STUDIES ON THE PRODUCTIVE PERFORMANCE OF TRANSYLVANIAN NAKED NECK ROOSTERS IN THE POST-CAPONISATION PERIOD

Cipriana Maria Cuciureanu[1*], M.G. Usturoi[1], R.M. Radu-Rusu[1], L.C. Burtan[2], M. Fântânaru[2]

[1]Faculty of Animal Sciences from University of Agricultural Sciences and Veterinary Medicine-Iasi, Romania
[2]Faculty of Veterinary Medicine from University of Agricultural Sciences and Veterinary Medicine-Iasi, Romania

Abstract

The research followed the productive performances of the Transylvanian Naked Neck roosters in the post-caponisation period (from the 6th week of life until the 12th week inclusive). In this sense, two groups of birds were established, of which one experimental LE consisting of 20 roosters and a control lot (LM) with 10 heads. At the age of 6 weeks, the birds from LE underwent the operation of removing the testicles (caponisation) by the method of bilateral laparatomy in the last intercostal space. When the research ends (12 weeks of age of the birds, the roosters in the experimental group recorded a mortality of 70%, a total increase in weight gain of 1124.17 g / head / period, in terms of an average daily consumption of 127, 32 g / head / day and a feed conversion index of 3.81 kg nc / kg increase. The roosters in the control group (uncastrated) registred a mortality rate of 50%, a total increase in weight of 1341.5 g / head / period, an average daily food consumption of 127.08 g nc / head / day and a feed conversion index of 3.23 kg nc / kg increase.

Key words: capon, Transylvanian Naked Nack, growth, feed consumption, mortality rate

INTRODUCTION

Poultry caponisation is an ancient practice that was used long before Christ in China, Rome and Greece.

Capons are male chickens whose testicles have been surgically removed, resulting in deficiencies in the production of androgen hormones [3].

In case of capons, yard behavior and territorial protection are much reduced, thus allowing an extremely efficient conversion of growing feed, fat deposition and improving meat quality [3]. Therefore, the meat of capons is tenderer [6], juicier and tastier [8] compared with a rooster meat.

The final body weight of a capon is 10-20% higher compared to normal roosters [5]. Recommended age for caponisation is between 2 and 8 weeks old. It is then followed by a growing period of up to 8 months, sometimes 10 months, but not more because after the age of 10 months the meat of the capones no longer retains its characteristic tenderness. According to the Commission European Regulation 543/2008 of 16 June 2008, "a capon is a male bird surgically castrated before reaching sexual maturity and slaughtered at a minimum age of 140 days".

According to studies in the field, the caponisation operation ensures a survival rate of 50-55% [2].

It is recommended that the birds be given a feed that provides 17% protein and 2800 kcal / kg in the post-caponization period [4].

MATERIAL AND METHOD

The biological material consisted of 30 roosters belonging to the Transylvanian Naked Neck breed. These were divided into two groups (the experimental group LE consisting of 20 heads, and the control group LM represented by 10 roosters).

[*]Corresponding author:
cipriana.cuciureanu@yahoo.com
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The difference between the two groups was represented by the fact that LE underwent surgical castration surgery, performed at the age of 6 weeks. The castration of the roosters was performed by the method of bilateral laparatomy in the last intercostal space, puncturing the air sacs, highlighting the testicle, with the help of a special forceps, then performing the orhidectomy by unlimited torsion. Laparorafia was performed continuously.

The breeding of roosters took place within the USAMV Iași biobase, in space with permanent bedding and a capacity of 10 birds.

Both groups were given the same type of feed in the post-caponisation period, characterized by a protein percentage of 17% and an energy value of 2800 kcal / kg.

During the 6 weeks post-caponisation, from the age of 6 weeks to 12 weeks, parameters analyzed were:

- body weight dynamics-individual weighing of birds weekly;
- the increase in growth-represented by the difference in weight of the birds at the end of each study week and the weight of the birds at the beginning of each study week;
- food consumption - the total feed consumption (kg n.c./period), the average daily consumption (g n.c./cap/day) and the food conversion index (kg n.c./kg increase) were established;
- mortality rate - the number of roosters out of the group.

Where applicable, the data obtained were statistically processed, calculating the arithmetic mean, the standard deviation of the mean and the coefficient of variation.

RESULTS AND DISCUSSIONS

Body weight dynamics. At the beginning of the study, when the roosters were 6 weeks old, their body weight was 148.5 g between the two groups, the average weight of the roosters in LE was 1295 g, and the average weight of those of LM was 1146.50 g.

In the first week after caponisatiog, at the age of 7 weeks, LE recorded an average weight of 1268.5 g, while LM recorded an average weight of 1478, 11 g. Weight loss of LE birds was caused by factors of preoperative stress (fasting for 24 hours) and postoperative (fasting for 6 hours). Two weeks after the caponisation operation, the LE recorded an average weight of 1589.43 g, while the LM recorded an average weight of 1927.33 g. At 9 weeks, the average body weight of the LE was 1854.86 g, and for the roosters from LM was 2263.13 g. In the fourth week, after caponisation, the average body weight of LE was 1987.86 g, while for LM was 2455, 33 g. At the age of 11 weeks, the average body weight of the roosters in LE was 2145 g, and those in LM was 2530 g.

At the end of the study, at 6 weeks post-caponisation, the average body weight of the castrated birds was 2419.17 g, while the LM roosters had an average body weight of 2488 g.

The value of the coefficients of variation (V% = 8.76-16.27 LE and respectively, V% = 6.89-9, LM) indicates a mean variability of the studied character (Table 1).

Table 1 Weight dynamics of the studied birds

The age of birds (Weeks)	LE		LM	
	$\bar{X} \pm s_{\bar{x}}$ (g)	V%	$\bar{X} \pm s_{\bar{x}}$ (g)	V%
6	1295±25.36	8.76	1146.5±30.51	8.41
7	1268±46.92	11.10	1478.44±41.44	8.41
8	1589.43±97.79	16.27	1927±56.79	8.84
9	1854.29±96.09	13.71	2263.13±69.83	8.72
10	1987.86±96.13	12.80	2455.33±77.07	7.69
11	2145±103.63	12.78	2530±77.95	6.89
12	2419.17±136.34	12.79	2488±100.98	9.08

Feed consumption and growth increase.

In the post-caponisation period (from the age of 6 weeks to 12 weeks) LE recorded an average daily consumption of 127.32 g / head / day, with a feed consumption per period of 44.29 kg and an average value of growth increase of 1124.17 g / head / period. The food conversion index in the post-caponisation period was between 1.93 kg n.c / kg increase and 6.05 kg n.c / kg increase.

Regarding LM, the average daily consumption of feed in the same period was 127.08 g / head / day, the amount of feed consumed in this period was 37.75 kg. Regarding the growth increase in the analyzed period, LM registered an average value of 1341.56 g / head / period. The feed conversion index for LM was between 1.56 kg n.c / kg increase and 11.8 kg n.c / kg increase (Table 2, Table 3).

Table 2 Consumption of compound feeds in the studied birds

Specification	LE	LM
Average period Average daily consumption (g / head / day)	127.32	127.08
TOTAL Feed consumed (kg / lot / period)	44.29	37.75
TOTAL Growth increase (g / head / period)	1124.17	1341.56
Feed conversion rate period (kg n.c./kg increase)	4.5	3.76

Table 3 Growth increase recorded during the post-caponisation period

LE				LM		
Age (weeks)	Body weight		Growth increase (g / head / period)	Body weight		Growth increase (g / head / period)
	Beginning of the week (g)	The end of the week (g)		Beginning of the week (g)	The end of the week (g)	
7	1295	1268	-27	1146.5	1478.44	332
8	1268	1589.43	321.43	1478.44	1927	448.56
9	1589.43	1854.29	264.86	1927	2263.13	336.13
10	1854.29	1987.86	133.57	2263.13	2455.33	192.2
11	1987.86	2145	157.14	2455.33	2530	74.67
12	2145	2419.17	274.17	2530	2488	-42
TOTAL period			**1124.17**	TOTAL period		**1341.56**

Mortality rate. At the end of the study period, the mortality rate in the experimental group LE was 70%, while in the case of LM it was 50%. In week which caponisation operation was performed (removal of the testicles) the LE mortality rate was 65%, this being determined by the breaking of the sublumbar venous plexus, which is located in the immediate vicinity of the testicles, resulting fatal hemorrhage. The mortality rate for LM was 10%, caused by a mechanical accident during the weighing operation.

In the first week after the caponisation, the mortality rate was 0% for both groups. At the age of 8 weeks, LE recorded a mortality value of 22.23% caused by *Mycoplasma Gallisepticum*, the birds were diagnosed with avian respiratory mycoplasmosis. At the age of 9 weeks, a mortality rate of 11.11% due to avian respiratory mycoplasmosis was recorded for LM. The same group (LM) recorded a mortality rate of 25% in the following week, the cause being the same, avian respiratory mycoplasmosis. At the age of 11 weeks, LM recorded a new loss of group, the mortality rate being 16.66%, the cause being the contamination of birds with *Mycoplasma Gallisepticum.* At 6 weeks post-caponisation, LE recorded a mortality of 14.28%, caused by respiratory problems caused by avian respiratory mycoplasmosis (Table 4).

Table 4 Mortality rate of the roosters studied

Age (weeks)	LE				LM			
	Effective		Out of effective		Effective		Out of effective	
	Beginning of the week (heads)	The end of the week (heads)	Heads	%	Beginning of the week (heads)	The end of the week (heads)	Heads	%
6	20	9	11	65	10	9	1	10
7	9	9	0	0	9	9	0	0
8	9	7	2	22.23	9	9	0	0
9	7	7	0	0	9	8	1	11.11
10	7	7	0	0	8	6	2	25
11	7	7	0	0	6	5	1	16.66
12	7	6	1	14.28	5	5	0	0
TOTAL period			**14**	**70**	TOTAL period		**5**	**50**

CONCLUSIONS

The results regarding the productive performances of the castrated roosters from the Transylvanian Neked Neck breed led to the following conclusions:

- At the end of the study period LE recorded a body weight lower by 68.83 g compared to LM, which is a small difference given the stress to which the birds in LE were subjected, as well as the fact that until the time of slaughter 8 more weeks will pass.
- Regarding the average daily consumption of feed, the difference between of two lots taken into analysis was negligible, thus for LE registering a value of 127.32 g / head / day, while for LM it was 127, 08 g / head / day. The average growth increase for LE birds was 1124.17 g / head / period, and for the control group LM 1341.56 g / head / period.
- In terms of mortality rate, in case of LE, were 70% over the entire study period, exceeding the value of 50% mortality, provided by the literature.

The results cannot be considered conclusive given that the differences between the two lots will be obvious at the time of slaughter, at 18 weeks old.

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