STUDIES ON THE PRODUCTIVE PERFORMANCE OF HUBBARD 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

Capons are male chickens whose testicles have been surgically removed, resulting in deficiencies in the production of androgen hormones, the effect materializing in a very efficient conversion of feed, fat deposits mainly in the abdominal area and high quality meat. The research took into account the productive performance of Hubbard roosters in the post-claping period. In this sense, were constituted two groups of birds, the experimental group LE consisting of 20 heads and the control group LM consisting of 10 roosters. At the age of 6 weeks, the rooster of LE underwent the operation of removing the testicles (claponisation) by the surgical method, making an incision in the last intercostal space. At the end of the study period (12th week of life) the mortality rate was 60% for LE, the average growth rate was 1334 g / head / period, an average daily consumption 127.46 g / head / day and a value of the feed conversion index 3.32 kg nc / kg body weight. As for the LM roosters, the average growth increase recorded in the same period was 1789.5 g / head / period, with an average daily consumption of 127.75 g / head / day and feed conversion rate 2.47 kg nc / kg corp.

Key words: capon, Hubbard, growth, feed consumption, mortality rate

INTRODUCTION

The term *capon* comes from ancient Rome and refers to a castrated and specially fattened rooster. The castration (claponization) procedure was used long time ago before Christ, in China, Greece and Rome. In Europe, claponization was first associated with a religious ritual, making offerings to the Gods. In Rome, this procedure was performed to increase the body weight of roosters in response to Lex Faunia, which was adopted by the Roman Senate in 162 BC. to save food; fattening the capons has proven to be an extremely effective method for obtaining meat as a raw material [9].

Castration of roosters is widely practiced in Italy, France, Taiwan, China and the USA, where roosters are marketed as high quality products [7]. 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".

Castration can cause changes in the appearance of roosters as well as changes in behavior [1]. Compared to uncastrated roosters, capons have a better metabolism and reach higher body weights, and their flesh is more delicate and juicy [8]. Castrated roosters are characterized by large deposits of adipose tissue, especially in the abdominal area, which is considered to be a beneficial effect on improving taste properties, this aspect being very important for consumers who increasingly demand tasty products [5] [6] [7]. At the same time, certain consumer groups want products with special quality attributes that distinguish them from conventional poultry products.

[*]Corresponding author:
cipriana.cuciureanu@yahoo.com
The manuscript was received: 23.09.2020
Accepted for publication: 16.04.2021

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The benefits of castrating the roosters have been known for a long time. Sterilized birds are characterized by higher weight gain and better feed conversion, and their final weight is 10-20% higher compared to roosters [4].

According to studies in the field, the capping operation ensures a batch survival rate of 50-55% [3].

MATERIAL AND METHOD

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

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, at the time the roosters were 6 weeks old, the average weight of LE was 1546 g, while the average weight of LM was 1343.16 g.

In the first week after caponisation, at the age of 7 weeks old, the roosters in the LE recorded an average weight of 1766 g, while the birds in the LM recorded an average weight of 1771.33 g. Two weeks after the caponisation operation, the average number of birds in LE had an average weight of 1980 g, while those in LM had an average weight of 2178.33 g. At 9 weeks of age, the average body weight of LE was 2145 g, and of LM roosters was 2511.66 g. In the fourth week after caponisation the average body weight of LE was 2573 g, while LM had an average value of 2623.83 g. At the age of 11 weeks, the weight of average body weight of roosters in LE was 2700 g, and for LM the average was 3004.16 g.

At the end of the study, at 6 weeks post-caponisation, the body weight of the castrated specimens was 2880 g, while the LM roosters had an average body weight of 3132.5 g. The difference in weight between the two groups at the end of the study was 252.5 g.

The value of the coefficients of variation (V% = 4.84 - 15.15 LE and respectively V% = 8.59 - 13.61, LM) indicates a mean variability of the studied character (Table 1).

Feed consumption and growth increase. In the post-caponisation period (from the age of 6 weeks to 12 weeks) the birds from LE recorded an average daily consumption of 127.46 g / head / day, with a feed consumption of 57.15 kg and a value of the growth increase of 1334 g / head / period. The food conversion index in the post-caponisation period was between 1.12 kg n.c / kg increase and 7 kg n.c / kg increase.

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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	1546±16.74	4.84	1343.16±43.83	10.32
7	1766±31.81	6.97	1771.33±51.60	9.21
8	1980±57.69	9.22	2178.33±74.71	10.85
9	2145±96.16	12.90	2511.66±74.26	9.35
10	2573±115.72	12.72	2623.83±71.27	8.59
11	2700±132.47	13.88	3004.16±136.33	13.61
12	2880±154.27	15.15	3132.5±121.237	10.95

As for the birds in LM, the average daily consumption of feed in the same period was 127.75 g / head / day, the amount of feed consumed in this period was 51.13 kg. Regarding the growth increase in the analyzed period, the roosters from LM registered an increase of 1789.5 g / head / period. The feed conversion index for them was between 1.55 kg n.c / kg increase and 7 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)	127.46	127.75
TOTAL Feed consumed (kg / lot / period)	57.15	51.13
TOTAL Growth increase (g / head / period)	1334	1789.5
Feed conversion rate period (kg n.c./kg increase)	3.87	2.83

Table 3 Growth increase recorded during the post-caponisation period

Age (weeks)	LE			LM		
	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	1546	1766	220	1343	1771.33	428.33
8	1766	1980	214	1771.33	2178.33	407
9	1980	2145	165	2178.33	2511.66	333.33
10	2145	2573	428	2511.66	2623.83	112.17
11	2573	2700	127	2623.83	3004.16	380.33
12	2700	2880	180	3004.16	3132.50	128.34
TOTAL period			**1334**	TOTAL period		**1789.5**

Mortality rate. At the end of the study period the LE mortality rate was 60%, while in the case of LM it was 20%. Thus, at the level of LE 25% of the initial number of roosters came out of the group, following the castration operation resulting in fatal hemorrhage caused by breaking of the sublumbar venous plexus that is in the immediate vicinity of the testicles. Another cause that determined 7 exits from the group LE, respectively 2 heads LM was avian respiratory mycoplasmosis disease caused by *Mycoplasma Gallisepticum* (Table 4).

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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	15	5	25	10	10	0	0
7	15	10	5	25	10	10	0	0
8	10	9	1	10	10	10	0	0
9	9	8	1	10	10	10	0	0
10	8	8	0	0	10	9	1	10
11	8	8	0	0	9	8	1	10
12	8	8	0	0	8	8	0	0
TOTAL period			**12**	**60**	TOTAL period		**2**	**20**

CONCLUSIONS

The results of the productive performance of Hubbard castrated roosters led to the following conclusions:

- at the end of the study period, the roosters from LE registered a body weight 252.5 g lower than the birds from LM, determined by the stress preoperatively;
- regarding the average daily consumption of feed, the difference between the two lots taken into analysis was negligible, thus LE registering a value of 127.46 g / head / day, while for LM it was 127.75 g / head / day. The growth increase of the roosters in LE was 1334 g / head / period, and for the control group 1789.5 g / head / period.
- mortality rate, in case of LE, were 60% for the entire study period, and for LM the value was 20%.

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

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