

STUDY ABOUT INFLUENCE OF FEED PARAMETERS ON SLAUGHTERING PERFORMANCES IN CERTIFICATE- TYPE BROILERS

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Abstract

In feed milling nutrient levels there should be established both chicks need and financial circumstances and any variation of nutrient composition should be followed by a prompt answer in slaughtering performances leading to a competitive feed cost and so to a competitive final product cost with no change in chemical meat composition.

Some values about carcass output and percentage of body parts in carcass were determined for this purpose using feed combination with variable parameters.

Experiments were performed at S.D.E. Avicola Moara Domneasă during 56 days with 150 birds (Ross 308) divided in three treatments based of nutritive value of combined feed given (CM, C1, C2). Data that was obtained during the experiment was processed and so it was noticed that the best commercial output was obtained in the group with constant nutritive parameters (CM – 81.4 ± 0.53%) and the best breast percentage from carcass was noticed in the group with constant nutritive parameters (CM – 25.9 ± 0.94%) and the best in leg percentage was noticed in the group with variable protein (C1 – 27.7 ± 0.54%).

Key words: Certificate chickens, carcass, output, performance.

INTRODUCTION

Quality standard of products is one of the base criteria in choices made by consumers of animal products. Technically and economically carcass quality is being a result of carcass size (weight, output, parts shares) and carcass conformation (muscles profile, fat layer, etc) (Tudorache et.al., 2010). Data about production performances, slaughtering output, cut shares and main internal organs from both poultry live weight and poultry carcass were registered and processed to establish the quality of produced carcasses (Tudorache et al., 2009; Waller, 2007).

MATERIALS AND METHODS

Experiment was performed at S.D.E. Avicola Moara Domneasca which is the research farm of the University of Agricultural Science and Veterinary Medicine Bucharest on broilers of type Bio supplied in three experimental variants with uniformity of body weight and sex percentage and the experimental plan in blocks was used. Plymouth Rock bared was used for this experiment and birds were raised

according to standard technology for this broiler and in the same management, feeding and watering conditions (Tudorache et al., 2012; Van et al., 2003).

Three treatments were performed for each experimental flock to determine quantitative and qualitative features and experiments were performed in the same time interval and on the same biological material and in the same unit.

Working schedule realized for broilers of type Bio was as following:

- treatment I (M): constant energy level and constant protein level;
- treatment II (E1): variable protein level and constant energy level;
- treatment III (E2): constant protein level and variable energy level.

5 groups by treatment with 10 heads each were used in all three experiments (table 1).

Groups were formed at one day of age with chicks from the same hatchery. Chicks came from parents of same age to diminish genetically influence on final results. Experimental interval had 84 days. Two phases feeding technology was used. Feed combination used in experiments was produces at

I.B.N.A. - Balotesti according to feeding requirements of the broiler used and based on the experimental schedule.

The following performance traits: live weight, feed consumption and livability were established for each treatment and they were followed weekly during the experiment.

Table 1. Work schedule for Certificat type broilers

Specification	U.M.	Phase		
		Rising		
		T ₁	T ₂	T ₃
Time	days	28	28	28
Flock	birds	50	50	50
Pens	no.	5	5	5
ME	MJ/kg	100	100	93.96
Protein	%	100	95.36	100

Specification	U.M.	Phase		
		Finishing		
		T ₁	T ₂	T ₃
Time	days	28	28	28
Flock	birds	50	50	50
Pens	no.	5	5	5
ME	MJ/kg	100	100	93.06
Protein	%	100	95.30	100

RESULTS AND DISCUSSIONS

Broilers weight gain is highly variable based on genetically potential of the hybrid, birds' sex and housing conditions during production. Phenotypical manifestation of the genetic potential depends mainly on feed quality and especially on feed protein and essential amino acids content. A good understanding of nutritional limits of commonly used feedstuffs is a key for both improvement of feed milling and feeding procedures and for better solutions to many problems with feed composition, consumption and usage and with carcass quality (Tudorache et al., 2009).

Production performances were established and based on them data about economical output and cut shares and main internal organs from both carcass and live weight cat and din carcass were registered and processed to establish the quality of products based on the structure of diets used (Tudorache et al., 2010). Table 2 (a, b, c) and figure 1 (a, b, c, d) are showing final production performances of the Certificat broiler. Their analyze has showing that average body weight at 8 weeks of age is varying between 2384.86 g in CM and 2224.2 g

in C1 but the treatment applied did not influence significantly the results obtained.

Table 2. Final production performances of the Certificat broiler

Specification	M.U.	Group	
		CM	
		X	Sx
Live weight	g	2384.86	56.09
Student Test	-	CM-C1=1.266	
Average daily gain	g	41.98	0.91
Student Test	-	CM-C1=1.280	
Feed intake	kg	2.54	0.16
Student Test	-	CM-C1=25.031	
Cumulative mortality	%	8.00	1.23
Student Test	-	CM-C1=0.283	

Specification	M.U.	Group	
		C1	
		X	Sx
Live weight	g	2224.20	69.88
Student Test	-	C1-C2=0.336	
Average daily gain	g	39.11	1.24
Student Test	-	C1-C2=0.045	
Feed intake	kg	2.65	0.01
Student Test	-	C1-C2=6.299	
Cumulative mortality	%	10.40	1.56
Student Test	-	C1-C2=0.024	

Specification	M.U.	Group	
		C2	
		X	Sx
Live weight	g	2269.60	64.57
Student Test	-	C2-CM=0.952	
Average daily gain	g	39.92 I	1.15
Student Test	-	C2-CM= 1.282	
Feed intake	kg	2.70	0.01
Student Test	-	C2-CM=22.161	
Cumulative mortality	%	10.20	1.11
Student Test	-	C2-CM=0.311	

Daily average gain is between 41.98 g in CM and 39.11 g in C1 with no statistically assured differences. Feed intake is minim in CM (2.54) and maximum in C2 (2.70) and all differences between groups are statistically assured. Cumulative mortality is high enough but insignificantly smaller in CM with 8% compared to C1 and compared to about 10% in the other groups. Difference C2 - CM is not statistically assured. So best results of 'certificat' broilers are also obtained in CM group with constant protein and energy level and with a significantly better feedstuff capitalization.

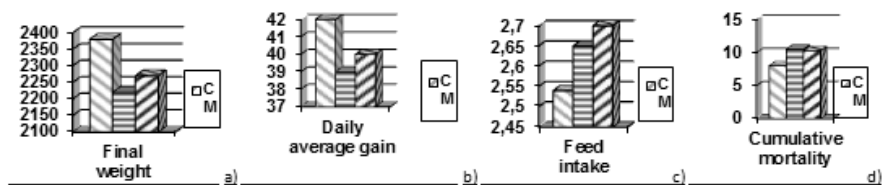


Figure 1. Final production performances of the Certificat broiler (a – final weight, b – daily average gain, c – feed intake, d – cumulative mortality)

Table 3 (a, b, c) is showing the slaughtering performances which is influencing the economical value if meat is given by quantity and the economical value if meat is given by quantity and quality of marketed meat. Analyze of data reveals that performances are different for each experimental group and each parameter (indicator) taken into account as following: commercial output is between $76.80 \pm 0.37\%$ in group C1 and $81.40 \pm 0.53\%$ in group CM; breast share from carcass is $21.50 \pm 1.35\%$ in group C1 and $25.90 \pm 0.94\%$ in group CM; legs share from carcass is between $27.30 \pm 0.56\%$ in group CM and $27.70 \pm 0.54\%$ in group C1; wings share from carcass is between $9.60 \pm 0.38\%$ in group CM and $9.90 \pm 0.37\%$ in group C1.

Table 3. Slaughtering performances of the Certificat broiler

Specification		Group C1	
		X	S _x
Output (%)		76.8	0.37
Brest Share (%)	Live weight	16.5	0.98
	carcass	21.5	1.35
Legs share (%)	Live weight	21.2	0.51
	carcass	27.7	0.54
Wings share (%)	Live weight	7.6	0.26
	carcass	9.9	0.37
Head share (%)	Live weight	3.6	0.14
	carcass	4.7	0.20
Gizzard share (%)	Live weight	1.8	0.11
	carcass	2.4	0.14
Back share (%)	Live weight	19.4	0.64
	carcass	25.3	0.74
Hart share (%)	Live weight	0.4	0.04
	carcass	0.6	0.05
Liver share (%)	Live weight	2.4	0.11
	carcass	3.1	0.15
Drumsticks share (%)	Live weight	3.8	0.34
	carcass	5.0	0.43

Specification		Group CM	
		X	S _x
Output (%)		81.4	0.53
Brest Share (%)	Live weight	21.1	0.67
	carcass	25.9	0.94
Legs share (%)	Live weight	22.2	0.47
	carcass	27.3	0.56
Wings share (%)	Live weight	7.8	0.35
	carcass	9.6	0.38
Head share (%)	Live weight	3.4	0.11
	carcass	4.2	0.11
Gizzard share (%)	Live weight	1.4	0.04
	carcass	1.7	0.05
Back share (%)	Live weight	19.5	0.48
	carcass	24.0	0.57
Hart share (%)	Live weight	0.5	0.02
	carcass	0.6	0.02
Liver share (%)	Live weight	2.0	0.11
	carcass	2.5	0.14
Drumsticks share (%)	Live weight	3.4	0.26
	carcass	4.2	0.30

Specification		Group C2	
		X	S _x
Output (%)		78.9	0.39
Brest Share (%)	Live weight	18.1	1.07
	carcass	22.9	1.43
Legs share (%)	Live weight	21.6	0.57
	carcass	27.4	0.70
Wings share (%)	Live weight	7.7	0.28
	carcass	9.8	0.39
Head share (%)	Live weight	3.8	0.18
	carcass	4.8	0.22
Gizzard share (%)	Live weight	1.8	0.13
	carcass	2.2	0.15
Back share (%)	Live weight	19.2	1.06
	carcass	24.3	1.24
Hart share (%)	Live weight	0.6	0.04
	carcass	0.7	0.05
Liver share (%)	Live weight	2.4	0.12
	carcass	3.1	0.16
Drumsticks share (%)	Live weight	3.8	0.40
	carcass	4.8	0.51

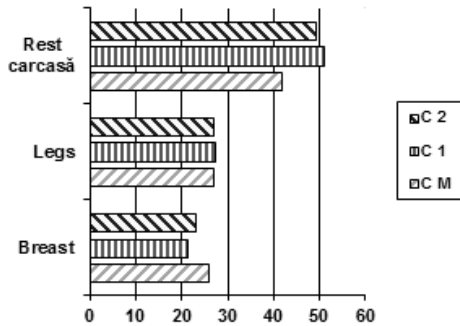


Figure 2. Shares of different carcass parts in Certificat broiler

In conclusion the group CM (which received a diet with constant protein and energy) offered best results about carcass quality for the Certificat broiler thanks to both economical output and percentage of valuable parts followed by the group with variable energy level of diet (C2).

CONCLUSIONS

- Live weight altered between 2224.20 ± 69.88 g in C1 group and 2384.86 ± 56.09 g in CM group;
- highest average daily gain was registered in CM (41.98 ± 0.91 g) and lowest average daily gain was registered in C1 (39.11 ± 1.24);
- feed intake altered between 2.54 ± 0.16 in CM group and 2.70 ± 0.01 in C2 group;
- cumulative mortality altered between 8.00 ± 1.23% in CM group and 10.40 ± 1.56 % in C1 group;

- commercial out put was between 76,80 ± 0,37 % la C1 and 81,40 ± 0,53, la Group CM;
- highest breast percentage was registered in CM group (25.90 ± 0.94 % from whole carcass) and highest legs percentage was registered in C1 group (27.70 ± 0.54 %);
- variation of nutrient percentages in broilers diet offered weaker slaughtering performances compared to situation when nutrient percentage are constant.

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