

Nuttawut Krutthai 2006: Effect of Dietary Protein and Methionine on Egg Production, External Characters of Chicken Eggs and Attitude Consumers in Bangkok Metropolitan Area.

Master of Science (Agriculture), Major Field: Animal Science, Department of Animal Science.

Thesis Advisor: Assistant Professor Chaiyapoom Bunchasak, Ph.D. 120 pages.

ISBN 974-16-1963-4

Experiment 1 was conducted to study the effect of dietary protein (CP) and methionine (Met) on egg production and external characters of chicken. In the experiment, 1,152 of laying hens (Babcock B-380) were divided into 12 groups. Each group consisted of 6 replicates of 16 hens and was assigned to receive a treatment, which was a combination between protein (14, 16 and 18 %) and methionine levels (supplement by considering CP:Met ratio; 51.62, 46.67, 36.84 and 31.82), from age 21 to 48 weeks. A  $3 \times 4$  factorial with completely randomized design was assigned for this study. The results showed that hens received 14% CP had lower egg production, egg weight, egg mass, body weight, protein intake, Met intake and feed conversion ratio than those 16 and 18% CP groups ( $P < 0.01$ ). However, the 18% CP group had cost/kg of egg higher than those 14 and 16% CP ( $P < 0.01$ ). While, supplementing Met groups were significantly improved egg weight, Met intake and feed conversion ratio than the unsupplementing groups ( $P < 0.05$ ). For eggshell quality and characteristic, hens received 16% CP had shell weight, shell weight per surface area, and shell density higher than those of 14 and 18% CP ( $P < 0.05$ ). However, breadth and surface area of eggs of the 18% CP group were higher than those of 14 and 16% CP ( $P < 0.05$ ). Eggshell color and ash (%) of eggs had significantly decreased ( $P < 0.05$ ) due to Met supplementation ( $P < 0.05$ ), conversely, surface area of eggs had significantly increased ( $P < 0.05$ ). Experiment 2 was conducted to study the opinion of consumers in Bangkok on external characteristic of eggs. A questionnaire was designed and used for assembling information from 280 consumers who are living in Bangkok. Descriptive statistics (i.e. frequency, means, and percentages) and Chi-square were used for the statistical analyses. With randomly distribution of the questionnaire, most of the persons who answered the questionnaires were women, had bachelor's degree of education, had 5,001 to 10,000 bath/month of income, and had 4-6 persons in family, respectively. Most of the consumers chose eggs with medium size (60-65g), had deep brown color, smooth surface and oval shape. Those consumers were not sure that the opinion of egg having deep brown color and big size would have more nutrient enrichment than those having pale color and small size, likewise, eggs had glossy shell would come from the healthy hens and egg with rough surface and had very pale color would come from sick hens. While, egg shape and surface of egg affect on the buying eggs of consumers.

Nuttawut Krutthai

Student's signature



Thesis Advisor's signature

18 / May / 2006