

MORPHOLOGICAL PERFORMANCES OF QUAIL POPULATION (COTURNIX COTURNIX JAPONICA) FROM THE WEST SIDE OF THE COUNTRY

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Abstract

This paper presents results concerning morphological index of birds of the order Galliformes, genus Coturnix, Coturnix coturnix japonica species sp. from Bihor County. The investigations were conducted in three private farms in Bihor County. There were analyzed in total 995 specimens of quail's population. The following morphological parameters were studied: body weight, food consumption, the outputs situation from covey and their causes. There has been a linear trend of weight gain, more pronounced in females compared to males during juvenile period. At the end of the laying period, males had a weight of approx. 130g, and females nearly 150g, values located just below average performance. The efficiency of feed utilization was quite low: 4.6 - 4.9 kg feed/kg gain during youth, and at laying quail. It was necessary to consume a quantity of 23,01g fodder to produce an egg.

Key words: Body weight dynamics of the mature Japanese quail females, Body weight dynamics of the mature Japanese quail males.

INTRODUCTION

History of bringing the species of bird in Bihor County, is not known precisely, but it is estimated that Japanese quail farms began to develop intensively after 1990-1995, when it was created a veritable opinion flow favorable to the studied species, thanks first of all to the superior qualities which produced eggs have, in terms of nutrition and curative. Also, poultry carcasses reformed can be successfully used in the preparation of culinary specialties.

MATERIALS AND METHODS

The study was conducted just out of data collected from private breeders in Oradea and Bihor County. The three farms in which the study was conducted are: loft C1, 310 heads (80 males and 230 females), loft C2, 295 heads (75 males and 220 females), and loft C3, 390 heads (90 males and 300 females).

The biological material is represented by birds of both sexes, at different ages (hatching, in the juvenile period, to reaching sexual maturity, during the active period of reproduction).

Were used materials and working devices such as: technical and analytical digital balances, calipers, Petri plates and flat glass plates, small incubators (50-200 eggs / series) portable ovoscope, camera, computer equipped with spreadsheet software, depending on the experimental method addressed.

The results obtained were compared with the reference values in the literature (Sauveur, B., 1988; MG Usturoi, 1999; Vacaru-Opriş I. et al., 2002).

The data obtained experimental were centralized and statistically processed.

RESULTS AND DISCUSSION

The data regarding the dynamics of body weight at youth are shown in Table 1. for males, respectively in Table 2 for females Thus, in the case of young males, an average body weight at the age of one day of 5.2 g / head, with variations between 4.8 ± 0.4 g and 5.7 ± 0.9 g, groups having a very good homogeneity ($v = 3.2 - 8.4\%$).

Table 1.

Body weight dynamics (g) of the Japanese quail youth males									
Age	C1 (n = 80)			C2 (n = 75)			C3 (n = 90)		
	$\bar{x} \pm s_{\bar{x}}$ (g)	V%		$\bar{x} \pm s_{\bar{x}}$ (g)	V%		$\bar{x} \pm s_{\bar{x}}$ (g)	V%	Average (g)
1 day	5,7 $\pm 0,3$	2,9		5,2 $\pm 0,2$	3,9		4,8 $\pm 0,4$	2,6	5,2
1 week	37,4 $\pm 3,1$	3,4		35,6 $\pm 2,3$	4,5		31,6 $\pm 2,9$	3,2	34,9
2 weeks	61,2 $\pm 4,2$	4,6		60,4 $\pm 3,9$	5,1		57,8 $\pm 5,1$	5,1	59,8
3 weeks	79,9 $\pm 6,8$	5,3		76,8 $\pm 5,1$	5,7		74,3 $\pm 6,8$	5,8	77,0
4 weeks	90,1 $\pm 9,1$	5,7		88,3 $\pm 8,8$	6,3		89,4 $\pm 7,7$	6,5	89,3
5 weeks	102,3 $\pm 10,5$	6,7		100,1 $\pm 10,4$	8,2		101,5 $\pm 10,3$	6,9	101,3
6 weeks	110,5 $\pm 12,6$	7,2		108,2 $\pm 11,6$	8,4		108,9 $\pm 11,8$	7,8	109,2

At the age of three weeks, male chicks reached an average weight of 77,0g but lots homogeneity began to decrease. Body weight followed a linear progression, being achieved successively the following average values: 89.3 g (4 weeks); 101.3 g (5 weeks); 109.2 g (6 weeks).

Table 2

Body weight dynamics (g) of the Japanese quail youth females							
Age	C1(n = 230)		C2(n = 220)		C3(n = 300)		Average (g)
	$\bar{x} \pm s_{\bar{x}}(g)$	V%	$\bar{x} \pm s_{\bar{x}}(g)$	V%	$\bar{x} \pm s_{\bar{x}}(g)$	V%	
1 day	5,7 ± 0,3	3,2	5,5 ± 0,5	3,8	5,1±0,3	3,3	5,9
1 week	39,2 ± 1,3	3,8	37,8 ±1,4	4,4	33,4±1,3	3,9	36,8
2 weeks	67,9 ± 2,2	4,4	66,1 ±2,5	5,0	61,7±2,5	4,4	65,2
3 weeks	90,1 ± 3,4	5,0	88,7±3,3	5,5	83,5±3,4	5,0	87,4
4 weeks	106,5 ± 4,4	5,5	105,9±4,6	6,1	105,9±4,3	5,6	106,1
5 weeks	123,4 ± 5,6	6,1	119,2±5,5	6,6	121,5±5,4	6,2	121,4
6 weeks	135,2 ± 6,5	6,7	131,4±6,7	7,3	131,8±6,5	6,7	132,8

Females show an energy of increased growth against males, reaching that at about 1.5-2 months after hatching their weight to be higher by approx. 30%. Average weight at the age of one day was 5.9 g / head, with good uniformity of the population ($v = 3.2-3.8\%$), resulting, at the end of the juvenile period, an average weight of 132.8 g / head. The best performance were observed in the chicks in loft 1.

In males is observed a very slow increase from the average value of the body weight of 112.4 g / head at the age of 7 weeks, to the final value of 128.8 g / head, determined at the age of 34 weeks.

The energy of increase was more reduced compared to the youth period and loads have become increasingly non-uniform (-19.8% $V = 15.7$). The best performance was achieved by the male chicks from loft 1, with a total gain, during the adult, of 17.5 g, and a final average weight of 130.7 g (Fig. 1).

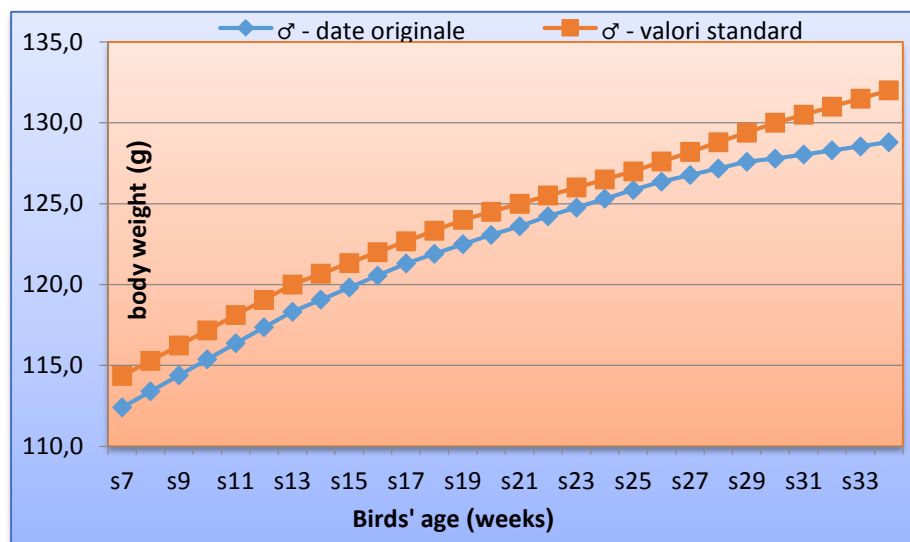


Fig.1. Body weight dynamics of the mature males from *Coturnix coturnix japonica* species

Also in females, weight gain was made more slowly, the quails reaching an average weight of 148.6 g / head at the end of the laying. The best growth increase was achieved by the population of birds in the C3 (+ 12.7g), although the highest final weight has been reached by birds belonging to hatchery C1 (Fig2).

Studied populations have become increasingly heterogeneous, during aging Comparative with the average of the breed the values recorded for increase growth were below standard performance (male 130g -150 g).

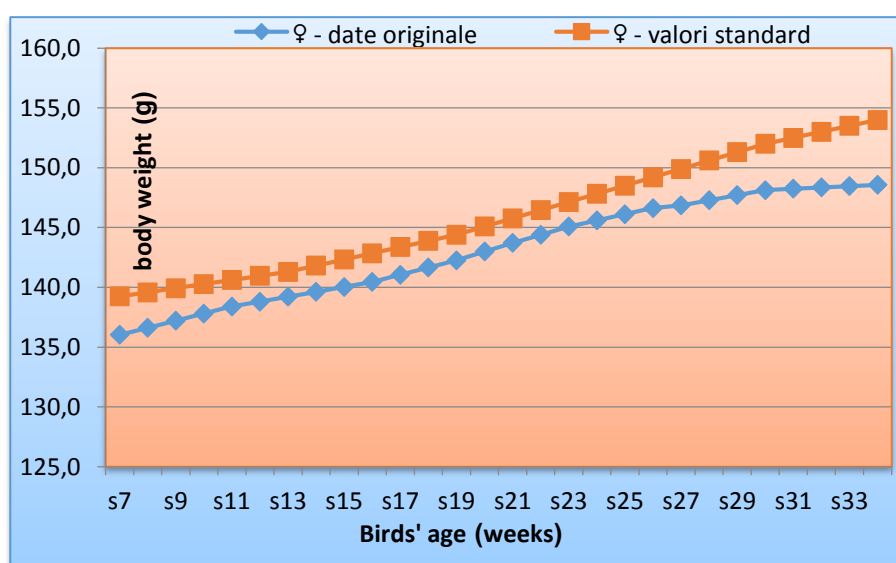


Fig.2. – Body weight dynamics of the mature females from *Coturnix coturnix japonica* species

There were no signs of infectious and contagious diseases, most exits from covey having accidental or technological causes.

CONCLUSIONS

Specimens bird species *Coturnix coturnix japonica*, grown in the county of Bihor were characterized by a linear trend of increase in weight, more accentuated in females against males, especially during juvenile period following that after the onset of laying the growth to continue very slow and slightly more intense in males.

At the end of the evaluation of laying period (36 weeks), males have reached a weight of approx. 130 g and females about 150 g, values located just below average performance for this poultry category. As far as possible

in private farms is desired to increase potential of the species, by selecting the plus variants.

At the moment, it is recommended to continue the pure breed mating, endowment farms with more efficient incubation equipment, designed to reduce embryonic mortality.

It is especially desired more precise control of humidity in conjunction with the incubation temperature, improving the performance, the adoption of breeding in battery system also within the farms where the breeding is on ground (C1 and C2). (Dodu M.,2010).

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