QUANTITATIVE MEAT PRODUCTION IN TRANSYLVANIAN NAKED NECK CHICKENS

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Abstract

In many countries, meat and eggs obtained from local breeds or populations are preferred, both out of respect for the national genetic heritage and due to the clearly superior nutritional and sensory characteristics compared to those from industrial hybrids. The only chicken breed originating in Romania is the Transylvanian Naked Neck, which belongs to the dual-purpose group (meat and eggs) and is characterized by remarkable organic resistance and a very good adaptability, especially in warmer regions. The study was conducted on male birds of the Transylvanian Naked Neck breed raised in an extensive system until the age of 120 days. At the time of slaughter, the live weight of the birds was 2115.86 g, and the weight of the chilled carcasses was 1495.28 g, resulting in a dressing percentage of 70.67%. Relative to the cold carcass weight, the breast accounted for 19.48%, the legs for 21.54%, the wings for 12.07%, and the giblets for 27.72%; the head, neck, and feet had a combined share of 19.19%. The presented data indicate that the Transylvanian Naked Neck breed ensures a satisfactory quantitative meat production and can represent a valuable genetic resource for free-range production systems.

Key words: *Transylvanian Naked Neck, slaughter yield, anatomical portions, internal organs.*

INTRODUCTION

In many countries, meat and eggs obtained from birds of local breeds or populations are preferred, both out of respect for the national genetic heritage [3, 4, 7] and for the nutritional and sensory characteristics clearly superior to those from industrial hybrids [1, 2, 6, 7].

The only breed of chickens originating in our country is the Transylvanian Naked Neck, included in the mixed meat-egg breed group and characterized by a special organic resistance and a very good acclimatization power, especially in warm areas [8, 10, 17].

The origin of this breed is quite controversial, with some authors considering that it originated in South Africa ("Kaalnek") from where it reached Europe, spreading to countries such as Italy (Sorrentina dal collo nudo), France (Race a' cou nu), England (Baldnecked fowl of Transylvania), Holland (Naakhalzen) or Germany (Siebengurgen nackhalse) [12, 13, 14]; other authors (Bernard Boack in the work Siebenburgen, die heimat des Nackthalshuhnes) claim that the homeland of the bare-necked hen is Transylvania [5, 9].

In 1875 the first international poultry exhibition took place in Vienna at which two breeders from Sighisoara (V. Szeremlei and V. Hohenburg-Onderka) exhibited for the first time specimens of this breed, obtaining the excellence award [15, 16].

The high productive potential and adaptability to different environmental conditions are the main elements of interest for the Transylvanian Neked Neck breed, which can be exploited for both meat and egg production.

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MATERIAL AND METHOD

The biological material was represented by a batch of Transylvanian Naked Neck chickens, which were raised in an extensive system, with access to the external environment and fed with a mixture of cereals made in a household diet (PB=16-17%; EM=2600-2700 kcal/kg).

The determinations regarding the quantitative production of meat were made on a number of five males, which were slaughtered at the age of 120 days

To calculate the monitored indicators, the live weight of the chicks and that of the resulting carcasses was determined, and based on them the slaughter yield was calculated; the weight of the carcasses and implicitly the calculation of the yield were performed both immediately after slaughter (hot) and after a period of 24 hours of refrigeration at +4°C (cold).

Each carcass was manually cut by a single operator, obtaining the main components (breast, thighs, wings and cutlery) as well as the secondary components (head, neck and claws); The anatomical portions resulting from the slicing were weighed individually, after which it was related to the weight of the carcass of origin.

The edible organs (liver, heart and gizzard) were cleaned, then weighed individually and related to the weight of the related carcass

RESULTS

Slaughter yield. The live weight of the studied birds ranged from 2091.02 g (minimum) to 2170.83 g (maximum), resulting in an average weight of 2115.86 g *(Table 1).*

Immediately after slaughter, the carcasses obtained were weighed, whose average weight was 1508.40 g, against the background of limits ranging from a minimum of 1455.77 g to a maximum of 1559.74 g; under these conditions, the slaughter yield registered an average value of 71.29% (minimum = 69.62%; maximum = 71.85%).

Table 1 Slaughter yield

Elements	Obtained Values		
	Average	*Min.*	*Max.*
Live Weight (g)	2115.86	2091.02	2170.83
Warm carcass (g)	1508.40	1455.77	1559.74
Hot Yield (%)	71.29	69.62	71.85
Cold carcass (g)	1495.28	1444.27	1546.28
Cold Yield (%)	70.67	69.07	71.23

After refrigerating the carcasses at +4°C for 24 hours, they were reweighed, obtaining weights ranging from a minimum of 1444.27 g to a maximum of 1546.28 g, with an average weight per batch of 1495.28 g.

The slaughter yield calculated on the cold carcasses showed an average value of 70.67%, with a minimum of 69.07% and a maximum of 71.23% as limits of variation.

Weight of anatomical portions.

The cutting of carcasses into anatomical pieces highlighted the potential of the breed in meat production, which is proven by the rather high proportions of components of commercial interest *(Table 2).*

Table 2 The anatomical portions dissected from the carcass

Cut part		Obtained Values		
		Average	*Min.*	*Max.*
Carcass	g	1495.28	1444.27	1546.28
	%	100.00	100.00	100.00
Breast	g	291.28	281.79	301.45
	%	19.48	19.50	19.50
Thing	g	322.08	315.50	337.85
	%	21,54	21.84	21.85
Wings	g	180.48	171.21	184.73
	%	12.07	11.85	11.95
Cutlery	g	414.49	397.30	425.38
	%	27.72	27.51	27.51
Head	g	78.50	77.25	82.66
	%	5.25	5.35	5.35
Neck	g	117.38	110.87	119.73
	%	7.85	7.68	7.74
Claws	g	91.07	90.35	94.48
	%	6.09	6.26	6.11

For example, the average weight of the breast was 291.28 g (minimum = 281.79 g; maximum = 304.45 g), which is a share of 19.48% of the carcass.

A somewhat better situation was observed for the thighs, whose average weight was 322.08 g (with a minimum of *315.50* g and a maximum of *337.85* g), respectively a share of 21.54% in the carcass structure (with limits in the range of 21.84-21.85%).

The average share of wings in the carcass structure was 12.07% (average weight of 180.48 g), with limits between the minimum of 11.85% (171.21 g) and the maximum of 11.95% (184.73 g).

The highest average participation rate was determined for cutlery, of 27.72%, due to the highest weight of all the pieces cut (414.49 g).

For the anatomical regions with low commercial value, average proportions of 5.25% (weight of 78.50 g) for the head, 6.09% (91.07 g) for the claws and 7.85% (117.38 g) were found, respectively; The values mentioned are reported relative to the average carcass weight.

Internal bodies. They are important for their role in the physiological and metabolic processes of birds.

In the situation analyzed by us, an average liver weight of 37.05 g was found, with limits in the range of 35.37-38.52 g; compared to the average weight of the carcasses, the liver weight was 2.48%.

The gizzards had the highest weight among the internal organs, in correlation with the specifics of the diet provided, respectively a mixture of coarsely ground cereals.

The average weight of the gizzards was 39.84 g (2.66% of the carcass weight), with a minimum weight of 38.07 g (2.63%) and a maximum of 41.39 g (2.68%) *(table 3).*

The hearts recorded the lowest average weight of only 14.19 g, which represented only 0.95% of the carcass weight; the limits of variation in the weight of this internal organ ranged from a minimum of 13.63 g (0.94% of the carcass) to a maximum of 14.96 g (0.97%).

Table 3 Internal Organs

Cut part		Obtained Values		
		Average	Min.	Max.
Carcass	g	1495.28	1444.27	1546.28
	%	100.00	100.00	100.00
Liver	g	37.05	35.37	38.52
	%	2.48	2.45	2.49
Gizzard	g	39.84	38.07	41.39
	%	2.66	2.63	2.68
Heart	g	14.19	13.63	14.96
	%	0.95	0.94	0.97

CONCLUSIONS

The data obtained show that the Transylvanian Naked Neck breed can achieve a good meat production, even under extensive breeding conditions.

Thus, at 120 days of age, the average weight of the males studied was 2115.86 g, resulting in carcasses whose average weight was 1508.40 g immediately after slaughter and 1495.28 g after 24 hours of refrigeration; Under these conditions, good slaughter yields were obtained, with values of 71.29% (hot) and 70.67% (cold), respectively.

The values obtained for the share of anatomical portions of economic interest highlight the double specialization of the breed (eggs-meat), these being 19.48% for the breast (291.28 g), 21.54% for the legs (322.08 g) and 12.07% for the wings (180.48 g); The cutlery accounted for 27.72% of the carcass structure (414.49 g), the head only 5.25% (78.50 g), while the neck had a proportion of 7.85% (117.38 g) and the claws of 6.09% (91.07 g).

The internal organs accounted for a total share of 6.09% of the carcass weight, of which 2.48% was the liver (37.05 g), 2.66% gizzard (39.84 g) and 0.95% the heart (14.19 g).

In conclusion, the Transylvanian Naked Neck breed is a genetic reserve of interest

for poultry farming in our country, at least for meat production.

To highlight the real potential of the breed, additional studies are needed to establish the levels at which the environmental growth factors and especially the quality of the administered feed must be ensured.

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