

The effect of metabolizable energy intake on the egg production and egg quality for brown layers in cage during laying period ⁽¹⁾

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Abstract

The purpose of this study was to investigate the effect of dietary metabolizable energy (ME) levels on the egg production and quality for brown layers raised in cage. A total of one hundred and sixty Isa commercial brown layers, 25 weeks of age were randomly divided into four groups and provided the average daily ME intake for 265 kcal, 273 kcal, 281 kcal, and 289 kcal, respectively. Each group was fed with the isoprotein diet and restricted the diet for 95 g per day per bird (18.5 g protein/bird/day). Laying hens in each group were allocated into four replicates with 10 in each treatment group. Water was supplied *ad libitum* and photoperiod was provided 16 hours per day. Experimental period was eight weeks from 25 to 32 weeks of age. The egg production, egg weight, egg mass, egg efficiency, egg shape index, egg shell colors and characteristics (strength, thickness and ratio), yolk weight, height, colors, ratio and yolk index, egg white ratio and haugh unit, were measured and used as parameters for determining the ME requirements. The results showed that egg production, egg weight, egg mass, yolk weight and yolk height of group A (265 kcal ME/d) were significant ($P < 0.05$) lower than those others of the groups. Egg efficiency in group B (273 kcal ME/d) was significant ($P < 0.05$) better than that of A (265 kcal ME/d) groups. The body weight gain, mortality, egg shell quality, Haugh unit, yolk index, egg shape index, egg yolk and egg white ratio, egg shell and egg yolk color value were not influenced by ME intake. In conclusion, the daily ME intake at 273 kcal was sufficient for normal egg production and egg quality of brown layers in cage during laying period.

Key words: Brown layers, Metabolizable energy, Egg production, Egg quality.

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