

Econometric Feeding of Commercial Layers:

Response Comparison of DL-Methionine and Methionine Hydroxy Analogue with Milo-Soybean Diet Using Different Regression Models

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ABSTRACT, The relative bioefficacy of methionine hydroxy analogue free acid (MHA) was compared to DL-methionine (DLM) on laying hens with a milo-soybean diet, which was formulated to have low methionine and cystine level to increase the sensitivity of methionine deficiency. Five graded supplemental levels (0.02, 0.04, 0.06, 0.08 and 0.10%) of methionine from DLM or MHA were added to the basal diet (containing 0.20% methionine) on equimolar basis. Five different models were used to determine the bioefficacy of MHA compared to DLM. Three of the models were exponential models, with supplemental methionine level based on weight, supplemental methionine intake based on weight and supplemental methionine intake based on molar as the independent variable respectively. Two of the models were slope-ratio models, with supplemental methionine intake based on weight and supplemental methionine intake above basal diet based on weight as the independent variable. Regression analysis showed the average bioefficacy was 122% or 139%(egg production), 109% or 124%(egg mass) and 89% or 101% (egg weight) on weight basis or molar basis respectively. All bioefficacy values were not significantly different from 88% on weight basis or 100% on molar basis ($P > 0.05$), but were significantly different from 65% on weight basis or 74% on molar basis ($P < 0.05$).

Key words: DL-methionine, methionine hydroxy analogue, bioefficacy, layer, regression model