

**EFFECTS OF GRADED LEVELS OF FEATHER MEAL AS A  
DIETARY PROTEIN SOURCE ON GROWTH PERFORM-  
ANCE, HAEMATOLOGY, SERUM CHEMISTRY AND  
CLINICAL ENZYME ACTIVITIES IN RABBITS**

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**ABSTRACT**

Forty-eight cross bred (New Zealand White x Chinchila) weaner make rabbits aged 6 weeks and weighing 600-700g were balanced for weight and randomly allocated to four experimental rations. The control diet had no feather meal while its incorporation in the other trial diets was at 10%, (diet 2), 14% (diet 3) and 18% (Diet 4) as supplement to blood meal. Maize and cassava peels were maintained at 36% each in all the diet and rice bran at 8%. Effects of the diets on performance, haematology, and serum chemistry and clinical enzyme activities were determined. Feed intake was significantly depressed by the feather meal at 14% and 18% levels of inclusion. Feather meal incorporation at 10% supported feed intake, growth, performance and feed efficiency at levels comparable to the control diet, while higher levels of feather meal (14% and 18%) significantly ( $P<0.05$ ) depressed feed consumption and produced poor daily weight gain and depressed feed efficiency. The rabbits fed the control diet had similar haemoglobin concentration, mean cell volume means cell volume mean cell haemoglobin, and mean cell haemoglobin concentration with animals on 10% feather meal supplement but are significantly higher ( $P<0.05$ ) than levels observed in animals fed the other diets. Diets 2 and 3 supported packed cell volume at levels similar to the control but at 18% supplementation, feather meal significantly depressed packed cell volume values. Animals on the 18% feather meal diet had the lowest mean cell volume of 47.22 (fl) compared to 59.81 (fl) for the control. The red blood cell count was unaffected by the dietary treatments while the 18% feather meal supplementation significantly elevated white blood cell count ( $P<0.05$ ). Serum total protein, globulin and calcium were highest ( $P<0.05$ ) in rabbits fed the control and 10% feather meal supplemented diets and lowest in the other two rations Albumin was similarly lowest ( $P<0.05$ ) in rabbits fed 18% feather meal and progressively higher in the other diets. However feather meal at 14% AND 18% supplementation significantly lowered serum cholesterol, alanine aminotransferase (ALT) and aspartate aminotransferase (AST). Clinical enzyme activities ranged from 173.22 in the control to 68.47 at 18% feather meal supplementation and 291.12 in the control diet to 66.42 at 18% feather meal for AST and ALT respectively. On the other hand, creatinine and urea levels rose significantly with increasing feather meal inclusions in the diets. Supplemental feather meal significantly affected calcium/creatinine ratio with higher levels of supplementation producing the lowest values. These chemical interactions will need further study for a better understanding to emerge but the present study has established that feather meal can be supplemented at 10% level with other protein sources with good clinical and metabolic performance.

**Keywords:** Feather meal, rabbits, blood meal, haematology, serum chemistry, electrolytes.