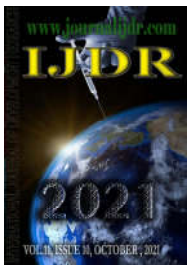
ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 11, Issue, 10, pp. 50889-50895, October, 2021
https://doi.org/10.37118/ijdr.23121.10.2021



RESEARCH ARTICLE OPEN ACCESS

INFLUENCE OF ADDITIONAL ORGANIC SELENIUM IN CONCENTRATE MIXTURES FOR DUCK FATTENING ON ECONOMICITY OF DUCK MEAT PRODUCTION

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ARTICLE INFO

Article History:
Received 28th August, 2021
Received in revised form
14th September, 2021
Accepted 11th October, 2021
Published online 30th October, 2021

Key Words:
dUck Fattening, Organic Selenium,
Duck Meat, Production Costs.

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ABSTRACT

In this paper, special attention is paid to the economics of fattening ducklings depending on the concentration of added organic selenium in concentrate mixtures for their fattening. The basic feature of duck fattening and duck meat production in a modern way is reflected in the application of the most modern technical and technological solutions, innovations, research and development, the use of marketing methods, in order to better market products and increase market share of duck meat. Great attention is paid to the economic aspect of production and everything is subordinated to that, ie how to provide producers with profitable business in the long run, stable growth and development of the company (or individual farm) with optimal costs.

Citation: ***Amir Zenunović, Husein Vilić, Refik Šahinović, Edin Ramić, Besim Salkić, Husejin Keran, Amir Hasić and Midhat Glavić et al.*** "Influence of additional organic selenium in concentrate mixtures for duck fattening on economicity of duck meat production*", International Journal of Development Research*, 11, (10), 50889-50895.

INTRODUCTION

Duck meat production, in a broader sense, includes the process from fattening one-day-old ducklings to the final product on the consumer's table. This process, according to the interdependence of technological and economic procedures, can be divided into three parts:

- Fattening ducks on farms;
- Slaughter, confectioning and processing of duck meat and
- Trade in meat, ready-made parts and duck meat products.

In the last 30 years, the time required to produce a fattened hybrid of ducks of approximately 3 kg body weight has been almost halved, from more than 11 weeks to less than 7 weeks (McKay, 1997). Advanced methods of selection, crossbreeding and genetic engineering are used, in order to find highly productive hybrids of fattening ducks with greater and better production possibilities. In order for production on poultry farms in general to be profitable, the necessary requirements must be met, which should be based on: keeping highly productive line hybrids, keeping only one hybrid and one age at a time, maximum farm use 5.5 to 6 rounds of broiler ducklings per year with the production of 33-35 kilograms of live body weight per 1 m² of floor area per shift, the optimal break between shifts for 10-15 days, strict adherence to prevention, disinsection and deratization measures, application of appropriate light (according to the cultivation instructions for each hybrid at a given moment keeps on the farm), using quality concentrate mixtures for fattening and regular control of body weight (Čavka, 2014). The conducted research should enable the selection of one of the three experimental groups of hybrids which, under the same technological conditions of keeping, with the difference of only the concentration of added organic selenium in concentrate mixtures for their fattening (0.2, 0.4 and 0.6%), gives the best production and financial results, which is an important decision for producers in the production of concentrate mixtures for duck fattening. With the application of modern technology of industrial keeping of fattening poultry and the use of highly productive hybrids, poultry production has been constantly increasing in recent years. The current task set before poultry production is how and in what way to produce the maximum amount of quality meat with the lowest possible total costs. In order to answer this question, many researchers have given their contribution in the part related to genetics and crossbreeding (hybridization) of different species, as well as to the improvement of technological conditions of production and quality of poultry nutrition. This type of agricultural production, unlike other crops, is characterized by a rapid turnover of capital (for 2 months on average), which can be up to 6 times a year. The turnover ratio of total assets shows how much sales revenue is generated in relation to the total assets engaged in the observed accounting period. The higher the turnover ratio, the more revenue is generated from sales of used

assets. Van Horne, Washowicz (2002) state that the business cycle is the time period from the moment of payment of purchased inventories to the collection of receivables based on sold goods and services. In addition to the economic aspect, animal welfare must not be forgotten. In general, minimal mortality, low morbidity, low or no risk of injury, good body condition, ability to interact socially, research and play, low levels of abnormal behavior and physiological signs of stress, including altered immune response, indicate that there are major problems animal welfare (European Commission Health & Protection Directorate - Genaral, 2000). Accordingly, Utnik-Banaś et al. (2014) pointed out that animal welfare can be endangered primarily by various environmental conditions such as temperature, humidity, the presence of harmful gases and the quality of the mat, and that the goal of farmers is to keep production costs as low as possible, with low food prices, makes their production more competitive.

Salihbašić et al. (2014) state that great attention is paid to the economic aspect of production during chicken fattening and everything is subordinated to that, ie how to provide producers with profitable business in the long run, stable growth and development of the company (or individual farm). The advantages of poultry fattening in general are manifested in the high degree of application of science and technology in the production and rapid turnover of capital. In this way, high productivity is provided (income and profit per m² of floor area of the farm), and at the same time lower production costs. This type of agricultural production, unlike other crops, is characterized by a rapid turnover of capital (for 2 months on average), which can be up to 6 times a year (Salihbašić et al. 2014). In order to be able to compile in a quality manner the financial statements for the observed accounting period (balance sheet, income statement and cash flows), and calculate the economics of duck fattening depending on the concentration of organic selenium in concentrate mixtures, if it is a legal entity, it is necessary specifics of agricultural production. For this reason, in the International Accounting Standards, a special chapter is dedicated to agriculture (MRS 41 - Agriculture). MRS 41, paragraph 5, states: "An agricultural activity is the management of an entity by biological conversion and the harvesting of biological assets for sale or conversion into an agricultural product or ancillary biological assets. Biological property is a living animal or plant. Harvest is the separation of products from biological assets or the interruption of the life processes of biological assets. In this economic expert terminology, fattening ducks are biological assets. Biological assets should be measured at initial recognition and at the end of each reporting period at their fair value less costs to sell, unless fair value cannot be measured reliably (MRS 41, paragraph 12). In doing so, the gain or loss arising from the initial recognition of biological assets at fair value less costs to sell and from the change in fair value less costs to sell of biological assets should be included in profit or loss in the period in which it arises.

In MRS 41, paragraph 8, fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, unrelated parties, and a willing party to complete a transaction. This paper presents revenues and costs, calculates the efficiency ratio, gross profit rate, as well as other indicators that measure business performance, but only for a certain period of time (duration of fattening of one shift of 49 days). The accounting period (semi-annual or annual) is not included here. As a method of economic monitoring of the achieved result, the calculation of the cost price of the final products (costs of production of fattening ducklings) and the calculation of business efficiency for the mentioned time period of the duckling pan were used. The economy and the rate of gross profit of fattened ducklings sold on the farm and the "grill" of duck meat were calculated. Revenue from the sale of fattened chickens (average body weight of fattened ducklings in kg x selling price / kg), by experimental groups.

The following types of costs occur within costs:

- Costs of purchasing one-day-old ducklings;
- cost price of concentrate mixtures (starter and finisher);
- immunoprophylaxis costs;
- cost of cooperation in duck fattening and
- costs of dead and discarded ducklings.

According to IAS 12, paragraph 7, it is stated: "Income is the gross inflow of economic benefits during the period arising from the regular activities of the entity, and which results in an increase in capital, except for those capital increases related to contributions of participants in capital. Within the costs of fattening, the usual business model of cooper-type duck fattening was used. The coefficient of economy is calculated as the ratio of total revenues and total costs (Andrić, 1998; Ivanković, 2007), and the profit rate as the ratio of realized (gross) profit and value of production, ie total income. The profit margin shows the percentage of realized profit (profit) according to the value of the entire work done expressed through realized income during a certain period or for each individual job depending on which category of profit (profit) and income is applied in the form (Belak, 1995). Since the costs of concentrate mixtures for poultry fattening are economically the most important and the largest costs, the goal of poultry breeding is to create a population with high economic efficiency of production, ie high production with relatively low food consumption (Zulkifli, 2009).

MATERIALS AND METHODS

The study of the influence of organic selenium on the production results of fattening ducks, carcass meat parameters, meat quality and selenium content in the meat and internal organs of fattened ducklings was conducted on a total of 240 one - day - old ducklings. The research was conducted in a facility on the farm of Salih Mešić in the settlement of Rainci in the Municipality of Kalesija during 2020. Upon arrival at the immigration facility, and before being placed in the box, the one-day-old ducklings were weighed on a digital scale with a tolerance of ± 1 g and each individual was marked with a ring on its leg with its own number. In all repetitions, the ducklings were placed in special cardboard boxes for the first week for easier temperature control. Immediately during the weighing, groups of 20 ducklings were randomly formed and arranged in prepared and marked boxes. Ducklings were randomly divided into 4 experimental groups (K_0, K_1, K_2 and K_3). There were 60 one-day-old ducklings in each experimental group, and fattening was performed in three repetitions of 20 ducklings. The research plan is shown in Table 1.

Table 1. Research implementation plan

	Experimental groups			
	K_0	**K_1**	**K_2**	**K_3**
	Number of ducklings			
According to repetitions				
I - V1	20	20	20	20
II - V2	20	20	20	20
III- V3	20	20	20	20
Total	**60**	**60**	**60**	**60**

Duckling diet: The ducklings are in two phases of feeding duration in fattening, fed with two and nutritionally different concentrate feed mixtures: starter (from 1st to 14th day) and finisher (from 15th to 49th day of fattening). The first, the control group of ducklings (K□) during fattening received food without added selenium in both phases of fattening. The second group of ducklings (K□) was fed with food in both phases of fattening as well as the control group, but with the addition of 0.2 mg / kg of organic selenium (commercial preparation, Alkosel R 397, France).The third group of ducks (K□) used food with 0.4 mg / kg of organic selenium in fattening, and the fourth group of ducks (K□) with 0.6 mg / kg of organic selenium. The experiment lasted 7 weeks (49 days), and the food recipe for individual stages of fattening was adjusted to the selected duck hybrid. At the beginning of fattening, the chemical composition of the concentrate mixtures as well as the selenium content were determined (to determine the total selenium content, i.e. basal derived from food and to add organic selenium).

Before the ducklings arrived at the facility, water and food were prepared in shallow drinkers and feeders for tempering. Feeding and feeding from small drinkers and feeders was done in the first week of fattening. After that, the ducklings were fed from hanging feeders, the height of which was regulated according to the age of the ducklings. The feeding of the ducklings in this period was done by means of tin troughs with chains hung on the front part of the box fence, which also had the possibility of regulating the height according to the age of the ducklings. The ducklings had free access to food and water (ad libitum), and the facility was lit for 24 hours. The raw material compositions of the mixtures used in duck fattening (starter and finisher) are shown in Tables 2 and 3.

The achieved effect of ducks in fattening is shown in Tables 6. 14. Since the purchase price of concentrate mixtures depends on the elements listed in Table 6. first in this text) and any change in their height will affect its height.

Price of consumed concentrate mixtures per unit of live weight: Dividing the cost price of combinations of concentrate mixtures by periods of fattening within experimental groups with the average body weight of fattened ducklings, the price of food consumed per kilogram of body weight gain was obtained.

Table 2. Raw material composition of starter fattening concentrate mixture

Raw material (%)	Concentrated starter mixture (1st to 15th day)			
	Experimental groups			
	K□	K□	K□	K□
Corn	54,83	54,63	54,43	54,23
Soybean semolina	18,00	18,00	18,00	18,00
Soybean meal	16,00	16,00	16,00	16,00
Soy protein concentrate	5,00	5,00	5,00	5,00
Alcoholic yeast	2,50	2,50	2,50	2,50
Mono-Ca-phosphate	1,30	1,30	1,30	1,30
Premix for fattening ducks I	1,00	1,00	1,00	1,00
Livestock chalk	0,90	0,90	0,90	0,90
Fodder salt	0,35	0,35	0,35	0,35
Dl-Methiomin	0,12	0,12	0,12	0,12
Organic selenium (Se)	-	0,20	0,40	0,60
Σ	**100,00**	**100,00**	**100,00**	**100,00**

Tabela 3. Raw material composition of finisher fattening concentrate mixture

Raw material (%)	Concentrated finisher mixture (15th to 49th day)			
	Experimental groups			
	K□	K□	K□	K□
Corn	72,02	71,82	71,62	71,42
Soybean semolina	11,00	11,00	11,00	11,00
Soybean meal	9,00	9,00	9,00	9,00
Soy protein concentrate	2,50	2,50	2,50	2,50
Alcoholic yeast	2,00	2,00	2,00	2,00
Mono-Ca-phosphate	1,20	1,20	1,20	1,20
Premix for fattening ducks I	1,00	1,00	1,00	1,00
Livestock chalk	0,90	0,90	0,90	0,90
Fodder salt	0,30	0,30	0,30	0,30
Dl-Methiomin	0,08	0,08	0,08	0,08
Organic selenium (Se)	-	0,20	0,40	0,60
Σ	**100,00**	**100,00**	**100,00**	**100,00**

Table 4. Calculative chemical composition of concentrate mixture starter for duck fattening

Name	Unit of measure	Starter concentrate mixture (1st to 15th day)			
		Experimental groups			
		K□	K□	K□	K□
Dry matter	%	88,06	88,07	88,08	88,08
Crude proteins	%	22,16	22,16	22,13	22,10
Crude fat	%	5,73	5,72	5,72	5,71
Crude fiber	%	3,34	3,34	3,33	3,33
Ca	%	0,65	0,63	0,63	0,63
Na	%	0,14	0,14	0,14	0,14
Cl	%	0,20	0,20	0,20	0,20
P	%	0,75	0,75	0,75	0,75
Lysine	%	1,41	1,41	1,41	1,41
Methionine	%	0,51	0,51	0,51	0,51
A	IJ/kg	10,00	10,00	10,00	10,00
D3	IJ/kg	2,00	2,00	2,00	2,00
E	mg/kg	30,00	30,00	30,00	30,00
ME poultry	MJ/kg	13,19	13,16	13,13	13,10

RESULTS AND DISCUSSION

Purchase prices of concentrate mixtures: Data on the full purchase price of complete concentrate mixtures by experimental groups are given in Tables 6.

Calculation of other fattening costs: The calculation of other costs of duck fattening included all costs, ie parts of the costs borne by the fattening organizer and the subcontractor. Data on the calculation of other costs of duck fattening are given for live body weight of fcco farm in Table 10., and in table 11., for "grill" meat of fcco refrigerators.

Table 5. Calculative chemical composition of concentrate mixture finisher for duck fattening

Name	Unit of measure	Finisher concentrate mixture (15th to 49th day)			
		Experimental groups			
		K_0	K_1	K_2	K_3
Dry matter	%	87,31	87,32	87,32	87,33
Crude proteins	%	16,09	16,08	16,08	16,05
Crude fat	%	4,52	4,51	4,51	4,50
Crude fiber	%	2,87	2,87	2,86	2,88
Ca	%	0,58	0,58	0,58	0,58
Na	%	0,12	0,12	0,12	0,12
Cl	%	0,17	0,17	0,17	0,17
P	%	0,67	0,67	0,67	0,67
Lysine	%	0,96	0,96	0,96	0,96
Methionine	%	0,41	0,41	0,41	0,41
A	IJ/kg	10,00	10,00	10,00	10,00
D3	IJ/kg	2,00	2,00	2,00	2,00
E	mg/kg	30,00	30,00	30,00	30,00
ME poultry	MJ/kg	13,38	13,35	13,32	13,28

Table 6. Calculations of purchase prices of concentrate mixtures by experimental groups and fattening periods (in KM / 100 kg)

Elements of calculation	Experimental groups and periods of fattening							
	K_0		K_1		K_2		K_3	
	Starter	Finisher	Starter	Finisher	Starter	Finisher	Starter	Finisher
Price of raw materials	90,40	70,19	92,02	71,81	93,65	73,44	95,27	75,06
Mixing costs	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00
Packaging costs	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
Costs of transport	6,00	6,00	6,00	6,00	6,00	6,00	6,00	6,00
Total	101,60	81,39	103,22	83,01	104,85	84,64	106,47	86,26

Table 7. Overview of purchase prices of concentrate mixtures by experimental groups and fattening periods (in KM / kg)

Experimental groups	Periods of fattening	
	Starter (from the 1st to the 14th day)	Finisher (from the 15th to the 49th day)
K_0	1,0160	0,8139
K_1	1,0322	0,8301
K_2	1,0485	0,8464
K_3	1,0647	0,8626

Table 8. Consumption of concentrate mixtures by experimental groups and periods of fattening (g / duck)

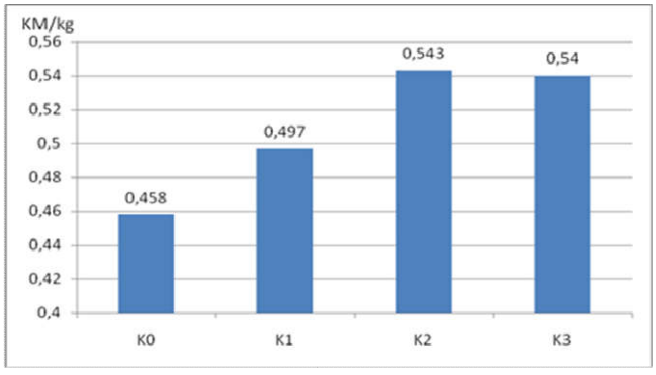
Experimental groups	Periods of fattening		Total
	Starter (from the 1st to the 14th day	Finisher (from the 15th to the 49th day	
K_0	902,44	7.485,80	8.388,24
K_1	912,10	7.324,45	8.236,55
K_2	920,22	7.200,90	8.121,12
K_3	880,60	6.644.75	7.525,35
Total	3615,36	28.655,90	32.271,26
x	903,84	7.163,98	8.067,82

Balance sheet calculations: Balance calculations for duck fattening were performed in such a way that the values of live body weight of ducklings (4.50 KM / kg) and "grill" of duck meat (7.00 KM / kg) were determined first. Balance sheet calculations are given in Tables 12. and 13.

Production number of ducklings: Table 14. shows the calculation of the production number by experimental groups for the total period of duck fattening. The overall previously presented and critically evaluated results of the economics of duck fattening, regardless of the undoubtedly scientifically and commercially valuable and interesting indicators, do not give a complete picture of the success of duck fattening by experimental groups. Financial effects are real indicators of the overall efficiency in the exploitation of some species of animals, specifically, fattening ducks. At the same time, it is the most important indicator for the overall valorization of a very wide range of biological elements, starting from heritability for individual indicators to numerous parameters, especially included in this research. From the fact that the prices of raw materials that are part of concentrate mixtures for all experimental groups are the same, and that their participation in all experimental groups in both feeding periods (starter and finisher) differs only in the amount of corn and organic selenium, it follows that the prices of concentrates the mixture for both periods and all experimental groups were different.

The highest prices of both types of concentrate mixtures (starter and finisher) had the experimental group K_3, which had the largest share of organic selenium in concentrate mixtures (0.6%), which had a direct impact on the price level, which amounted to:

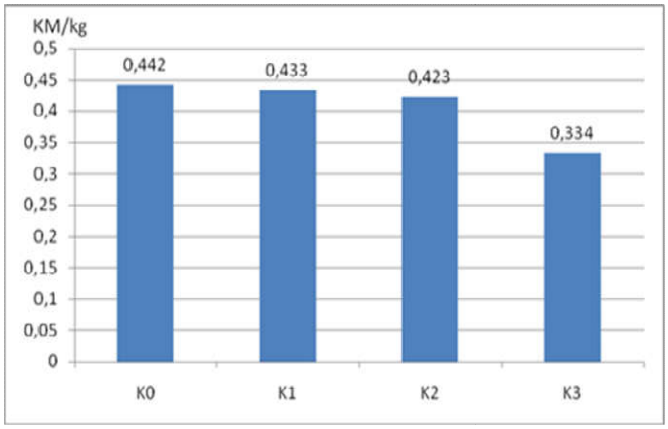
- Starter 1,0647 KM/kg and
- Finisher 0,8626 KM/kg



Graph 1. Value of profit by experimental groups and kg of body weight of fattened ducklings (KM)

The lowest prices of both types of concentrate mixtures (starter and finisher) had the control group K_0 which did not have organic selenium in concentrate mixtures, which had a direct impact on the price level, which amounted to:

- Starter 1.0160 KM / kg i
- Finisher 0.8139 KM / kg



Graph 2. Value of profit per kg of "grill" meat and experimental groups of ducks (KM)

consumption of concentrate mixtures per kg of gain (conversion) by experimental groups, and then the average final body weight of fattened ducklings. The results given in Tables 8, 9, 10 and 11 unequivocally support this statement. The most financially profitable is the experimental group K□ with 0.543 KM / kg of live body weight of ducklings, which had 0.4% of organic selenium in concentrate mixtures. The reason for this is that this experimental group had the highest average body weight of 3,856 g and a food conversion of 2.18. This statement is confirmed by the fact that this experimental group had the largest production number of 359, while the smallest production number of 321 had the control group K□ in whose concentrate mixtures there was no organic selenium. The balance calculation of the price of one kilogram of "grill" meat by experimental groups was different. The best financial result (profit) was achieved by the control group K□, which amounted to 0.442 KM / kg, and the reason is that this group had the highest slaughter yield of 69.50%. The weakest financial result (profit) was achieved by the experimental group K□, which amounted to 0.334 KM / kg, and the reason is that this group had the lowest slaughter yield of 66.85%. The values of the ratio of given qualities in "grill" meat in relation to the live body weight of ducklings (graphs 1. and 2.) differ somewhat due to differences in yields between experimental groups of ducklings. From chart 2. it can be seen that the best financial result in the production of "grill" meat was achieved in the control group K□ and amounts to 0.442 KM / kg, and the weakest is in the experimental group K□ and amounts to only 0.334 KM / kg. The financial result was also very different by experimental groups.

Table 9. Prices of consumed food per one kg of live body weight by experimental groups of ducklings for the total fattening period (in KM / kg)

Experimental groups	Starter	Finisher	Total	Average body weight of fattened ducklings	Price of food consumed per kg of live body weight
K_0	0,917	6,092	7,009	3,659	1,916
K_1	0,941	6,080	7,021	3,741	1,877
K_2	0,965	6,095	7,060	3,856	1,831
K_3	0,938	5,732	6,670	3,636	1,834

Table 10. Other costs of duck fattening for the total fattening period from the 1st to the 49th day of fattening (fcco farm)

Elements of calculation	Price KM / kg live weight of ducklings
1. Part of the costs borne by the fattening organizer	
One-day-old ducklings	1,576
Organization of fattening	0,100
Capital costs	0,030
Total	1,706
2. Part of the costs borne by the subcontractor	0,420
Total 1+2	2,126

Table 11. Costs of slaughtering fattened ducklings to "grill" meat (fcco refrigerator)

	Elements of calculation	Price KM / kg live weight of ducklings
1.	Transport of fattened ducklings to the slaughterhouse	0,050
2.	Slaughtering ducklings	0,403
3.	Duck meat cooling costs	0,040
4.	Packaging for packaging	0,150
5.	The cost of icing duck meat	0,100
Total (1+2+3+4+5)		**0,743**

Table 12. Balance calculation of one kilogram of live body weight of fattened ducklings by experimental groups (in KM / kg)

Experimental groups	Price of food consumption per kg of live body weight	Other costs in duck fattening	Total fattening costs per kg of live body weight	Sales price per kg of live weight of a duckling	Financial result per kg of live body weight of ducklings
K_0	1,916	2,126	4,042	4,50	0,458
K_1	1,877	2,126	4,003	4,50	0,497
K_2	1,831	2,126	3,957	4,50	0,543
K_3	1,834	2,126	3,960	4,50	0,540

The stated prices of concentrate mixtures by experimental groups (Table 7), then their different consumption by experimental groups as well as different increments, influenced the different financial effects by experimental groups. In the final valorization of the financial result, one of the key positions is certainly held by the basic price and

The differences in the financial effect are due to different prices of concentrate mixtures by experimental groups, different levels of consumption and food consumption per unit of increment, and different achieved increments by experimental groups as well as differences in yields achieved on the duck slaughter line.

Table 13. Balance calculation of one kilogram of duck meat "grill" by experimental groups

Experimental groups	Price kg live weight of ducklings	Slaughter yield (%)	The cost of producing live body weight is reduced to kg of "grill" meat	Total slaughter costs	Total costs per kg of "grill" meat	Sales price per kg of "grill" meat	Financial result per kg of "grill" meat
K_0	4,042	69,50	5,815	0,743	6,558	7,00	0,442
K_1	4,003	68,73	5,824	0,743	6,567	7,00	0,433
K_2	3,957	67,78	5,834	0,743	6,577	7,00	0,423
K_3	3,960	66,85	5,923	0,743	6,666	7,00	0,334

Table 14. Calculated production number in duck fattening by experimental groups

Experimental groups	Average body weight (in kg)	Percentage of live ducklings at the end of fattening	Number of fattening days	Food consumption per kg increment (conversion)	Production number
K_0	3,659	99,40	49	2,31	321
K_1	3,741	98,80	49	2,27	332
K_2	3,856	99,40	49	2,18	359
K_3	3,636	98,80	49	2,17	338
Total	14,892	396,40	196	8,93	1350
X	3,723	99,10	49	2,23	337,50

When the cost price and financial result per kilogram of live body weight and "grill" meat were taken for the assessment of economic efficiency, it was determined that the maximum production result does not coincide with the financial result. Namely, the control group K_0 and the experimental group K_2 had somewhat weaker production results, but achieved a significantly more favorable financial result per kilogram of live body weight produced and kilogram of "grill" meat.

CONCLUSIONS

- The type of hybrids, population density per m², food conversion (consumption of kg of food / kg of gain) and body weight of fattened ducklings have a great influence on the economy of duck fattening.
- Compared to the total costs, the costs of concentrate mixtures represent the highest costs in duck fattening and range from the lowest 46.27% for the experimental group K_2, to 47.40% for the experimental group K_0.
- For the economy of production, the most significant is the consumption of concentrate mixtures (food) per unit of increment (food conversion) per experimental groups. The best (smallest) conversion of food was in the experimental group K_3, and it amounted to 2.17, while the largest (worst) conversion had the experimental group K_0 and amounted to 2.31 kg / kg of gain.
- The prices of concentrate mixtures (starters and growers) are the highest in the experimental group K□ due to the largest share of organic selenium in them (0.6%) and amounted to 1.0647 KM / Kg for the starter, and 0.8626 KM / kg for the finisher, while the prices of concentrate mixtures were the least in the control group K0 in which there was no participation of organic selenium and amounted to 1.0160 KM / Kg for the starter, and 0.8139 KM / kg for the finisher.
- The total value of consumed concentrate mixtures for one kilogram of live body weight of fattened ducklings was the lowest in the experimental group K□ and amounted to 1,831 KM / kg, and the highest in the experimental group K□ and amounted to 1,916 KM / kg. The difference in price is 0.085 KM / kg, ie it is 4.64% higher in the experimental group K□ compared to the group K□. The price of food consumed by the experimental groups is different. The value of food consumption in all experimental groups in whose concentrate mixtures organic selenium was added is different and increased with a percentage increase in the share of organic selenium in them.
- In addition to the costs of concentrate mixtures (food), the costs related to the organization of fattening and amounting to 2,126 KM / kg, as well as the costs of slaughter in the amount of 0.743 KM / kg live weight of ducklings also participate in the fattening of ducklings.
- The financial result per kilogram of live body weight of ducklings is the best in the experimental group K□ and amounts to 0.543 KM / kg, and the weakest in the experimental group K□ and amounts to only 0.497 KM / kg. According to the experimental groups, the financial result was very different. It is much cheaper in the production of live body weight than in the production of "grill" meat, and the reason for this is the high cost of slaughtering ducks because they are very difficult to remove feathers, which requires additional work, and therefore additional costs. The best financial result in the production of "grill" meat is in the experimental group K□ and amounts to 0.442 KM / kg, and the weakest is in the experimental group K□ and amounts to only 0.334 KM / kg. The financial result was also very different by experimental groups.
- The dependent costs of service fattening in relation to the total costs were also related to the costs of food conversion and increment and ranged from 4.04 for the experimental group K□, to 3,957 for the experimental group K□.
- The main conclusion is that the economics of duck fattening fully respect the economic side of fattening and it was confirmed that the best economic results were achieved by the experimental group with the lowest conversion, highest average weight gain, highest average body weight at the end of fattening and lowest average consumption of concentrate mixtures. Thus, the fattening ducklings of the experimental group K□ achieved an average conversion of 2.18, an average weight gain of 3856 g / duck. This group also had the largest production number of 359.
- All these indicators conditioned the highest coefficient of economy in the experimental group K□ in this experiment because they achieved the best results and achieved the highest economy. The low feed conversion and the highest average weight gain of fattened ducklings contributed the most to this.

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