

## **Abstract:**

The effects of supplementing different diets with varying levels of energy and protein either in the morning or afternoon were assessed. 384 scavenging indigenous chickens aged 14 weeks were allocated to four treatment diets: 1: Positive control (commercial diet); 2: High energy (3062 kcal/kg DM), high protein (224 g/kg DM) (HEHP); 3: Low energy (2378 kcal/kg DM), high protein (218 g/kgDM) (LEHP); 4: Low energy, Low protein (LELP). The supplements were offered in the morning and afternoon. Results showed that both pre-lay scavenging pullets and adult hens that received supplemental diets with high protein levels (HEHP and LEHP) both in the morning and afternoon ate more supplemental feed during the afternoon hours. Supplemental energy intake by scavenging pullets was higher in the morning than in afternoon while the reverse was true for adult scavenging hens. The mean supplemental crude protein intake was higher for both pullets and hens in the afternoon. Scavenging indigenous pullets consumed 11.7% more supplemental crude protein in the afternoon while hens consumed 12.4% more supplemental crude protein in the afternoon. Supplemental lysine, tryptophan and methionine + cystine intakes were higher for scavenging pullets in the afternoon and the same case for adult scavenging hens in the morning and afternoon. Egg production and weights were higher for hens supplemented with HEHP and LEHP compared to those receiving commercial diet (CD), and those supplemented with LELP diets both in the morning and afternoon. Feed cost was higher in pre-lay pullets supplemented with commercial diets (same levels of energy and protein in morning and afternoon) than with HEHP and LEHP diets mainly due to the higher price of commercial feed compared to that of ingredients found locally. The study suggests that offering a supplement of commercial diet (same level of energy and protein) for growing scavenging pullets followed by a high energy and high protein supplement during the laying period may increase feed intake, nutrient intake, egg production and egg weights