

New research reported at

THE International Poultry Scientific Forum is a concurrent meeting of the Southern Poultry Science Society and the Southern Conference on Avian Diseases that is sponsored by the two groups as well as the U.S. Poultry & Egg Assn.

The forum is held prior to the International Production & Processing Expo in Atlanta, Ga. Two hundred-eighty-three papers were presented orally or by poster. The abstracts may be downloaded from www.ippepo.org/ipsf.

Bottom Line

with
BILL DUDLEY-CASH*



Reduced-oil DDGS

Producers of dried distillers grains with solubles (DDGS) are frequently removing part of the oil from their product for the production of biodiesel and other uses. Removing part of the oil will most likely reduce the energy value of the

DDGS produced and may have other nutritional effects.

In abstract M25, K. Perryman, J. Hess and W. Dozier III of Auburn University reported research on the nitrogen-corrected apparent metabolizable energy (AMEn) and standardized ileal amino acid digestibility (SIAAD) of reduced-oil DDGS.

Two experiments were conducted using Ross x Ross 708 chicks to determine the effects of oil extraction from corn DDGS on nutrient value.

Three samples of DDGS that varied in oil content were used in the

1. Analysis of experimental DDGS and results

DDGS analysis, % DM	L-DDGS	M-DDGS	H-DDGS
Ether extract	6.06	8.80	11.59
Crude protein	30.3	28.5	30.7
Starch	4.9	5.9	6.7
Ash	5.4	5.4	5.0
NDF*	32.9	37.1	33.0
Total fiber	31.4	36.6	33.6
Crude fiber	10.0	9.4	8.6
Experimental results			
AMEn, kcal/kg	1,975	2,644	3,137
SIAAD, %			
Methionine	0.735	0.788	0.803
Cysteine	0.654	0.661	0.717
Tryptophan	0.825	0.843	0.888
Arginine	0.779	0.792	0.817

*NDF = neutral detergent fiber.

2. Effects of enzymes plus DFM

Item	Control	Test diet
Water:feed ratio, 0-42 days	1.84 ^a	1.79 ^b
Ileal digesta DM, %, day 41	16.6	17.3
Litter quality score, day 21	5.3 ^b	6.5 ^a
Litter DM, %, day 41	45.5 ^b	50.3 ^a
Litter calcium, % DM, day 41	13.58	12.62
Litter soluble		
phosphorus, % DM, day 41	2.32 ^a	1.84 ^b
Foot pad lesion score ^c , day 41	2.47 ^a	2.06 ^b

^{a,b}Means in a row without a common superscript are significantly different (P < 0.05).

^cLesion score: 0 = no evidence of foot pad dermatitis; 4 = severe foot pad dermatitis.

research. The analysis of the three samples is shown in Table 1.

The ether extract content of the DDGS samples varied from 6.06% for the low-ether extract DDGS (L-DDGS) to 11.59% for the high-ether extract DDGS (H-DDGS). The starch content also varied from 4.9% for L-DDGS to 6.7% for H-DDGS, while crude fiber varied from 10.0% for L-DDGS to 8.8% for H-DDGS. The other nutrient values did not vary in a consistent manner.

In experiment 1, 576 chicks were randomly assigned 12 birds per cage to 48 grower battery cages, with 12 replicate cages per treatment.

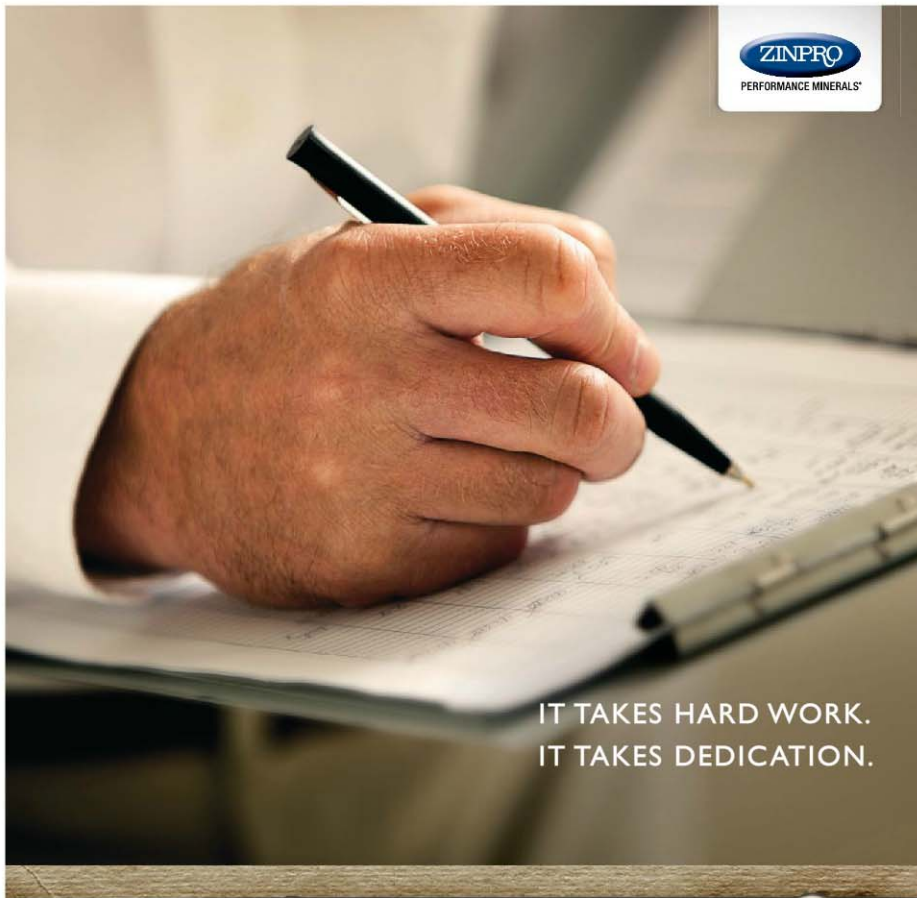
Four dietary treatments were fed from 21 to 28 days of age. Treatment 1 consisted of 85% of a corn/soybean meal basal diet plus 15% dextrose. Treatments 2, 3 and 4 consisted of the 85% corn/soybean meal basal diet plus 15% of each of the experimental DDGS samples, respectively.

A 48-hour excreta collection was conducted for AMEn determination from 26 to 28 days of age (Table 1). There were significant differences in AMEn content, with a range from 1,975 kcal/kg for L-DDGS to 3,137 kcal/kg for H-DDGS.

In experiment 2, 432 chicks were randomly assigned 12 birds per cage to 36 battery grower cages, with 12 replicate cages per treatment.

The broilers were fed one of three semi-purified diets that consisted of 76% of the three experimental samples of DDGS, respectively, as the sole source of amino acids from 21 to 30 days of age. These broilers were used for the determination of SIAAD coefficients.

The results for selected amino acids are shown in Table 1. Oil extraction significantly reduced the SIAAD coefficients for methionine, cysteine, tryptophan and arginine. No significant differences in SIAAD coefficients were reported for lysine, threonine and valine.



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The Bottom Line

These results indicate that the removal of oil from DDGS reduces the AMEn content and lowers the SIAAD coefficients for selected amino acids. These changes in important nutrient values must be taken into account when purchasing DDGS as well as when formulating diets that contain DDGS.

Litter quality

Yueming Dersjant-Li et al. with Danisco Animal Nutrition/Dupont in the U.K. and Schothorst Feed Research B.V. in the Netherlands reported a study designed to measure the effect of supplementing a broiler diet with mixed enzymes and a direct-fed microbial (DFM) on litter quality and foot pad lesion score (abstract T117).

The experiment consisted of two dietary treatments: a control and a test diet (control diet supplemented with test products). In the experiment, 7,000 day-old male Ross 308 broilers were distributed over 10 floor pens, with 700 broilers per pen and five replicate pens per treatment. Fresh wood shavings were used as bedding material in all pens.

Pelleted diets were fed *ad libitum* in a three-phase feeding program, and water was freely available. The test diet was supplemented with a source of mixed enzymes (xylanase,

amylase and protease) and a DFM containing three bacillus strains. The experimental facilities simulated commercial production conditions.

The results of the research are shown in Table 2. The test treatment significantly improved litter dry matter (DM) content and litter score. This was associated with a low water-to-feed ratio and a high ileal digesta DM content for the test group. The result was a significantly reduced foot pad lesion score for the test group: 2.06 versus 2.47.

The enzyme and DFM combination also numerically reduced the calcium

content and significantly reduced the soluble phosphorus content of the litter on a DM basis.

The researchers reported that a numerically lower *Clostridium perfringens* population was observed in the ileal (log 7.2 versus 8.3) and cecal (log 8.8 versus 9.7) digesta of broilers fed the test diet compared to the control.

mixed enzymes in combination with a DFM resulted in improved litter quality and reduced foot pad lesion scores. Foot and leg problems are reported to be among the biggest management challenges in the broiler industry. ■

*Dr. William A. Dudley-Cash is a poultry and fish nutritionist and has his own consulting firm in Modesto, Cal. To expedite answers to questions concerning this article, please direct inquiries to *Feedstuffs*, Bottom Line of Nutrition, 7900 International Drive, Suite 650, Bloomington, Minn. 55425, or email comments@feedstuffs.com.

The Bottom Line

Under the conditions of this research, supplementing a broiler diet with

In 60 seconds

Colostrum replacer: Land O'Lakes Animal Milk Products introduced Land O'Lakes Colostrum Replacement for Kid Goats & Lambs, which is formulated to protect newborn goats and lambs from day 1 by reducing the risk of disease transmission. The company noted that the product reduces the risk of disease transmission when fed in place of maternal colostrum. It also provides consistent levels of immunoglobulins.

Enrofloxacin relaunch: Norbrook Laboratories Ltd. announced that following the Food & Drug Administration's denial of a citizen petition filed by Bayer Animal Health, FDA has reinstated in full its prior approval of the sale and use of Norbrook's new Enroflox 100 (enrofloxacin) in cattle and non-lactating dairy heifers less than 20 months of age. New Enroflox 100 is approved for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somnus* in beef and non-lactating dairy cattle. Norbrook, a global veterinary pharmaceutical company, said the new BRD treatment antibiotic has the same active ingredient and formulation as Baytril 100 (enrofloxacin) and is approved in cattle for multi-day use only. Enroflox 100 will be available from veterinarians in 100 mL and 250 mL bottles.

Trich test: Life Technologies Corp. announced the availability of the only U.S. Department of Agriculture-licensed, real-time polymerase chain reaction (PCR) test to detect *Tritrichomonas foetus* — a sexually transmitted disease in cattle that leads to early embryonic losses and infertility, resulting in cattle industry losses due to open (non-pregnant) and late-calving cows. The VetMAX-Gold Trich Detection Kit gives veterinary diagnostic laboratories a test that provides sensitive and specific results through real-time PCR amplification of *T. foetus* DNA, the announcement said. Accurate testing to identify positive bulls is the only way to prevent the spread of trichomoniasis prior to cows being exposed to bulls.

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