

Director's Digest



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TALLOW IMPROVES EGG PERFORMANCE of LAYING HENS

Inclusion of tallow in the diets of laying hens was shown to be beneficial in three separate and different investigations being conducted with FPRF grant support by Professors Bobby Reid, Jerry Sell and Leo Jensen.

Professor Reid of the University of Arizona observed a significant improvement in feed conversion, expressed as feed/dozen eggs, when tallow was added to layer diets. Metabolizable energy intake rose and there was an increase in the number of eggs and/or their weight.

Dietary levels of 14-18% protein and up to 6% tallow were fed to determine the relationship between metabolizable energy and protein levels. With 14% dietary protein, 4-6% supplemental tallow elicited a significant increase in egg production. Diets containing 16% protein gave somewhat higher levels of egg production and supplemental tallow did little to further improve it but supplementation of the 18% protein diet with 2% tallow improved egg production significantly.

Lysine levels of 0.765 and 0.837% in conjunction with supplemental tallow were associated with an improved rate of egg production and Professor Reid suggests that the 0.66% lysine level recommended for mature laying hens by the National Research Council may be too low for optimum performance.

Increased energy intakes become very important during times of both low and high temperature stresses when the proportion of dietary energy used for body maintenance rises. Overall, the effects of supplemental dietary fat appear to be most beneficial in the 1-4% range.

Professor Sell at Iowa State University demonstrated in a prolonged layer trial that 3 and 6% supplemental fat in corn-based diets containing 10 or 20% dried distillers grains with solubles (DDGS) reduced hen-day feed consumption and improved feed efficiency. Similar results were reported with fat-supplemented diets based on wheat middlings.

The rate of egg production appeared to improve but egg weights were not increased significantly. Professor Sell suggests that, in today's feed market, the addition of 3% fat to diets containing 10% DDGS may be economically advantageous.

Professor Jensen at the University of Georgia compared the effects of supplemental feed grade animal fat (1,4 and 8%), tallow (8%) and poultry oil (4 and 8%) in practical corn-soybean meal diets for laying hens. Preliminary results after the first seven weeks of this trial indicate no differences in egg production but egg weights were generally greater when fat was added to the diets. Little change in relative egg size, however, was observed when hens were fed either 4% tallow or 4% feed grade animal fat in a diet made isocaloric with the basal diet. These results appear to confirm the importance of higher caloric density in layer diets.

As laying hens come into production, they lay small eggs which increase in size as production proceeds through the year. More than one-third of all eggs laid during the first twenty weeks of production are in the medium, small and pee wee grades. Only after thirty weeks of production do 90% of the eggs fall into large, extra large and jumbo classes.

Professor Jensen points out that the number of eggs of each size has an important effect on profitability to the producer. He notes that in 1976 the prices of eggs per dozen in Detroit were 68.3 cents (jumbo), 64.6 cents (extra large), 63.3 cents (large), 55.9 cents (medium) and 41.9 cents (small). From these figures it is evident that an increase of only one grade size from medium to large, two of the most common retail sizes, improved the returns by 13% and from small to medium by 33%.

Recently, an industry analyst at the Southeastern International Poultry Convention predicted an increase in the average farm cost to produce a dozen eggs in the next ten years with continued inflation from 43 cents to 67 cents, or 56%. The incorporation of tallow as an efficient and low cost source of energy in balanced layer feeds can become an important factor in assuring the profitability of the egg industry as the costs of producing, processing, marketing and packaging continue to rise.

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