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Effect of maternal dietary manipulation and vaccination on the neonatal blood biochemical attributes and feed conversion ratio of turkey poults

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Two hundred turkey breeder hens and twenty-four viable toms of 30-35 weeks of age of small white variety were distributed into two treatment groups having four replicates of 25 hens and 3 toms in each treatment. First four replicates were offered turkey breeder diet (Diet A) (NRC, 1994) and other four replicates were offered high immune diet (Diet B) having 115% amino acids, 1% each omega-6 and omega-3 fatty acids, retinol- 4.95 mg, DL-alpha-tocopherol- 199.86 mg, ascorbic acid -150 mg, selenium- 0.5 mg and zinc-118 mg per kg diet for 8 week duration. After six weeks of experimental feeding, two replicates from each treatment groups were vaccinated with ND (R2B) vaccine. There was no significant difference in the serum SGPT, SGOT, acid phosphatase, alkaline phosphatase and uric acid in day old turkey chicks from breeders maintained on a higher plane of nutrition and vaccinated. However, day old turkey chicks from vaccinated breeders had significantly higher ($P<0.05$) serum protein levels compared to those from non vaccinated breeders. Similarly, day old turkey chicks from breeders maintained on a higher plane of nutrition had apparently higher serum protein levels compared to those from breeders maintained on Diet A. Poults hatched from breeders fed high immune diet had significantly better ($P<0.01$) FCR throughout the experimental period compared to those hatched from breeders maintained on NRC diet. Over all, maternally vaccinated chicks had significantly better ($P<0.05$) FCR compared to those not vaccinated (1.92 vs 2.03) and non-vaccinated chicks had significantly better ($P<0.05$) FCR compared to those vaccinated (1.9 vs 2.05). Further, high immune diet along with maternal vaccination resulted in better FCR throughout the experimental period. Thus, it may be concluded that day old turkey chicks from vaccinated breeders and maintained on a higher plane of nutrition may have higher serum protein levels due to higher level of maternal antibodies. Further, breeders may be maintained on a higher plane of nutrition and vaccinated to elicit better feed conversion ratio in post hatch turkey poults.

Keywords: Turkey breeder hens, diet, vaccination, serum protein, feed conversion ratio.

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