

EFFECT OF DIFFERENT TYPES OF TREATED LITTERS USED IN THE POULTRY HOUSE ON BROILER PRODUCTIVITY

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Extended Summary

A total of 300 Cobb-500 broiler chicks were used to conduct the experiment. The experiment was conducted at Sher-E-Bangla Agricultural University Poultry Farm, Dhaka, in the month of April 2012 for 28 days. There were six treatments: T₁- Treated rice straw, T₂- Control rice straw, T₃- Treated sawdust, and T₄- Control sawdust, T₅- Treated rice husk and T₆- Control rice husk. The litter treated with alum. There were 4 replications. Number of observations were (6x4) 24. Commercial starter and grower broiler rations were used with recommended calorie and protein. The broiler performances such as feed intake (FI), live weight (LW), FCR, mortality, BCR etc and litter pH, ammonia concentration, moisture and microbial load were analyzed. MSTAT-C computer package program was used for data analysis. Significantly (P<0.05) higher Feed Intake (FI) were observed in different control group of litters than treated groups. The higher FI reason in control groups was unknown. The Live Weight (LW), Feed Conversion Ratio (FCR), Mortality and Benefit Cost Ratio (BCR) of broiler chicken of different treated and control litters were not statistically (P<0.05) significant. But, better FCR were observed in all alum treated litters. Although mortality was insignificant (P<0.05), but highest and lowest mortality of broiler chicken was found in control and treated rice straw groups. Comparatively higher BCR was observed at alum treated litter groups. Significant differences (P<0.05) were found in pH content between treated and control litters at 3rd and 4th week. The highest pH was observed at control rice straw, sawdust and rice husk litters in comparison with treated groups. Similarly ammonia concentration were significantly (P<0.05) higher in control groups than treated litters. The moisture content significantly (P<0.05) varied among the treatments. The highest moisture was observed in rice straw at different weeks except 1st week. *Coliform bacteria* were not found in the treated litter and even control litter except sawdust. In general *Salmonella* and *fungus* were found low amount in treated litter than control groups. Besides, *E. coli* and general bacteria were found low amount in the treated litters.

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The live weight (LW), feed conversion ratio (FCR), mortality of broiler chicken was not affected by different alum treated and control litters, except feed intake (FI). The higher pH and ammonia concentration were observed at control group of litters than treated groups. Alum reduces pH of litters and emissions of ammonia. The highest moisture was observed in rice straw at different weeks. Alum treated litters reduces pathogens including *E. coli*, *Salmonella* and *coliform*. The benefit cost ratio (BCR) was not affected by different alum treated and control litters.

Rice straw can be used as broiler house litter material in dry season condition of Bangladesh. Alum treated litter will be environment friendly for both poultry and poultry keepers. Future research to generate more information on this issue in different climatic zones of Bangladesh may be useful for broiler growers. Attempts should be taken to disseminate the findings to the stakeholders through extension organizations.