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Egg production characteristics of different ecotypes of Village Chicken in Sri Lanka

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The phenotypic diversity existing among different village chicken varieties in different agro-ecological regions should be characterized and conserved. Their production performance should be evaluated to gather information to conduct selection and genetic improvement. Objectives of this study were: 1) to evaluate different varieties of village chicken of various agro-ecological zones, with respect to egg production, total egg mass, average egg weight and laying percentage during the first 6 months of their laying period; and 2) to estimate correlation coefficient between egg production and egg weight of different ecotypes. Juvenile village chickens with unique features from various agro-ecological zones of Sri Lanka were collected and classified as Naked Neck (**NN**: Large with no neck feathers), Giant (**GT**: Largest body size), Deep Brown (**DB**: Small, deep brown neck and hackles), Orange Tan (**OT**: Large, orange tan neck and hackles), Black (**BL**: Medium, black plumage), Black with Yellow Silver (**BWS**: Medium, black & silver plumage), White (**WH**: Medium, white plumage), Light Brown (**LB**: Medium, light brown hackles), White Brown (**WB**: Medium, white and brown hackles), and White Silver (**WS**: Medium, silver feathers in white plumage). The birds (N=400) were wing banded and kept in individual cages following standard feeding and management practices for layers. Artificial Insemination was carried out within every ecotype for several generations until purity was established. Individual egg weights were measured daily up to the end of six months of their laying period. The total number of eggs per hen, total egg mass, average egg weight, and laying percentage were analyzed by using ANOVA procedure with means separation by DNMRT procedure (at P=0.05). Overall mean egg weight across ecotypes was 41.8 (± 4.58) g with the laying percentage of 28.22. LB and WB produced the highest number of eggs while NN and GT recorded the lowest, however, the differences were not significant. The average egg weights of only GT and OT were significantly higher than that of BL. However, no significant differences were found in total egg mass or laying % among ecotypes. The lower egg production of some ecotypes was compensated by their higher egg weights. The correlation coefficients between average egg weight and number of egg laid by individual hens were significant only in GT, BL, BWS and LB ecotypes (-0.80, 0.618, 0.734, and 0.276, respectively). These results show that sufficient variability exists among the ecotypes for selection and genetic improvement.

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