

TECHNICAL SERVICE



BULLETIN



DAWE'S LABORATORIES: 3355 N. Arlington Heights Road • Arlington Heights, IL 60004 • (847) 577-2020 • FAX (847) 577-1898

BIOGRO SUPER® - A HIGH QUALITY ALTERNATIVE TO FISHMEAL

Recently, a commercial A.O.A.C. referred laboratory compared **BIOGRO SUPER®** to several samples of fishmeal obtained from Thailand in a series of laboratory tests. Results of these analyses reveal that **BIOGRO SUPER®** is an excellent alternative to Asian fishmeal for incorporation in livestock and poultry feeds.

<u>ITEM</u>	<u>FISHMEAL</u> <u>#1</u>	<u>FISHMEAL</u> <u>#2</u>	<u>FISHMEAL</u> <u>#3</u>	<u>BIOGRO</u> <u>SUPER®</u>
MOISTURE	9.59	9.65	10.96	7.49
PROTEIN, %	57.40	59.90	56.40	57.30
NON PROTEIN NITROGEN, % OF PROTEIN	4.92	8.37	3.22	0.65
TRUE PROTEIN, %	52.48	51.53	53.18	56.65
FAT, %	5.70	4.81	8.30	7.33
SALT, %	2.30	2.60	2.20	1.60
ASH, %	30.20	28.67	28.93	27.95
CALCIUM, %	7.12	7.74	8.43	6.81
PHOSPHORUS, %	2.74	2.90	4.02	2.53

BIOGRO SUPER® contained a similar level of crude protein as the fishmeal samples. However, much less of the protein provided by **BIOGRO SUPER®** was in the form of non-protein nitrogen – up to 92% less than the fishmeal! Although non-protein nitrogen is included in the protein content of these ingredients, it is of no nutritive value to pigs and poultry. Non-protein nitrogen is found at relatively high concentrations in fishmeal that has been improperly processed, or contaminated with chemicals, such as urea. So, **BIOGRO SUPER®** had significantly more true protein than any of the fishmeal samples – protein that is available for the animal's growth, production, and reproduction.

BIOGRO SUPER® also compared favorably with the three fishmeal samples for fat, ash, calcium and phosphorus content. The fishmeals contain greater salt than **BIOGRO SUPER®**. High salt content is undesirable because it can limit the use of fishmeal in the complete feed. The lower salt present in **BIOGRO SUPER®** gives this product an advantage over fishmeal.

Fishmeal is added to the diets of pigs and poultry primarily as a source of amino acids. Therefore, the laboratory also compared the amino acid profile of **BIOGRO SUPER®** to a composite sample of the Asian fishmeals. Again, **BIOGRO SUPER®** proved to be an excellent alternative to fishmeal.

COMPARISON OF AMINO ACID COMPOSITION

<u>AMINO ACID</u>	<u>BIOGRO SUPER®</u>	<u>FISHMEAL</u>
Lysine	4.02%	3.44%
Methionine	1.62%	1.56%
Cystine	0.64%	0.45%
Tryptophan	0.55%	0.48%
Valine	2.99%	1.79%
Arginine	2.85%	3.24%
Aspartic Acid	6.83%	5.92%
Serine	2.54%	2.19%
Glutamic Acid	6.18%	7.32%
Proline	2.86%	2.50%
Glycine	4.28%	3.88%
Threonine	2.06%	2.24%
Alanine	3.60%	3.04%
Isoleucine	1.01%	1.99%
Leucine	5.05%	3.82%
Tyrosine	1.49%	1.34%
Phenylalanine	2.82%	1.85%
Histidine	2.31%	0.85%

BIOGRO SUPER® had greater concentrations of nearly all of these essential amino acids than fishmeal, including many of the key amino acids for pig and poultry diets.

<u>AMINO ACID</u>	<u>PERCENTAGE INCREASE WITH BIOGRO SUPER®</u>
Lysine	16.9
Methionine	3.7
Cystine	42.0
Tryptophan	14.6
Valine	67.0
Arginine	13.7

So, **BIOGRO SUPER®** is an excellent alternative to Asian fishmeal, for use in all pig and poultry feeds. Not only does the nutrient content of **BIOGRO SUPER®** compare favorably to Asian fishmeal, but the UGF content of **BIOGRO SUPER®** exceeds that of fishmeal many times over, thanks to the incorporation of **BIOGRO®** - Dawe's Laboratories, USA's primary fermentation product with proven UGF effectiveness.