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A body condition scoring system for layer hens

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Abstract The body condition of end-of-lay hens was scored into four categories by palpating the keel and breast muscles. They were then killed with an overdose of pentobarbitone and physically dissected into fat, muscle, and bone. As the condition score increased, empty body weight, fat weight, muscle weight, and fat % in the empty body increased. Birds with the lowest condition score had particularly poorly developed breast muscles. This body condition scoring method can be a useful subjective way of assessing a bird's body reserves.

Keywords chicken; body condition score; body composition; fatness; emaciation

INTRODUCTION

Body condition scoring methods have been developed for horses, cows, sheep, and broilers (Frischknecht & Jull 1946; Henneke 1985; Orr et al. 1986; Edmonson et al. 1989). They are used for evaluating the adequacy of previous feed supply, determining future feed requirements, assessing the health status of individual animals, and establishing the condition of animals during routine animal management or welfare inspections. This paper describes a body condition scoring system for layer hens. It is based on palpating the breast and was developed in both white and brown breeds of bird. Previous work on grouse and pheasants has suggested that breast muscle development may be a useful indicator of protein mobilisation for egg production and subsequent muscle atrophy (Reynolds 1997). In the present study, body condition was evaluated in terms of the estimated muscle and fat weights in the physically dissected body.

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MATERIALS AND METHODS

The body condition of 184 end-of-lay Shaver Brown 579 and Shaver White 2000 caged layers was scored by one person in the following manner. The live birds were held individually by both legs in one hand and with the head downwards. The palm of the other hand was used for palpating and grading the protruberance of the keel, the development of the breast muscles immediately alongside the ventral ridge of the keel, and the convexity or concavity of the breast muscle contour. Body condition was scored in this way on a 0–3-point scale. 0 corresponded to a prominent ridge on the keel with limited overall breast muscle and concavity of the breast muscle alongside the keel, 1 had greater development of breast muscle which was not concave and was usually flat in contour, 2 had a moderately developed convex breast muscle, and 3 was a well developed relatively plump breast. In some birds there was obvious asymmetry in the breast muscles, with the left breast appearing to be larger than the right breast. In this situation an average score was given, and extreme cases of asymmetry were purposefully not selected for dissection. Brown and white breeds were selected for the study with a view to developing a method which could be applied to both types. There were 10 birds (5 brown and 5 white) for each body condition score, and they were between 72 and 85 weeks of age. It had been intended to select 40 birds for dissection from one farm but only 38 came from the farm where body condition had been scored in the 184 birds. Two brown breed birds were therefore obtained from a separate farm.