for growth.

Table 2: Comparison of broiler feed AME with and without high efficiency full fat soybean meal

Diets	AME (MJ/kg DM)	AME corrected MJ/kg (Kcal/kg DM)	Extra AME of SBM (at about 25% of feed)
1.US dehulled SBM	14.81	14.81 (3540)	-
2.SSHE dehulled SBM	15.01	15.01 (3587)	+185 (vs US)
3.US + SSHE dehulled full fat SBM	15.24	14.89 (3554)	+15 (vs US)
4.SSHE SBM + Dehulled Full Fat SBM	**16.15**	**15.80 (3776)**	**+ 916 (vs US) + 733 (vs SSHE)**

Figure 3: Effect of using soybean meals of different quality in isocaloric and isonitrogenous corn-soy diets.



How to use SSHE Dehulled Soybean Meal?

Following points can be considered to optimized performance of feeds using SSHE dehulled soybean meal:

1) Use SSHE Dehulled Soybean Meal together with High Efficiency Dehulled Full Fat Soybean Meal.

2) Restrict the use of other processed protein meals such as meat and bone meal, fishmeal, canola meal, cottonseed meal and other soybean meal etc. Total inclusion of other processed protein meal should be kept to the minimum level preferably not exceeding 5%. These processed meals can contain certain anti-nutritional factors as a result of excessive heat treatment and low amino acids availability, especially cystine, lysine and threonine. These anti-nutritional factors will suppress performance and reduce improvements resulting from using SSHE Dehulled Soybean Meal and Full Fat Soybean Meal.

3) Avoid excessive use of fibrous by-product ingredients. Excessive fibrous material intake produces a heavier viscera system. A heavier visceral system is less efficient, more nutrients will be wasted for maintenance, thus less consumed nutrient can be used for growth in broilers and for reproduction in layers resulting in poor FCR.

4) As the available nutrients of SSHE Dehulled Soybean Meal are higher than normal dehulled soybean meal, it is possible to lower the crude protein and ME of finished feed to achieve substantial cost saving. The amount of reduction will be dependent on the original feed formulation. Please feel free to contact our technical service teams as listed below:-

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High Efficiency Dehulled Soybean Meal

Product Code : 3765

Performance Nutrient Matrix

Crude Protein, %	46.5
ME Poultry, Kcal/kg	2450
DE Swine, Kcal/kg	3680
ME Swine, Kcal/kg	3350
NE Swine, Kcal/kg	2576
Lysine, %	2.965
Methionine, %	0.654
M+C, %	1.301
Tryptophan, %	0.664
Threonine, %	1.816
Arginine, %	3.552
Isoleucine, %	2.128
Valine, %	2.238
Crude Fat, %	2.0
Crude Fiber, %	3.5
Calcium, %	0.3
Available Phosphorus, %	0.24
Total Phosphorus, %	0.66
Sodium, %	0.05
Choline, mg/kg	2760
Chloride, mg/kg	0.02
Digestible Lysine,Poultry %	2.698
Digestible Methionine, Poultry %	0.595
Digestible M+C, Poultry %	1.145
Digestible Tryptophan, Poultry %	0.591
Digestible Threonine, Poultry %	1.616
Digestible Arginine, Poultry %	3.268
Digestible Isoleucine, Poultry %	1.958
Digestible Valine, Poultry %	2.037
Digestible Lysine pigs, %	2.668
Digestible Methionine pigs, %	0.601
Digestible M+C pigs,%	1.158
Digestible Tryptophan pigs, %	0.591
Digestible Threonine pigs, %	1.580
Digestible Isoleucine pigs, %	1.915
Digestible Valine pigs, %	1.970
Dry Matter, %	88
Linoleic Acid, %	1.08