Intake of nutrients from scavengeable resources by scavenging chickens supplemented free choice with protein and energy

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Abstract

A study was conducted under farm conditions and management to estimate nutrient intake from scavengeable resources, provide information on diurnal nutrient intake and effects of supplementation with energy (maize only), protein (soybean meal) singly or together on nutrient intake. A 4 X 3 factorial arrangement of treatments comprising 4 supplementary regimes (Scavenging and offered a choice of cracked maize and soybean meal ScSM, Scavenging and offered soybean meal ScS, Scavenging and offered a choice of cracked maize ScM and scavenging only) and 3 times of crop retrieval (10.00 am, 2.00 pm and 6.00 pm). The dry weights of the crop contents obtained at 18.00 hrs were fitted into the regression equation to obtain an estimate of their dry matter intake. Nutrient intake per day was calculated as the product of dry matter intake and percent nutrients in the Crop contents.

The dry matter, protein and energy intakes (65.4, 6.4 g/d and 135 Kcal /d respectively) were below the estimated intakes of free-ranging hybrid exotic hens. Estimated protein, lysine, crude fibre and energy deficits from scavengeable resources were 67.1, 55.6, 15.6 and 0.27% respectively, thus protein and lysine were most critical nutrients in scavengeable resources. Supplementing indigenous scavenging chickens free choice with protein (soybean meal) and energy (maize meal) resulted in chickens consuming more protein to make up for the protein deficits. Nutrient (energy, protein and amino acids) intake from scavengeable resources was below the requirement of free-ranging local hens. Supplementation is inevitable to increase nutrient intake for optimum production. Offering two complementary foods is an effective method of feeding scavenging chickens allowing birds to select to meet requirements. There is a high morning (6- 2pm) intake of energy and a high afternoon (2-6 pm) intake of protein in a diurnal nutrient intake pattern. Protein and more so the essential amino acid lysine were more critical nutrients in scavenging environments with deficits of more than 50% in the scavengeable resources.

A strategic supplementary feeding strategy taking into consideration the supply of protein, more so the essential amino acid lysine and the nutrient (energy and protein) density in the morning and afternoon recommended for scavenging chickens. Carry out practically nutrient supplementation or restriction at such times in morning or afternoon to enhance feed efficiency

Key words: Amnino acids, choice feeding, feeding strategy, indigenous, local, maize, soybean

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