

RESEARCH ON THE MEAT PRODUCTION OF CAPONS OBTAINED ON BASE OF THE TRANSYLVANIAN NAKED NECK BREED

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Abstract

The research focused to evaluate the influence of caponisation (testicle extraction) on meat production in the case of roosters belonging to the breed Transylvanian Naked Neck. In this sense, we have got two batches, which one consisted of castrated roosters at the age of 7 weeks (Lexp) and one, formed of uncastrated specimens (Lm); males from the two batches were raised under identical growing conditions, received the same combined feed and were slaughtered at the same age (140 days). The data obtained indicated that the slaughter yields, determined both immediately after slaughter and after 24 hours of refrigeration, were better for uncastrated roosters (Lm), more exactly, being higher by 2.38% and 3.28% than in the case of capons (castrated specimens). In contrast, for participation rates for the anatomical parts with commercial interest was higher for capons (Lexp), in case of wings (higher by 1.12%) and the upper thighs (by 0.59%), the drumstick (by 0.62%).) and the back with head and feet (by 1.43%); on the other hand, for uncastrated roosters, there was found a better percentage for breast, 3.77% higher than castrated ones. The establishment of the meat / bone ratio highlighted the beneficial influence of the castration operation, the ratio registered a value of 7.99 / 1 for capons (Lexp) and a value of 8.97 / 1 for uncastrated roosters (Lm). Regarding the weight of the edible offal, it can be said that it was better for the capons (Lexp) for the gizzard (0.97 g) and for the liver (11.06 g); while, uncastrated roosters (Lm) were found to have a heart weight higher with 1.45 g than castrated roosters. The surgery of capping (orchidectomy) the Transylvanian Naked Neck roosters ensures a slightly better weight of most of the anatomical parts with commercial interest, heavier weights of the main edible offal, but also a good ration of meat/bones; we recommend continuing research in this direction.

Key words: capon, Transylvanian Naked Neck breed, dressed yield, edible offal, quantitative meat production, ration meat/bones

INTRODUCTION

Although the caponisation of birds has been known for centuries, this procedure does not apply in large farms, because they operate on super intensive breeding principles, in order to maximize technical and economic efficiency.

The main objectives of capping roosters are to ensure a rapid weight gain of birds (sexual instinct is abolished) and a superior quality of meat (capons deposit fat in all anatomical parts, including between muscle fibers), the end result being high selling

price, which can be obtained on the market [1].

According to European Union law, the capon is defined as a male bird, surgically castrated before reaching sexual maturity and slaughtered at a minimum age of 140 days; after castration, the capons are fattened for at least 77 days [2].

In our country there are very few capon breeders, which offer for sale this category of birds only around the winter holidays.

For the mentioned reasons, through this paper we set out to study at what level is the quantitative production of meat for capons obtained on the basis of the Transylvanian Naked Neck breed raised in micro-experiment conditions.

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MATERIAL AND METHOD

The biological material was represented by 30 roosters belonging to the Transylvanian Naked Neck breed, divided into two groups of experience (experimental group-Lexp, consisting of 20 chapters; control group-Lm, consisting of 10 chapters).

The difference between the groups was that the males from Lexp underwent surgical castration at the age of 7 weeks. Castration of roosters was performed by the method of bilateral laparotomy in the last intercostal space, puncturing the air sacs, bring to the fore the testicles, by means of a special forceps, then performing orchidectomy by unlimited torsion. The wound suture was made in a continuous thread.

The breeding of the birds took place in the conditions provided by the biobase of the University for Life Sciences from Iași, in a specially arranged space, on permanent bedding, in breeding pens where was ensured a density of 10 birds / pen. Both batches were raised under identical growing conditions, received the same combined feed characterized by a protein level of 17% and an energy value of 2800 kcal / kg.

At the age of 20 weeks, all the birds were slaughtered, on which occasion the quantitative meat production was evaluated, in the light of the following indicators.

Yield at slaughter

It was calculated as the percentage ratio between the weight of live birds and the weight of carcasses resulting from their slaughter. It was calculated immediately after slaughter of the birds and 24 hours after slaughter, during which time the carcasses were stored at a temperature of +2 °C.

The percentage of the trance portions participation (wings, breast, upper thighs, drumsticks, back with head and feet)

Each trance portion was weighed individually, then reported to the weight of the carcass from which it came.

Weight of edible offal (heart, liver and gizzard)

These were weighed individually, using the analytical balance.

Meat/bones ratio

Was calculated based on the weight of the meat and bones resulting from the deboning process.

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

RESULTS AND DISCUSSIONS

Yield at slaughter

The calculations performed for the group of uncastrated roosters (Lm) showed an average value of the slaughter yield (immediately after slaughter) of 72.17±0.61%, with limits between a minimum of 70.33% and a maximum of 73.98%; the coefficient of variation for this characteristic registered a value of only 1.90%, which denotes a very good homogeneity at batch level.

In case of castrated roosters (Lexp group), the average yield, immediately after slaughter was 69.79 ± 1.87%; the lowest value was 64.20%, and the highest was 73.09%, hence a low coefficient of variation of only 5.98%, an aspect that highlights the homogeneity within the analyzed group.

The slaughter yield established for the Lm (uncastrated roosters), at 24 hours after slaughter, recorded an average value of 71.76±0.62%, against a minimum of 69.78% and a maximum of 73.47%; the very small coefficient of variation (1.94%) indicates the very good homogeneity of the studied character.

For the roosters that formed the experimental group (capons), the slaughter yield resulting after 24 hours from slaughter was at an average level of 68.48 ± 2.65%, with limits between a minimum of 58.95% and a maximum of 72.61%. The coefficient of variation was 8.65%, indicating the homogeneity of the character at batch level (tab. 1 and fig. 1).

Table 1 Slaughter yields average obtained for the Transylvanian Naked Neck capons and roosters

	immediately after slaughter				24 hours after slaughter			
	$\bar{X} + S_x$ (%)	V %	Min. (%)	Max. (%)	$\bar{X} + S_x$ (%)	V %	Min. (%)	Max. (%)
Lexp	69.79±1.87	5.98	64.20	73.09	68.48±2.65	8.65	58.95	72.61
Lm	72.17±0.61	1.90	70.33	73.98	71.76±0.62	1.94	69.78	73.47

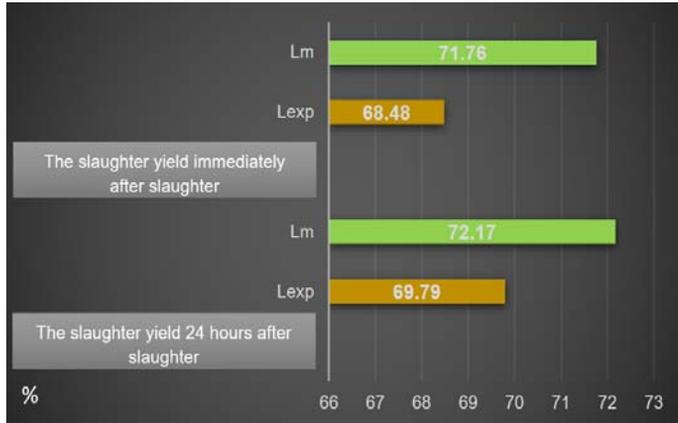


Fig. 1 Slaughter yields average obtained for the Transylvanian Naked Neck capons and roosters

The percentage of the trance portions participation (wings, breast, upper thighs, drumsticks, back with head and feet)

After slaughter, the carcasses were refrigerated for 24 hours, then weighed, cut into anatomical portions of economic interest (wings, breast, upper thighs, drumstick, back with head and feet). In order to establish the participation quota of each anatomical

portion, they were weighed and related to the weight of the carcass.

In the case of castrated roosters (Lexp) the wings accounted for 9.93% of the carcass weight, the breast entered the carcass in a percentage of 26.34, the upper thighs accounted for 16.34% of the carcass weight, while the drumstick accounted for 14.62%, and the back with head and feet represented 32.76% of the entire carcass (Fig. 2).



Fig. 2 The percentage of the trance portions participation

Regarding the roosters from the control group (Lm), the proportions of the anatomical portions were: 8.81% wings, 30.11% breast, 15.75% upper thighs, 14.00% drumstick, 31.33% back with head and feet (Fig. 2).

Weight of edible offal (heart, liver and gizzard)

At the time of evisceration and sanitization of the carcasses resulting from slaughter, the

edible offal were selected: heart, liver, gizzard and were weighed using the analytical balance.

In the case of capons (Lexp), was recorded an average heart weight of 17.06 g, while the weight of the liver was 61.29 g, and the gizzard weighed 44.80 g (Fig. 3).

For uncastrated roosters (Lm) the heart weight was 18.51 g, the liver weighed 50.23 g, while the gizzard weighed 43.82 g (Fig. 3).

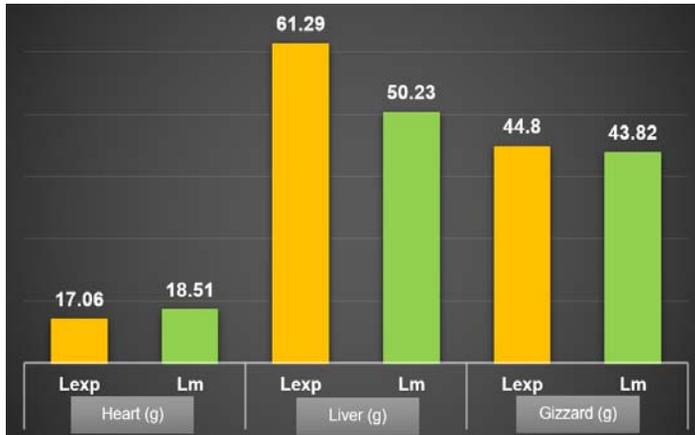


Fig. 3 The weight average of the edible offal

Meat/bones ratio

After plucking of down, evisceration, weighing the carcasses, slicing into anatomical portions and weighing them, boning was performed with the aim of completely removing the meat from the bones.

At the age of 140 days, for castrated roosters (Lexp) for the meat/bones ratio, was obtained the value of 7.99/1, the calculated minimum being 7.95/1, while the maximum recorded was 8.08/1 (Tab. 2). At the same age, for the roosters from the control batch (uncastrated roosters) was registered an average value of the meat/bones ratio of 8.97/1, with a minimum of 8.83/1 and a maximum of 9.06/1 (Tab. 2).

Table 2 Ratio meat/bones

	$\bar{X} + S_x$ (%)	V %	Min. (%)	Max. (%)
Lexp	7.99/1±0.02	0.65	7.95/1	8.08/1
Lm	8.97/1±0.04	1.0	8.83/1	9.06/1

CONCLUSIONS

The values obtained for the capons belonging to the Transylvanian Naked Neck breed, following the analysis of the performances of the quantitative meat production, led to the following conclusions:

- the slaughter yield, both determined immediately after slaughter and that established after 24 hours of refrigeration, was better for uncastrated roosters (Lm), being higher by 2.38% and respectively 3.28% than in capons (castrated specimens);
- the participation rate of the trance portions participation was higher for the capons (Lexp), in case of the wings (higher by 1.12%) and in the upper thighs (by 0.59%), drumstick (by 0.62%) and of back with head and feet (by 1.43%); in uncastrated roosters a better proportion of the breast was found, higher by 3.77% than in castrated ones;
- the establishment of the meat/bone ratio highlighted the beneficial influence of the castration operation, the ratio registered a

value of 7.99/1 for capons (Lexp) and a value of 8.97/1 for uncastrated roosters (Lm);

- regarding the weight of the edible offal, it can be said that it was better for the capons (Lexp) in case of gizzard (0.97 g) and liver (11.06 g); while, uncastrated roosters (Lm) were found to have a heart weight higher with 1.45 g than castrated roosters.

The surgery of capping (orhidectomy) the Transylvanian Naked Neck roosters ensures a slightly better weight of most of the anatomical parts with commercial interest, heavier weights of the main edible offal, but also a good ration of meat/bones; we recommend continuing research in this direction.

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