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鲁西斗鸡产蛋期粗蛋白质需要量

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Crude Protein Requirement of *Luxi* Game Chickens during Laying Period

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摘要 本试验旨在综合饲养试验和屠宰试验研究粗蛋白质(CP)水平对产蛋期(26~41日龄)鲁西斗鸡生产性能、体成分和鸡蛋内容物成分的影响,以确定鲁西斗鸡产蛋期的CP需要量。试验选用平均体重为(1.952±0.288) kg健康的26周龄鲁西斗鸡200只,随机分为4个组,每组5个重复,每个重复10只。试验采用单因素试验设计,各组分别饲喂不同CP水平的饲料,CP水平分别为:14.00%、15.50%、17.00%和18.50%,各组按相同投喂量进行限饲,试验期为16周。结果表明:1)根据生产性能变化规律可将试验期划分为3个阶段,在26~29周龄,CP水平对产蛋率、平均日产蛋量(ADEM)、料蛋比和平均蛋重均无显著影响($P>0.05$);在30~37周龄,17.00%CP组产蛋率显著高于其他组($P<0.05$);在38~41周龄,随CP水平提高,产蛋率和ADEM呈线性($P<0.05$)或二次曲线($P<0.05$)提高,料蛋比呈线性降低($P<0.05$)。2)饲料CP水平对鲁西斗鸡屠体和鸡蛋内容物所含的CP、粗脂肪(EE)、粗灰分、水分和总能(GE)均无显著影响($P>0.05$)。3)以平均日粗蛋白摄入量(ADCPI)为依变量,以平均日增重(ADG)和ADEM为自变量,进行回归分析,得出鲁西斗鸡产蛋期CP需要量的析因模型:26~29周龄, $ADCPI=3.52ADG+0.35ADEM+2.18BW^{0.75}$;30~37周龄, $ADCPI=4.02ADG+0.35ADEM+2.42BW^{0.75}$;38~41周龄, $ADCPI=3.09ADG+0.53ADEM+2.10BW^{0.75}$,其中 $BW^{0.75}$ 表示代谢体重。根据本试验结果,结合最佳生产性能组的ADG、ADEM和 $BW^{0.75}$,得到鲁西斗鸡产蛋期前期(26~29周龄)、中期(30~37周龄)和后期(38~41周龄)3个阶段的饲料CP适宜添加水平分别为:14.19%、16.92%和18.28%。

关键词: 鲁西斗鸡 粗蛋白质 需要量

Abstract: A single factor design was used in this 16 weeks experiment to study crude protein (CP) requirement of *Luxi* game chickens during laying period (aged 26 to 41 weeks). Rearing and slaughter experiments were conducted to study the effects of dietary CP level on production performance, body composition of *Luxi* game chickens during laying period and egg composition. A total of 200 26-week-old *Luxi* game chickens with the average body weight of (1.952±0.288) kg were randomly divided into 4 groups with 5 replicates per group and 10 hens per replicate. Four dietary CP levels were 14.00%, 15.50%, 17.00% and 18.50%, respectively. All birds were fed the same amount of diets. The results showed as follows: 1) 3 stages had been divided by means of production performance. From 26 to 29 weeks of age, dietary CP level did not affect laying rate, average daily egg mass(ADEM), the ratio of feed to egg and average egg weight of *Luxi* game chickens ($P>0.05$); from 30 to 37 weeks of age, laying rate of 17.00% group were higher than those of other groups ($P<0.05$), from 38 to 41 weeks of age, the ratio of feed to egg linearly decreased ($P<0.05$) and laying rate and ADEM linearly or quadratically increased ($P<0.05$) as the CP level increased from 14.00% to 18.50%. 2) Dietary CP level did not affect the contents of CP, ether extract(EE), ash, moisture and gross energy(GE) of chicken bodies and eggs ($P>0.05$). 3) Average daily crude protein intake(ADCPI) was regarded as dependent variable, average daily gain(ADG) and ADEM were regarded as independent variable, then multiple linear regressions were made, and the results showed as follows, from 26 to 29 weeks of age, $ADCPI=3.52ADG+0.35ADEM+2.18BW^{0.75}$; from 30 to 37 weeks of age, $ADCPI=4.02ADG+0.35ADEM+2.42BW^{0.75}$; from 38 to 41 weeks of age, $ADCPI=3.09ADG+0.53ADEM+2.10BW^{0.75}$. Through integrated account of ADG, ADEM and $BW^{0.75}$ of the best production performance group, the dietary appropriate CP levels for *Luxi* game chickens during the early period (26 to 29 weeks of age), middle period (30 to 37 weeks of age), and late period (38 to 41 weeks) are

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14.19%, 16.92% and 18.28%, respectively.

Keywords: *Luxi* game chickens, crude protein, requirement

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