

POULTRY

DISTILLERS DRIED GRAINS WITH SOLUBLES (DDGS)

Distillers grains have great potential for lower cost use in various poultry rations. Recent substantial increases in numbers of ethanol distilleries have resulted in the DDGS product becoming readily available so that its rate of growth is the fastest of all feed ingredients. The poultry industry needs to be aware and take advantage of its many benefits:

1. High protein (28-30%) and high energy (1350 Kcal/lb) - components the growing and egg laying poultry require.
2. Possible replacement for high priced soybean meal, typically 1/2 the price.
3. Contains all corn gluten meal proteins from corn and associated pigment factors.
4. Yeast fermentation product that contains 3-5% dried yeast cells that provide B vitamins, promotes palatability and increased feed consumption.
5. Over 50% of phosphorus is bioavailable and potential to reduce dicalcium phosphate and therefore lowers ration cost.
6. Contains 9-10% fat which is an excellent source of linoleic acid and energy.

AVAILABILITY

Distillers dried grains with solubles (DDGS) are the result of whole grain (usually corn or sorghum), milled, cooked and fermented into ethanol using enzymes and yeast. After the ethanol is completely removed by distillation, the remaining solubles concentrated by evaporation and dried with the insolubles including yeast cells. Thus, the final DDGS is approximately a three times concentration of the remaining whole grain portion due to removal of fermentable carbohydrates and starch. The DDGS are identified by the type of natural whole grain from which they are made, i.e. corn DDGS, milo DDGS or other grains (wheat or rye). There are now over 80 plants producing DDGS in the United States and Canada with more being built each year. So there is availability to meet increasing demands. DDGS are available by truck, railcar or barge year round. Information and sources of supply are available from Distillers Grains Technology Council (DGTC), whose members produce consistent high quality products.

NUTRITIONAL BENEFITS

Over 60 years ago A.D. E'Ercole, et al, (1939), Massachusetts State College, and H.J. Sloan (1940), Minnesota Experiment Station, found in their studies that distillers grains could replace 12-15% of the total crude protein for growing chicks and laying hens. More recently

Dr. S. Noll (2004), Univ. of Minnesota, has reported that from three studies with turkeys (Toms) using 10-12% DDGS in rations was comparable in performance in terms of body weight and feed conversion to the control diet, corn-soy-meal. Also her data indicated that while DDGS differed in amino acid content between plants, the DDGS were relatively consistent from the same source. N. Dale and A. Batal, University of Georgia, (2003) studies showed that 6% DDGS can be used in chicken starter feeds and increasing to 12% in grower diets. They also have shown that in chickens the bioavailability of DDGS phosphorus is 61%. K.D. Roberson, Michigan State University, (2004) reported that in a corn-soybean meal, chicken-laying diet, as DDGS were increased from 0% to 15%, yolk color was increased with no reduced egg production, weight or specific gravity.

<u>NUTRIENT, %</u>	<u>TYPICAL VALUE (D.B.)</u>
Dry Matter,	91.0
Protein, Crude (CP).	28.0
Fat,9.0
NDF,	44.0
Phosphorus,0.8
Lysine (CP Basis).	0.7
Tryptophan (CP Basis).	0.2
Energy (ME, K cal/lb).	1350

FEEDING DISTILLERS GRAINS

Recommended feeding levels by many University Animal Departments, Minnesota, Georgia and Michigan State have been as follows: starter chicks - 5.0%, chicken/turkeys grow-finish and broilers - 10%, chicken layers - 15%. As with corn and all corn-generated co-products, DDGS is low in lysine and tryptophan so supplemental addition of these may be necessary with higher DDGS levels especially in grow-finish rations. Therefore, careful adjustment of rations for amino acids; lysine, tryptophan and arginine must be made to get maximum performance. Corn DDGS fat (corn oil) provides essential fatty acids (linoleic acid) and high energy value (ME) 1200 Kcal/lb. The most important benefit of feeding DDGS is potential for reducing ration cost, replacing portions of expensive soybean meal, corn and dicalcium phosphate with DDGS is a real cost reduction opportunity.

For more information on feed applications, nutritional references and supply sources, please contact: Distillers Grains Technology Council, University of Louisville, Lutz Hall Room 435, Louisville, Kentucky 40292, 800-759-3448 or 502-852-1575, 502-852-1577 (Fax). Or visit our web site at: www.distillersgrains.org

