

Research Note

GROWTH CYCLE OF GUINEA FOWL *Numida meleagris* IN PUERTO RICO¹

Limited reliable data is available about guinea fowl physiological development and/or management, none dealing with the tropical environment. Most available knowledge is based upon limited published information and practical experience of a relatively few growers.

In Puerto Rico day old guinea keets are predominantly imported from the U. S. from April to October, although a limited number are hatched by growers from eggs produced locally in the same period. Guinea hens apparently do not respond to artificial illumination,² so no reasons for their cyclical production have been established.

The purpose of this work was to determine the growth cycle of guinea fowl in Puerto Rico and to obtain data associated with feed requirements, size of eggs, and the hatchability of eggs produced when fowl were fed a regular laying ration or a breeder laying ration.

Keets hatched in North Dakota on October 20, 1975 were imported when 1 day old and raised to adult size. Their average day-old weight was about half of that of a contemporary chick. They were fed regular broiler starting ration (20% crude protein) up to 8 weeks of age, followed by growing ration (16% crude protein) up to 20 weeks of age, and regular laying ration (16% crude protein) thereafter. The following tabulation summarizes their growth curve:

	Age in weeks					
	8	12	14	16	34	38
Weight, lbs	1.04	1.98	2.27	2.52	3.31	3.50
(kg)	(.47)	(.90)	(1.03)	(1.15)	(1.50)	(1.59) ³
Feed required/net gain	5.3	10.6	—	23.8	—	—

The rate of growth obtained closely resembles that reported by Stromberg even though fowl were not treated for internal parasites, to which they are susceptible everywhere, particularly in the tropics.

Hens were housed in individual wire cages from age 20 weeks. Contrary to reports that they will lay only on the range or in floor pens equipped with sun porches, the first egg was laid June 8, 1976, by a hen 33 weeks old. The 50% laying rate, which marks sexual maturity in a laying hen flock, was never attained by this flock, as indicated

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² Guinea Fowl, Stromberg Publishing Co., Fort Dodge, Iowa, 1975.

³ Animals reached the standard weight for age reported for the U.S.A.²

during subsequent days in none of which did eggs produced equal more than half the number of hens kept in cages. Nevertheless, more than 50% of the hens started laying in a sporadic manner within their 35th week of age.

In a 28-day laying period, 47 hens (1316 hen-days) laid 296 eggs, a rate of 22.5%, while consuming 235 lbs (107 kg) of laying ration, an average consumption of 2.86 oz (81 g)/animal/day, and requiring 0.79 lb (.36 kg) feed/egg produced. The average egg weight was 32.9 g as compared to 39.8 g reported for adult guineas in the U.S. and to 56.8 g for a White Leghorn (W.L.) laying hen. These differences can be ascribed to the fact that pullets were used in this study, while the value reported elsewhere is for adult or average-sized birds. The egg shell thickness was .0185 in (.047 cm) as compared to .014 in (.036 cm) for the W.L. laying hen. This difference was expected since guinea egg shells are very hard and rarely crack accidentally as hen eggs frequently do. The broken open egg height (interior egg quality) was 15.6 mm as compared to 17.2 for W.L. laying hens. This is because height is somehow related to the size of the inner egg contents, although not proportionally.

Hens were divided into two groups. One continued receiving the regular 16% crude protein laying ration, while the other received a 16% crude protein breeder laying ration, which differed from the regular ration only in providing higher levels of thiamine, riboflavin, biotin, choline, folic acid, B₆, B₁₂, pantothenic acid, and vitamin E. Fowls were kept under these regimes until their production ceased at the beginning of September. The following tabulation describes the data obtained:

<i>Treatment</i>	<i>Eggs produced</i>	<i>Eggs hatched</i>	<i>% hatched</i>	<i>Number aided to hatch</i>	<i>% aided of those hatching</i>
Regular layer	433	102	23.6	47	46.1
Breeder layer	458	169	36.9	38	22.5

The egg production of 47 guinea hens from the beginning of June to the beginning of September (3 of the 7 potentially productive months) was 1187 or 25 eggs/bird. USDA has reported that the average guinea hen lays between 50 to 100 eggs per year. Thus the average production of 25 eggs obtained in 3 of the 7 potentially productive months with late-hatched pullets must be considered normal, even when feeding these birds a 16% crude protein ration, which is below the recommended level of 20–24%.²

Even though it is recommended that breeder ration be offered a month before the laying season, in our case it was offered 1 week prior to the comparison period. The results, however, indicate the benefits obtained by its use. The percentage of eggs hatched was higher and the

percentage of birds aided in hatching was much lower in the group receiving the breeder layer. In neither case was the percentage of overall hatch satisfactory when compared to that in the U.S.A., approximating 100%²). The few local breeders who provide only regular laying ration have verbally reported a very low hatchability. Accordingly, in order to improve the hatchability, a future study should establish the effects of age of the laying bird, feeding period prior to laying, protein level in the ration, and environmental conditions upon hatchability.

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