

RESEARCH REGARDING BODY WEIGHT RATING OF THE LEGHORN BREED FROM BIHOR COUNTY

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Abstract

This paper primarily aims at the presentation of experimental results or case studies conducted in a number of 3 or 5 poultry farms within the Bihor county, accommodating valuable genitors belonging to the LEGHORN breed.

Key words: Leghorn breed, body weight rating

INTRODUCTION

Poultry breeding represents a genuine source of knowledge and genetic resources for the advancement of poultry raising, both globally and nationally. In this context, the number of specialists concerned about this activity is increasingly reduced, on the first place being the socio-economic situation and current laws, poultry raising using superintensive systems, generating secure incomes providing the economic agents a certain possibility of development.

Unfortunately, there isn't a national program of conservation / improvement of the of valuable populations of domestic poultry, in this way being wasted the implicit benefits that can be generated through the exploitation of genetic resources of some breeds internationally recognized.

MATERIAL AND METHOD

The material used in biological experiments consisted of birds of both sexes, at different ages (hatching during the juvenile period, to attain sexual maturity during the active breeding) and belonging to the following taxonomic category of zoological class Aves:

- *Galliformes*:
 - *Gallus bankiva domesticus* species – hen, **Leghorn breed**.

To determine the weight, the gravimetric method was used, making individual weighing with analytical balance, made at hatching and weekly for young, male and female category.

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RESULTS AND DISCUSSION

Body weight at Leghorn breed, youth category (0-20 weeks) was rated at hatching and then every 7 days, by individual weighing up to the age of 20 weeks.

Some of the data were extracted from the record books of the 5 farms considered for the study.

Results on the dynamics of individual weight are presented in tables 1 and 2. and in figure 1.

For cockerels, taken in the overall study was 45 individuals, divided as follows: 10 heads - Farm 1, 8 heads. – farm 2, 12 heads - farm 3, 10 heads - Farm 4, 6 heads - Farm 5.

In the case of pullets, an actual of 131 birds has been reviewed, spread across the 5 farms considered for the study: 30 heads -farm1, 26 heads -farm 2, 40 heads - farm 3 and 20 heads - Farm 5.

Thus, it was found an average weight of 39.9 g at the one-day cockerels, between the value of 38.5 ± 0.3 g (C3) and 41.5 ± 0.8 g (C1). The lots had a good consistency, with a coefficient of variation situated around the value of 4%.

A similar situation was encountered in the case of pullets, the first day posthatching, they registering an average weight in the 5 farms of 39.4 g, contained in the range of 38.2 ± 0.4 g and $40.5 \pm 0, 5$ g. Thereafter, the young male was observed a linear dynamic progression of weight: 252.01 g at 3 weeks; 829.46 g at the age of 8 weeks, 1293.5 g at the age of 12 weeks, respectively at 2240.5 g achieve sexual maturity (20 weeks). The best growth performance was noted in cockerels from farm 2 (total progress from hatching to adult stage of 2234.9 g).

In the case of pullets, the study presented a similar development, especially that, from 6 weeks of the life energy of growth was much lower than in cockerels, achieving, at the beginning of laying an average weight of 1604, 0 g, with limits 1577.8 ± 27.2 g (C4) and 1640.1 ± 29.3 g (C5).

Analyzing the data in tables 3.1. and 3.2., it is noted that the extent of aging of Leghorn breed, populations have become increasingly

nonhomogeneous regarding the development of body ($v = 15.8\% - 19.7\%$, to 20 weeks).

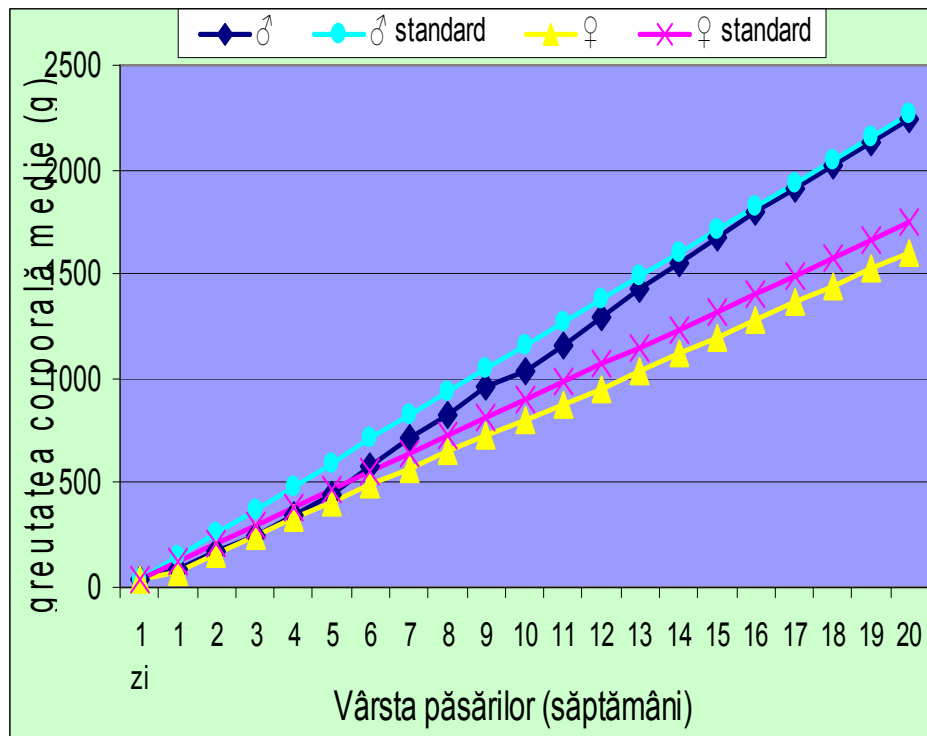


Fig. 1. Evolution of body weight of young poultry of both sexes belonging to Leghorn breed

Table 1

Evolution of body weight (g) of Leghorn male youth, of the five farms

Age	C1 (n = 10)			C2 (n = 8)			C3 (n = 12)			C4 (n = 10)			C5 (n = 6)			Average of studied populations (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%		$\bar{X} \pm S_{\bar{x}}$ (g)	V%		$\bar{X} \pm S_{\bar{x}}$ (g)	V%		
1 zi	41,5	±0,7	3,8	40,2	±0,5	4,5	38,5	±0,3	3,5	39,2	±0,4	4,2	40,1	±0,9	3,9	39,90
1 săptămână	92,6	±2,2	4,5	85,9	±2,4	4,9	80,4	±1,9	4,2	82,5	±3,1	4,9	86,7	±3,2	4,5	85,62
2 săptămâni	180,3	±4,7	5,7	167,8	±4,3	5,2	157,2	±4,1	4,9	161,3	±5,8	5,3	165,4	±5,1	5,1	166,40
3 săptămâni	265,4	±7,1	6,9	254,3	±6,8	5,8	240,4	±7,2	5,4	238,7	±6,7	5,8	261,2	±7,4	5,6	252,01
4 săptămâni	360,1	±10,5	7,8	349,1	±10,1	6,4	321,7	±9,1	6,1	331,4	±8,1	6,5	354,8	±9,2	6,2	343,42
5 săptămâni	453,6	±13,8	8,6	447,8	±13,2	7,1	434,6	±12,4	6,8	430,9	±9,4	7,1	463,5	±11,3	6,8	446,08
6 săptămâni	594,2	±16,4	9,5	588,4	±15,7	7,9	562,9	±14,3	7,5	568,4	±11,8	7,8	591,4	±12,4	7,4	581,06
7 săptămâni	726,7	±18,9	10,7	719,6	±17,6	8,7	689,8	±16,7	7,9	692,7	±14,2	8,5	718,9	±13,9	8,3	709,54
8 săptămâni	851,1	±20,7	11,4	843,4	±19,8	9,2	795,2	±18,5	8,7	810,2	±17,4	8,9	847,4	±16,4	8,9	829,46
9 săptămâni	987,8	±23,1	12,3	975,5	±21,3	10,4	920,3	±20,4	9,4	935,4	±19,7	9,6	982,1	±18,7	9,6	960,22
10 săptămâni	1032,6	±25,6	12,9	1026,7	±24,5	11,1	1018,7	±23,1	10,8	1056,1	±22,1	10,8	1030,2	±20,3	10,1	1032,9
11 săptămâni	1165,2	±27,4	13,5	1151,6	±26,4	12,3	1130,4	±25,2	11,7	1192,4	±24,9	11,5	1166,1	±23,1	12,3	1161,1
12 săptămâni	1311,4	±29,9	14,1	1304,1	±28,9	13,5	1262,9	±27,8	12,9	1280,3	±26,8	12,2	1308,7	±25,7	12,9	1293,5
13 săptămâni	1460,7	±31,6	14,8	1430,9	±30,4	14,2	1395,6	±30,1	13,6	1423,2	±28,7	13,1	1435,9	±27,4	13,7	1429,3
14 săptămâni	1572,2	±33,2	15,4	1559,2	±32,8	14,9	1510,8	±32,3	14,8	1536,4	±31,5	13,9	1567,2	±30,1	14,5	1549,2
15 săptămâni	1693,5	±36,7	15,9	1687,4	±34,7	15,7	1621,2	±34,7	15,5	1654,8	±33,9	14,8	1694,5	±33,4	15,1	1670,3
16 săptămâni	1837,3	±38,1	16,6	1819,5	±36,9	16,4	1738,1	±36,4	16,2	1771,4	±36,1	15,3	1830,8	±35,7	15,9	1799,4
17 săptămâni	1940,8	±39,7	17,1	1934,1	±38,2	17,1	1841,7	±37,9	16,9	1875,2	±38,7	16,2	1927,8	±38,1	16,4	1903,9
18 săptămâni	2049,1	±41,2	18,0	2049,7	±40,4	17,9	1959,4	±39,2	17,7	1987,8	±40,2	17,1	2039,4	±41,2	17,5	2017,1
19 săptămâni	2154,3	±43,4	18,8	2164,8	±43,1	18,6	2063,5	±40,6	18,3	2093,4	±42,8	18,4	2155,6	±43,5	18,2	2126,3
20 săptămâni	2262,4	±45,5	19,7	2275,1	±44,9	19,2	2175,4	±43,1	18,9	2215,3	±45,1	19,6	2274,3	±45,4	19,4	2240,5

Table 2

Evolution of body weight (g) of Leghorn female youth, of the five farms

Age	C1 (n = 30)			C2 (n = 26)			C3 (n = 40)			C4 (n = 35)			C5 (n = 20)			Average of studied populations (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%	$\bar{X} \pm S_{\bar{x}}$ (g)		V%	$\bar{X} \pm S_{\bar{x}}$ (g)		V%	
1 zi	40,5	±0,5	4,1	39,9	±0,3	3,9	38,2	±0,4	3,2	38,7	±0,5	3,6	39,6	±0,3	4,1	39,4
1 săptămână	81,2	±0,9	5,3	82,3	±0,7	4,5	75,4	±0,9	4,1	80,6	±0,8	4,3	79,4	±0,9	5,2	79,8
2 săptămâni	163,5	±1,1	5,9	159,4	±1,2	5,7	150,1	±1,1	5,3	152,8	±1,0	5,4	155,7	±1,3	6,0	156,3
3 săptămâni	259,1	±2,8	6,2	261,3	±2,5	6,3	230,8	±1,9	5,8	242,1	±1,5	6,1	258,4	±2,4	6,7	250,3
4 săptămâni	338,9	±3,4	6,7	345,2	±3,1	6,6	311,3	±2,8	6,2	329,4	±2,3	6,4	347,9	±3,2	7,8	334,5
5 săptămâni	415,3	±4,5	7,4	422,3	±4,2	7,1	385,4	±4,1	6,9	398,2	±3,9	7,2	417,2	±4,1	8,3	407,7
6 săptămâni	494,7	±5,7	7,9	507,8	±5,4	7,7	474,8	±5,1	7,4	476,7	±4,8	7,8	498,6	±5,8	9,4	490,5
7 săptămâni	570,1	±6,6	8,5	589,4	±6,3	8,3	557,2	±6,2	7,9	561,5	±5,7	8,2	575,3	±6,5	10,1	570,7
8 săptămâni	655,2	±8,5	8,8	667,3	±7,8	8,5	632,9	±6,7	8,3	648,2	±6,4	8,6	659,4	±8,7	10,9	652,6
9 săptămâni	710,5	±10,1	9,6	721,3	±9,7	9,1	715,2	±8,6	8,8	723,4	±7,7	9,1	734,2	±9,9	11,5	720,9
10 săptămâni	783,4	±12,7	10,1	802,9	±11,4	9,9	786,4	±9,9	9,5	801,3	±8,9	9,7	806,7	±12,3	12,4	796,1
11 săptămâni	861,2	±14,3	10,4	875,4	±13,9	10,3	862,3	±11,2	10,1	881,7	±10,1	10,2	884,3	±14,5	12,8	873,0
12 săptămâni	945,3	±16,4	11,2	957,1	±15,8	11,3	941,5	±13,4	10,9	952,4	±12,2	11,1	962,4	±16,6	13,4	951,7
13 săptămâni	1021,8	±18,7	11,8	1044,3	±17,2	11,7	1026,1	±15,7	11,3	1034,5	±14,6	11,5	1047,9	±18,2	13,7	1034,9
14 săptămâni	1108,6	±20,4	12,3	1121,9	±19,6	12,4	1107,6	±17,5	11,8	1114,8	±16,5	12,3	1127,3	±19,8	14,2	1116,0
15 săptămâni	1192,7	±22,3	12,6	1197,8	±21,5	12,7	1182,3	±19,8	12,6	1189,6	±18,8	12,8	1204,5	±22,4	14,5	1193,4
16 săptămâni	1275,2	±24,1	13,3	1284,5	±23,8	13,5	1267,9	±21,2	13,4	1269,3	±20,4	13,4	1297,3	±24,2	15,3	1278,8
17 săptămâni	1360,4	±25,7	13,9	1371,7	±25,1	14,1	1352,4	±23,7	14,1	1347,2	±22,9	13,9	1382,1	±25,3	16,1	1362,8
18 săptămâni	1435,8	±26,9	14,5	1455,6	±26,4	14,7	1439,1	±25,3	14,9	1427,7	±24,3	14,7	1470,8	±26,7	16,7	1445,8
19 săptămâni	1510,9	±28,1	15,1	1534,2	±28,3	15,2	1515,2	±27,1	15,5	1501,4	±26,4	15,1	1559,4	±28,2	17,2	1524,2
20 săptămâni	1598,2	±29,8	15,9	1620,1	±28,7	16,1	1583,7	±27,8	15,8	1577,8	±27,2	16,2	1640,1	±29,3	17,9	1604,0

CONCLUSIONS

From the point of view of exterior features we can say that the studied specimens corresponded to standard breed successfully exteriorizing the specific characters of Mediterranean morpho-productive type but also the appropriate color varieties of which they belonged. However, it is desirable the introduction of new varieties of color in the studied populations.

Estimating the body weight, the following specifications can be made:

- development of body weight, in both sexes and age category of youth was within the breed specification, males reaching an average of 2.65 Kg GV at the age of 18 months and females 1.83 Kg G.V. at the same age.

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