



## Effects of Feeding Different Levels of Poultry Litter in the Form of Pellet and Mesh on the Performance and Some Blood Metabolites in Male Afshari Lambs: An Experimental Study

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### Abstract

**BACKGROUND:** Poultry litter contains different nutrients, including protein and minerals, which can be used in ruminant nutrition.

**OBJECTIVES:** This experiment was done to study the effects of feeding different levels of poultry litter (PL) in the form of pellet and mesh in the diet on the performance and blood metabolites of Afshari lambs.

**METHODS:** A total of 54 Afshari lambs with an initial mean body weight of  $25 \pm 5$  kg were randomly divided into six groups with three replicates (3 lambs per replicate) in a  $2 \times 3$  factorial design. Treatment groups were fed diets of 53% forage and 47% concentrate for 14 weeks. Concentrates were prepared with 0%, 5%, and 10% of PL in the form of mesh (M0, M5, and M10) or pellet (P0, P5, and P10) on diet dry matter basis. Feed intake was measured daily, and lambs were weighted at 2-week intervals. Blood samples were taken from each lamb at 0, 28, 56, and 84 days of the experiment to measure its total protein (TP), blood urea nitrogen (BUN), copper, and molybdenum concentration.

**RESULTS:** Using different levels of poultry litter in both mesh and pelleted form had no significant effect on average daily gain and dry matter intake at different stages and during the whole experimental period. Daily dry matter intake was higher ( $P < 0.05$ ) for treatment groups fed M form of PL than for the mean of P form during the whole experimental period. The feed conversion ratio was significantly ( $P < 0.05$ ) higher in lambs fed M form of PL compared with P form. Increasing levels of PL resulted in increased blood copper in both M and P treatment groups at all stages of the experiment. Blood concentration of molybdenum was similar among treatments during the entire experiment. The differences in the form of diet had no significant effects on blood concentration of copper, molybdenum, TP, and BUN.

**CONCLUSIONS:** Results indicate that both mesh and pellet forms of poultry litter could be replaced with other sources of protein up to 10% in the diets of Afshari lambs without any adverse effects on performance.

**Keywords:** Afshari lamb, Broiler litter, Mesh, Pellet, Performance

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### Figure Legends and Table Captions

**Table 1.** Ingredients and chemical composition (on dry matter basis) of experimental diets.

**Table 2.** Effects of using different levels of poultry litter in the form of pellet (P) and mesh (M) in diet on performance parameters of male afshari lambs.

**Table 3.** Effects of using different levels of poultry litter in the form of pellet (P) and mesh (M) in diet on blood parameters of male afshari lambs.