

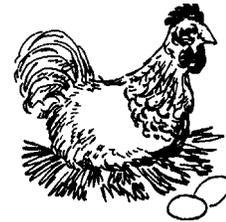


The University of Georgia

Cooperative Extension Service

College of Agricultural and Environmental Sciences / Athens, Georgia 30602-4356

MARCH 2004



COMMERCIAL EGG TIP...

BETTER UNDERSTANDING OF THE NUTRITIONAL VALUE OF DDGS

For the past several years, the Poultry Science Department of the University of Georgia has actively been looking into the possibility of using dried distiller's grains plus solubles (DDGS) in poultry feeds. A number of experiments have indicated that the ingredient can be successfully used in both broiler and layer diets. Whether or not the ingredient becomes attractive to poultry companies depends upon: (a) its cost relative to other ingredients, and (b) its nutrient composition. Of particular interest to nutritionists is a quantification of the metabolizable energy, amino acids, and availability of these amino acids in DDGS.

Metabolizable Energy

There seems no doubt that the "new generation" DDGS has a higher level of metabolizable energy than was seen in the past. This is largely due to the fact that the new DDGS is obtained almost exclusively from ethanol production using corn, whereas previous samples likely were derived from the beverage industry, which uses higher fiber grains in fermentation. Twelve samples of DDGS have been evaluated for metabolizable energy at the University of Georgia, with results ranging from 1195 to 1355 kcal/lb. The average metabolizable energy was 1285. Understandably, samples higher in crude fiber had lower metabolizable energy.

Amino Acids

Three samples of "new generation" DDGS have been evaluated for amino acid composition. In addition, the availability of these amino acids was also determined. Listed below are the five amino acids of most immediate interest to nutritionists, along with average total and available amino acid content.

PUTTING KNOWLEDGE TO WORK

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Amino Acid	Total (%)	Availability Coefficient	Available (%)
Lysine	0.85	0.75	0.64
Methionine	0.56	0.89	0.50
Cystine	0.62	0.75	0.47
Threonine	1.05	0.76	0.80
Arginine	1.25	0.84	1.05

Recent research indicates that darker colored samples of DDGS have markedly lower lysine availability. A comprehensive study to determine the degree of lysine loss has yet to be conducted.
Phosphorus

DDGS has approximately 3 times the total phosphorus content of yellow corn. However, this phosphorus appears to be far more available. Studies conducted at the University of Georgia estimate an availability of between 60 and 68% for the phosphorus in DDGS. This is approximately double the percent availability in corn grain, and presumably reflects a positive effect of fermentation on the formation of digestible forms of phosphorus.

Dozens of DDGS plants have come on-line in the past several years. As might be expected, there exist differences in manufacturing processes between many of these plants, leading to variations in nutrient composition. Those interested in utilizing DDGS in layer feeds are advised to conduct standard quality control tests routinely to ensure the values used in formulation reflect those of shipments arriving at the mill.


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County Extension Coordinator/Agent

“Your local County Extension Agent is a source of more information on this subject.”