

14. EVALUATION OF THE POTENTIAL OF *CROTALARIA OCHROLEUCA* AS A PROTEIN SOURCE IN THE DIETS OF GROWING PIGS

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Eighteen growing female pigs were used in a completely randomized design to evaluate growth performance, carcass measurements and toxic effects in pigs fed on diets containing *Crotalaria ochroleuca* meal (COM). Diets were formulated such that COM substituted sunflower seed cake (SSC) at a rate of 0, 10 and 20%. Chemical analysis of the ingredients and diets was also performed. Pigs were fed individually according to scale basing on three times the metabolizable energy for maintenance until they attained 70 kg liveweight. Blood samples were drawn weekly for the whole experimental period. Weekly live weights, slaughter characteristics and values of plasma total protein (TP), packed cell volume percentage (PCV) and activities of Aspartate Aminotransferase (AST) and Gamma-Glutamyl transferase (GTT) from the blood were based recorded. Clinical and pathological evaluations were based on any departure from the normal appearance of the animals (health status) as well as on the histological changes in the liver and kidneys upon slaughter. Economic evaluation on the use of COM was also assessed. Crude protein content (CP) of COM (18.65% DM) was lower than that of SSC (27.55% DM) while the crude fibre (CF) content was slightly higher in COM (36.58% DM) than in SSC 35.2% DM) The diets had similar chemical composition except the control, which had slightly higher Ether extract (EE) than the diets with 10 and 20% COM. Increasing the level of COM in the diet from 0 to 20% significantly ($P<0.05$) decreased feed conversion ratio significantly ($P<0.05$) decreased the growth rate of pigs from 425 to 368 g/day, and increased feed conversion ratio significantly ($P<0.05$) from 3.69 to 4.04 DMI/kg gain. Pigs fed on the control diet took significantly ($P<0.05$) shorter time to attain 70kg and hence less total feed consumption than pigs fed on the COM diets. Carcass and non-carcass measurements were not significantly ($P>0.05$) affected by the

level of COM in the diet. The manifestation of toxicity observed in the study was the congestion around the renal tubules of the kidneys, swollen and paler hepatocytes on livers of pigs fed diets with COM. Under the experimental condition, the cost of producing one kilogram of COM was almost equal to the price of sunflower seed cake. Hence, the calculated feed cost of producing one kilogram of carcass increased. Nevertheless, assuming that *C.ochroleuca* can freely be obtained in the farm, feed cost can be reduced and cost of producing a kilogram of meat decreased, hence increased profit margin. The overall results indicated that inclusion of COM in the diets of pigs significantly reduced performance. This suggests that COM may be of value when included in much lower levels than the ones used in the present study.