

STUDY ON UNIT COST OF CERTIFICATE-TYPE BROILERS

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Abstract

A production cost means all costs for inputs consumption performed by the enterprise for goods and services produced and offered. Production costs are very meaningful about business quality and it is a decision-making condition for every producer; lowest cost level is the standard in choosing the right option. These researches were intended to give an overview about these problems. Objectives were first to find unit costs for feeds and kg live weight to broilers type Certificate and second to reduce unit costs by changing energy and protein content of feeds for these broilers. Experiment was performed with Ross 308 chickens, raised according to the technology to produce ecological poultry meat type Certificate. Three experimental variants were used; respectively three treatments/each variant and experiment design was in pens. Experimental period was of 56 days of age; feeding technology used was bi-phase, as following: group CM, with constant energy and protein level, group C1, with constant energy and variable protein level and group C2, with variable energy and constant protein level. Major production performances were checked and slaughtering was followed by cutting and finally all data were processed and read statistically. Finally unit costs per kg processed feed (1,308 – 1,362 lei) and per kg live weight (5,532 – 5,667 lei) were analyzed.

Key words: certificate, cost per live weight, unit cost, weekly average gain

INTRODUCTION

Cost is an extremely useful economical tool for decision making about resource usage, production amount and structure, increasing or decreasing product range, technological innovation, etc., in market oriented economies. Input consume for making such goods and services is found in their prices. Production cost is included in price and it must be calculated because: resources are limited; a smaller production cost makes a higher income possible; a smaller production cost keeps your clients and satisfies your share partners, administration board and employees [1].

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reduce unit costs by changing energy and protein content of feeds for these broilers.

MATERIAL AND METHOD

Experiment was performed in S.D.E. Avicola Moara Domnească, experimental station of the University of Agriculture and Veterinary Science Bucharest, for Certificate type broilers, on three pen trials with even body weight and proportion of sexes in block trials. Chickens were Ross 308 and they were raised according to standard technology for this breed and in the same conditions of management, feeding and watering [3].

There were performed three treatments for every experimental flock to find bird's qualitative and quantitative performances and experiments were performed in the same time and with the same biological material and in the same unit.

Trial schedule was designed for Certificate chickens and it was as follows:

- treatment I (M): even energy and protein level;
- treatment II (E₁): variable protein level and even energy level;

- treatment III (E₂): even protein level and variable energy level;

In all the three treatments there were used 5 groups with 10 birds each were used by treatment (table 1).

Groups were formed with chickens from the same hatchery at day one. Chick's parents were of the same age to diminish genetic influence over results. Trial period was 56 days and feeding technology was biphasic. During trials it was used a processed feed produced in I.B.N.A. – Balotești according to the nutritional needs of chicks and based on the trial design.

Chickens live weight, feed intake and livability were the performance parameters established and checked weekly for every treatment and group during the trial.

Body weight was checked and registered weekly by individual weighting. Average daily weight gains, average weekly weight gains and average weight gains for whole trial period was calculated based on weight gain progression.

Processed feeds consumption was assessed by daily weighting of birds taking into account feeds left in feeders at the end of each week. From these data average feed consumptions were calculated.

Weekly and whole specific consumptions were calculated based on data about average weight gains and processed feed consumptions.

Mortality was registered each day and weekly mortality and mortality for whole raising period were assessed.

chicks representing average weight of the group were slaughtered.

After slaughtering by neck breaking chicks were plucked, scaled and cut and weights of carcass, breast, legs, wing, internal organs and the rest of the carcass were assessed.

Resulting data were registered and statistically processed and for every experimental group there were assessed cost by product unit for analyzed broiler types based on results obtained.

RESULTS AND DISCUSSIONS

Cost is a value expression for a consumption of lucrative factors. Expense became cost through consumption and cost is preceded by consumption. Reducing production costs is a priority and so there have to be analyzed in details expenses included in costs, their efficiency study and the study of relationship between production costs and production outcome.

Unit costs (fix, variable, total) are calculated by referring the global costs to products quantity. Conversely, cost size for whole production in one industry or another is given by the quantity of products produces and the unit cost.

If price for acquiring production factors is decreasing at a given level of consumption of production factors for product unit cost is decreasing and opposite. If production factors price is constant and their consumption for product unit is decreasing unit cost is also decreasing. Cost increase for product unit is also influenced by change of product characteristics, product quality, etc. Limited resources of raw materials and energy are asking for more scientifically knowledge about value engineering which essentially means obtaining a minimum cost with no compromise on friability and performance etc.

Unit costs by product were assessed based on structure and cost of combined feeds used, consumption and cost of other resources and final production performances of Certificate type broilers by experimental groups [2, 4].

Table 1. Work schedule for Certificate 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	93.92
Protein	%	100	95.36	100
Specification	U.M.	Phase		
		Finishing		
		T ₁	T ₂	T ₃
Time	days	56	56	56
Flock	birds	50	50	50
Pens	no.	5	5	5
ME	MJ/kg	100	100	93.06
Protein	%	100	95.30	100

Slaughtering performances were assessed at 56 days of age by slaughtering 25 % of flock. Chicks were scaled before slaughtering and

Table 2. Final production performances of Certificate type broilers

Specification	UM	Group		
		CM	C1	C2
Live weight	g	2384,86	2224,20	2269,60
Feed intake	kg	2,54	2,65	2,70
Live ability	%	92,00	89,60	89,80
Slaughtering output	%	81,40	76,80	78,90
Carcass weight	g	1941,27	1708,18	1790,71

Final production performances of Certificate type broilers are shown in table 2 and figure 1. Average weight at 8 weeks of age is between 2384,86 g for group CM and 2224,2 g for C1. Protein or energy variations had no influence on results and there were no statistically assured differences between results. Most favorable specific consumption is in CM, with constant protein and energy level, and the less favorable one is in C2, with variable protein and energy level, between 2,54 – 2,70. All differences between groups are statistically assured. Chickens live ability is also better in CM (mortality 8,0 %) and higher in C2 (mortality 10,2 %), but differences are not statistically assured. In conclusion, best results in production of Certificate type broilers are those of variant CM, with feed consumption significantly lower, compared to the other variants, and slaughtering performances are showing that the best efficiency of Certificate type broilers, of 81,40%, is obtained at variant CM, with constant protein and energy.

FEED UNIT COST ANALYZE

Aims of experimental plans were both revealing unit cost by product at Certificate type broilers and a possible reduction of production costs by decreasing feed unit cost, because when a rise of feedstuffs cost brings a rise of feed cost first instinct is to find a solution to stop financial impact on our business, which usually is simply decreasing recommended nutritional parameters in feeds, to reduce feed cost by tone [6].

For this reason, average unit price of feeding for every experimental group was found based on processed feed consumption by production phase and production cost for every feed combination (Table 3 and Fig. 2).

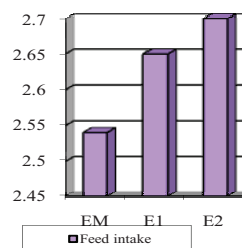
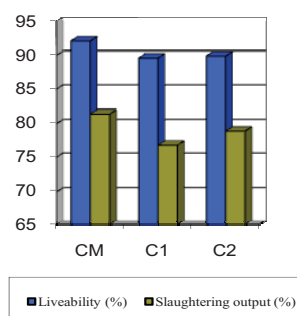
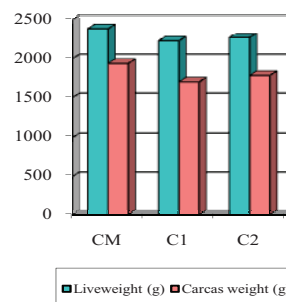


Fig. 1. Final production performances of Certificate type broilers

Table 3. Average cost of processed feed used for broilers type Certificat

Specification	Time (days)	Processed feed consumption (grams)	Production cost (lei/kg)	Average cost (lei/kg)
CM	Starter	0 - 28	1766,70	1,39
	Finisher	29 - 84	4290,84	1,35
C1	Starter	0 - 28	1547,88	1,35
	Finisher	29 - 84	4346,25	1,32
C2	Starter	0 - 28	1735,68	1,33
	Finisher	29 - 84	4392,24	1,30

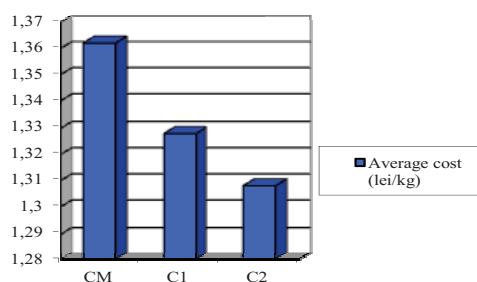


Fig. 2. Average cost of processed feed used for Certificate type broilers

Presented data are showing that at broiler type Bio production cost for combined feeds are varying by experimental group and unit cost are varying between 1,308 lei/kg to C2 and 1,362 lei/kg, to group CM.

UNIT COST BY KG LIVE WEIGHT ANALYZE

Desire to reduce feed cost per ton as much as possible should always be in agreement with maintaining or increasing profit. It is very important to understand the difference between reducing feed cost by bird and reducing feed cost by kg live weight or carcass parts. Feed cost by bird would be little diminished by reducing nutritional parameters of feeds. Performances would be reduced and results about live weight would mean rising production costs [6].

Unit cost for live weight meat production for every experimental group assessed were measured based on performances obtained in experiment (average daily weight gain, feed intake and livability), prices and resources consumption. These are between 5532,92 lei/ton in group CM, 5658,80 lei/ton in C1 and 5667,56 lei/ton in C2.

There are obvious differences about unit costs due to expenses for biological material, mortality losses, bigger or smaller compared to control group, and feed costs, due to both price differences between feeds used for the three experimental groups and higher or smaller feed intake compared to control group. So there are

differences between Certificate type broilers (table 4 and figure 3) between +125,88 lei/ton in group C2 and +133,64 lei/ton in group C1. Analyze of results reveals that diminishing nutritive composition of processed feeds are leading to lower feed costs but also to lower production performances (body weight, slaughtering output). These effects are telling that if we are dealing with a rise of feed cost reducing nutritive levels in feeds would be an answer but financial impact on whole business should be evaluated before taking such a decision.

Table 4. Cost difference structure for live meat production in Certificate type broiler

Specification	Total difference	Biological material	Feed intake	Processed feed cost	
C1	Value - lei	+133,64	+73,92	+146,08	-86,36
	Structure - %	100	55,31	109,31	64,62
C2	Value - lei	+125,88	+53,76	+209,29	-137,16
	Structure - %	100	42,71	166,26	108,97

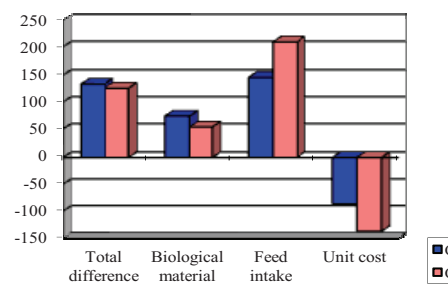


Figure 3. Cost difference structure (variants C1 and C2 compared to CM) for live meat production in Certificate type broilers

CONCLUSIONS

Researches described in this paper are leading to following conclusions:

- There are different production performances (average daily weight gain, feed intake, live ability) between experimental groups and best production performances are usually in control group CM;
- average cost of processed feed is different by experimental group and is between 1,308 lei/kg in C2 and 1,362 lei/kg in group CM;

- cost of product „live meat production” is between 5532,92 lei/ton in group CM and 5667,56 lei in C2;
- decreasing nutritive composition of processed feeds conduce is leading to lower feed costs but also to lower production performances;
- these effects are telling that if we are dealing with a rise of feed cost reducing nutritive levels in feeds would be an answer but financial impact on whole business should be evaluated before taking such a decision.

ACKNOWLEDGEMENTS

This research work was carried out with the support of Ministry of Agriculture, Forests and Rural Development and was financed from Project PS, No. 349/2006.

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