RESTING AND DIET IN THE RECOVERY OF LAYING HENS FROM AN EGG PRODUCTION DROP ASSOCIATED WITH AVIAN ENCEPHALOMYELITIS

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The nutrition and husbandry of laying hens are known to affect their reaction to the presence of disease organisms. Increased dietary concentrations of various nutrients may be beneficial for layers subjected to stress resulting from a disease or vaccine challenge. Induced resting from lay is sometimes recommended as a means of accelerating recovery from egg production drops. This report summarises the effects of resting and diet following a severe decline in egg production and a marked deterioration in shell quality in a multi-strain flock commencing at 53 weeks of age. Diagnostic tests indicated that the production drop was caused by Avian Encephalomyelitis virus, although the persistent nature of the problem suggests that other factors may also have been involved. The affected flock comprised equal numbers of four strains of bird (two local and two imported) of the same age, and all strains were affected to a similar extent and responded similarly to the subsequent treatments. Prior to this study, birds of each strain were housed in randomly distributed groups of eight (four adjacent two-bird cages) in an open-sided shed, and more than half of the groups were affected. At 65 weeks of age, 144 groups of birds were selected on the basis of the previous four weeks’ production records and divided into two equal-size categories, L and H, having average laying rates of approximately 27% and 74% respectively and equally representing all four strains. At this stage the mean body weight of the L birds was 0.221 kg lower than that of the H birds and their mean egg weight was 1.4g lower. At 66 weeks of age the two sets were divided into three sub-sets: unrested, rested by feeding barley for nine days (short rest) and rested by feeding barley for 18 days (long rest). Two post-rest diets were fed to an equal number of groups in each subset from the end of the rest induction period until the end of the trial. These diets were low density - 11.0 MJ/kg ME and 15.4% protein, and high density - 12.1 MJ/kg ME and 18.9% protein. Data were analysed for the period from 72 weeks of age (which is the average age at which the long-rested birds returned to a peak rate of lay) to 81 weeks of age.

Compared with the no-rest treatment, short and long rests had little or no effect on egg number, egg weight or percentage of eggs with shell defects in the L birds, but increased the rate of lay by 8-14 percentage points and mean egg weight by 1.3g and reduced the proportion of eggs with defective shells by 10-13 percentage points in the H birds. Subsequent feed intake increased with increasing length of rest in both the L and H categories. While egg number and shell quality of the H birds was not significantly affected by dietary nutrient density, the rate of lay of the L birds was 20 percentage points higher and the proportion of shell defects was 20 percentage points lower with the high density diet than with the low density diet. The high density diet increased mean egg weight by 4.2g in the L birds and by 2.3g in the H birds. Compared with the low density diet, the high density diet resulted in lower feed intake in the H birds and higher feed intake, substantial bodyweight gains and lower mortality in the L birds.

It is concluded that birds in lay which suffer a severe set-back require a high quality diet and may not be rejuvenated by resting.

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