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# Welcome

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# Dietary protein and energy requirements of Japanese quails in the tropics

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**Applications:** Dietary protein and energy are the most important nutrients in poultry diets. There is lack of information on dietary standard for tropical Japanese quails; this is a major obstacle to the growth and productivity of Japanese quails in the tropics. This study is aimed at determining the dietary energy and protein for optimal performance of Japanese quails in Nigeria.

**Introduction:** Quails is one of the poultry species of economic importance, they produce eggs and meat that are enjoyed for their unique flavour (Nasrollah, 2008). They have low maintenance cost, short generation and resistance to diseases. However, the nutritional requirements of this bird for the tropical region have not been well established. Studies have shown that the nutritional needs of poultry birds vary from species to species and from one location to another. Presently, in Nigeria, the diets fed to quails are mostly based on 20 to 24% crude protein recommended for the temperate (NRC, 1994). Furthermore, there are variations in the nutrient requirements reported for this bird (Attia et al., 2006 and Abbasali et al., 2011). Thus, determining the optimal dietary protein, energy and their interaction on the productivity of Japanese quails is the justification for this work.

**Materials and methods:** A total of 576 unsexed Japanese quails aged two weeks were used for this experiment. A 4 (dietary energy levels: 2600, 2800, 3000 and 3200 Kcal metabolizable energy) x 4 (dietary crude protein levels: 20, 22, 24 and 26 %)

factorial arrangement in a completely randomized design (16 experimental units). Sixteen soya beans-based mash diets were formulated and compounded according to the design of the study. Data on body weight, feed intake were measured and were used for calculating the body weight gain, and feed conversion ratio. All data collected were subjected to a two-Way Analysis of Variance using SAS statistical package (SAS, 2019). Standard and procedure of the Federal University of Technology, Minna, Nigeria ethical guide line was strictly followed.

**Results:** The results of the main effect of different dietary protein and energy levels on the growth performance of Japanese quails are presented in Table 1. In all the performance parameters measured, there was no significant ( $p > 0.05$ ) differences observed in the treatment groups, thus no interaction.

**Conclusion:** Since there was no difference in all the parameters measured, in order to save feed cost, it is more economical to use the lowest protein and energy levels. It is, however, recommended that the same diets should be fed to laying birds to determine the requirements for optimal egg laying performance and quality.

**References:** Attia, Y.A., Aggoor, F.A.M., Ismail, F.S.A., Qota, E.M.A. and Shakmak, E.A. (2006). Effect of energy level, rice by products and enzyme addition on growth performance and energy utilization of Japanese quail. Verona, Italy, September 10- 14.

Nasrollah, V. (2008). The Japanese Quail: A Review. International Journal of Poultry Science, 7: 925-931.

NRC (1994). Nutrient Requirements of Poultry (9th Ed.). National Academy Press, Washington, DC.

**Table 1:** Main effect of dietary protein and energy on performance of Japanese Quails

Treatments	Initial Weight (g)	Final Weight (g)	Weight Gain (g)	Total fed Intake (g)	FCR
Effect of crude protein (%)					
20.00	20.23	84.16	63.94	892.89	2.00
22.00	20.27	84.83	64.56	893.01	1.98
24.00	20.25	84.63	64.38	915.44	2.02
26.00	20.24	84.06	64.82	903.16	2.04
SEM	0.02	0.66	0.65	20.92	0.06
p. value	0.81	0.81	0.83	0.85	0.93
Effect of energy ME/Kcal )					
2,600	20.26	83.91	63.65	928.44	2.04
2,800	20.24	84.14	63.90	926.41	2.07
3,000	20.24	84.94	64.70	883.61	1.96
3,200	20.26	84.53	64.27	865.95	1.94
SEM	0.03	0.66	0.65	20.92	0.06
p. value	0.86	0.71	0.70	0.12	0.34



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