

EGG PRODUCTION PERFORMANCE OF INDUCED MOULTED WHITE LEGHORN LAYERS*

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One hundred and forty four commercial Single Comb White Leghorn spent hens of 60, 65 and 70 weeks age group were purchased and reared for adaptation up to 61, 66 and 71 weeks of age. Then birds were weighed, leg banded and randomly allotted into six treatment groups with three replicates of eight birds each.

Experimental treatments were T₁ - 60 weeks control group, T₂ - 60 weeks induced moult group, T₃ - 65 weeks control group, T₄ - 65 weeks induced moult group, T₅ - 70 weeks control group, T₆ - 70 weeks induced moult group.

INDUCED MOULTING PROGRAMME

In all age groups, the egg production parameters were studied before induced moulting for one 28 days period i.e. 62 - 65, 67 - 70 and 72 - 75 weeks, respectively. All birds were dewormed, two days before induced moulting. Induced moulting was done by withdrawing drinking water for 0 - 3 days, feed for 0 - 10 days and night light for 0 - 14 days. Drinking water was provided from 4th day onwards.

On 10th day evening and 11th day morning, 2 g of jaggery and 0.2 g of electrolyte mixture were given per bird through drinking water, as a starvation

breaking liquid diet, to tone up the digestive system.

On 11th day, one hour after giving jaggery - electrolyte water, 40 g of layer mash was given per bird. Sufficient care was taken to ensure uniform feed intake. The feed was increased daily by 10 g / bird / day until full feeding was restored by about 18th day, thereafter *ad - libitum* feeding was followed. During the post - moult laying period, all the hens were fed *ad - libitum*, with commercial layer mash. From 15th day onwards, artificial light was provided during night time for 20 minutes, which was stepped up by 20 minutes per day until five hour night light was reached, making a total of 17 hour photoperiod per day. Between 18th and 20th day, vaccination against Ranikhet disease using Komarav strain (RDVK) was carried out. Multivitamins were administered in the morning at the recommended dose in drinking water for about a week, after RDVK vaccination.

HEN HOUSED EGG PRODUCTION

Hen housed egg production was numerically better in all the post - moulted groups of birds compared with their respective controls. The cumulative hen housed egg production had also

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revealed a similar trend with T₂ and T₆ group recorded the highest egg production of 89.13 eggs while T₁ with the lowest (84.83 eggs). The statistical analysis revealed significant difference (P<0.05) on hen housed egg production at first period of post - moult due to rest and regeneration of reproductive system.

HEN DAY EGG PRODUCTION

The overall post - moult results of the study showed that birds in group T₄ (81.26 per cent) recorded the highest hen day egg production followed by birds in group T₂ (80.53 per cent), T₆ (79.75 per cent), T₃ (79.06 per cent). However, the birds in group T₁ (76.34 per cent) and T₅ (76.04 per cent) had lower hen day egg production than other treatment groups.

Except first moult period, the analysis of variance of data revealed no significant difference among treatment groups. Comparison of means indicated that the birds in post - moulted groups had higher hen day production compared to their respective controls. The analysis of data on effect of induced moulting did not show any significant effect on hen housed egg production and hen day egg production among different treatment groups except at the first period of post - moult which might be due to rest and regeneration of reproductive system.

The highest overall mean egg production was noticed in 65 weeks induced moult group and the difference was not significant as observed by Koelkebeck *et al.* (1992). One of the major reasons for increased post - moult egg production was decreased post - moult production of shell less eggs (Roland and Brake, 1982) and enhancement of ovarian functions due to oviductal tissue rejuvenation might also have resulted in the improvement of egg production. (Ocak *et al.*, 2004). The hens laying at highest rate during pre - moult showed not much improvement (T₁, T₂, T₃ and T₅) whereas those laying at the lowest rate showed the greater

improvement (T₄, T₆), which was similar to the findings of Roland and Brake (1982). The peak egg production was observed during second post - moult period which coincides with the findings of Berry and Brake (1987) and Charles and Cunningham (1987).

Koelkebeck (1991), Koelkebeck *et al.* (1991), Koelkebeck *et al.* (1992) and Alodan and Mashaly (1999) observed that the fasting period of 10 days and post - moult diet with 16 per cent crude protein produced better performance in SCWL layers. Similar results were also observed in this study with 17 per cent crude protein. From the above findings, it could be suggested that the low rate of egg production might be improved by induced moulting.

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