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EFFECT OF DIETARY PROTEIN LEVEL DURING EARLY BROODING PHASE ON SUBSEQUENT GROWTH PERFORMANCE AND MORPHOLOGICAL DEVELOPMENT OF DIGESTIVE SYSTEM IN CROSSBRED KAMPUNG CHICKEN

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Abstract

A study was undertaken to investigate the growth performance and morphological development of the digestive system in the crossbred kampung chicken, in response to changes in dietary protein levels during the early brooding phase. Nine hundred day-old crossbred kampung chicks were utilised in the study which lasted over 28 days. The chicks were randomly divided into three equal treatment groups. Three dietary protein (CP) treatments were imposed from the age of one day till 12 days, namely high protein (25% CP), medium protein (21% CP) and low protein (17% CP) feeds. This was followed by a common commercial starter feed (21% CP) given to all birds until the termination of the study on day 28. The growth parameters investigated were feed intake, body weight gain and feed conversion ratio (FCR). Gross morphology of the digestive system was assessed on sampled birds at ages 14 and 28 days. The digestive organs considered included the crop, proventriculus, gizzard, liver, gall bladder, pancreas, duodenum, jejunum, ileum, caecum, and colon. Over the study periods of 1-12, 12-28, and 1-28 days, significant differences in body weight gain and feed intake were observed among the three dietary treatment groups while no differences were noted in terms of feed conversion ratio. Birds on the high protein diet gained more weight and consumed more feed than the birds on the lower protein treatment. In general, no significant effects of dietary protein levels on the morphological development of the digestive system were observed. It is concluded that within the limits of the experimental conditions imposed, provision of high dietary protein during the early brooding phase resulted in an improved subsequent growth performance of the crossbred kampung chicken. However, the high dietary protein consumed apparently did not help to improve the morphological development of the digestive system of the birds.

Keywords: dietary protein level, brooding phase, growth, digestive system morphology, crossbred kampung chicken