

## **THE COSTS OF BREEDING IN LAYING HENS AND EGGS' PRODUCTION IN KOSOVO**

**Sadik MALOKU**  
PhD student, AUT, Tirana  
**ALBANIA**

**Isuf LUSHI**  
University of  
Prizren, **KOSOVO**

**Zekria LOKA**  
**KOSOVO**

**Maksim Meço**  
AUT, Tirana  
**ALBANIA**

### **ABSTRACT**

Poultry in Kosovo is consistently being developed and the provision with domestic fresh eggs almost covers the Kosovo market. Only a limited amount of eggs is imported from the neighboring countries. In order to achieve the production of eggs, initially pullets should be provided, which mainly are imported on a high cost than if they are bred on the farm that breeds the laying hens for the production of the eggs. In Kosovo, the provision of eggs, mainly is done from the farm, which are mostly of a cage (battery) system, some use cage free barn laid system-EU, while on occasions, farmers or family farms also use the free range system. The production of eggs from the chicken on cage free barn laid system and cage system, which is kept on farm, has almost same productivity, in comparison the number of mortalities is higher in cage system. On the other hand, at the free range system the productivity and the mortality is lower than the other systems, hence, due to the quality of eggs the price of eggs in the market is double compared to cage free barn laid system and cage system. In the following research there has been included 21.000 laying hens, for both cage free barn laid system and cage system, 10.0000 each, while for the free range system are included 1.000 laying hens. Based on the results, in proportion to the laying hens' number, the productivity was higher to the cage free barn laid system, followed by cage system, while the profits were higher to those of free range system.

**Keywords:** Cost, system, cage system, free, cage free barn laid, productivity, laying hens.

### **INTRODUCTION**

The agricultural sector plays an important role in Kosovo. It is a leading contributor to GDP, second only to wholesale and retail trade. The share of agriculture in GDP fluctuated between 11.5% and 14.1% since 2005. If food industry is added, the agri-food sector's contribution to GDP can be as high as 20%. Beyond economic considerations, Kosovo's reliance on agriculture is a social question: agricultural activity is pervasive in Kosovo as a safety net for much of the population. Despite significant growth in agricultural exports, external agricultural trade is characterized by the enormous trade deficit. Agricultural exports represent only some 5% of agricultural imports. The reasons for a rather poor performance of Kosovar agriculture are diverse and inter-related. One of the key issues is related to the lack of an enabling climate that would create conditions for farmers to become more competitive. An inefficient land market keeps the sector at the small-scale level, which means inconsistent quantity and quality, high costs (diseconomies of scale), low productivity, and poor access to markets. Obsolete irrigation systems, insufficient agricultural machinery, lack of storage facilities, and an overall lack of agricultural skills further contribute to the poor development of the sector.

Despite the benefits of joining forces, collaboration among farmers in Kosovo is weak. The studies have shown that the level of co-operation among farmers (horizontal integration) and

between farmers and processors or traders (vertical integration) is still minimal in Kosovo. Collaboration among farmers is not easy due to lack of solidarity and poor governance, and the potential to establish effective farmers' co-operatives are currently rather low. While some co-operatives and associations do exist in a number of crops and areas of Kosovo, they represent only a small percentage of farmers. The capacity of existing co-operatives is weak. Despite large processing capacity, most of it remains unused. The challenge for processors is to secure both quantity and quality of local produce. Promising integration processes do however exist in dairy industry and horticulture.

The egg production in Kosovo has increased these recent years and in comparison to the last 6-7 years or more. Currently, Kosovo has a significantly higher number of broiler and egg production farms which has impacted the reduction of import. Kosovo farmers, import broilers within 48 hours from hatching and compared to growing of broilers by farmers costs more. Upon importing the broilers to Kosovo, hence, there is a need for more 18 weeks to start hatching and this has also its own cost. After the week eighteen, hens begin to deliver eggs, initially on low capacity and later depending on system; the production reaches 94-95 %. The production of eggs on farm is applied into two systems, EU and cage system, while the third system, applied by the farmers, is the free range system.

## **METHODOLOGY AND RESULTS**

The research was conducted during the year 2016, on 21.000 *lohmann brown classic* hybrid pullets. In the research were included: 10.000 pullets on EU system, and 10.000 pullets on cage system and 1.000 pullets on free range system. A systematic observation in a period of 6 months was conducted every day including: data collecting on the amount of food and number of pullets; the amount of eggs produced; the amount of mortality during a day, then the comparison among different systems. Upon observation and data collection, the entire documentation was further used.

### **The cost of pullets for the production of eggs**

Pullets which are imported to be raised aiming the production of eggs, are taken upon 48 hours from hatching and then are put on the special places for breeding, while the farm which has its own incubation system, will raise them itself. In the following table we have conducted the comparison of costs on the import and the breeding by the farm, on the amount of 1.000 pullets. Based on the results it can be stated that for 1.000 pullets the farm with raise them spends 3.000 Euros, while in the cases where they are imported, on the same amount of pullets, the cost is 3.310 Euros.

*Table 1: The cost of imported pullets and the pullets bred by the farm, comparison;*

No.	Items of expenses	Import €	Farm €
1	Expenses on pullet purchases	650	////
2	Eggs costs	////	240
3	Incubation costs	///	100
4	Expenses on feeding	2000	2000
5	Salary + Insurances	35	35
6	Electrical power	75	75
7	Heating costs	185	185
8	Vaccination	120	120
9	Office, phone expenses	35	35
10	Amortization	130	130
11	Other	80	80
	<b>Total Expenses</b>	<b>3310</b>	<b>3000</b>
	<b>Cost/Pullet</b>	<b>3.31</b>	<b>3</b>

### **The comparison of results of laying hens for the production of eggs on the cage system, EU system and free range system**

The productivity of eggs between EU and cage system is with a small difference though hens which remained in the EU system have produced a higher number of eggs and as a result have brought higher profit compared to those on cage system, but still is not a huge difference, with the hens which were raised on free range system have not produced more eggs (in number), but the product has brought more profit. If we calculate the profits per same number of hens, we can conclude that the hens raised on a free range system bring double profit than on both other systems. The profit comes from as a result of high cost in the market of the eggs from the free range system.

If we calculate the incomes and the feeding costs, it can be noticed that on the EU system, within a 6 months period, the incomes from the selling of eggs were about 90.706 Euros, while the feeding cost was 50.162 Euros. Within a month, on average, the incomes from eggs was about 15.117, while the feeding costs, within a month, was approximately about 8.360 Euros, hence the mortality rate, within a month, was 25 hens. In the cage system, within the same period and same number of hens, the incomes were about 90.382, while the feeding cost was 49.532. Approximately, within a month, from the sold eggs, the incomes were 15.063 Euros, whereas the average cost of feeding was 8.255 Euros. Within a month, in the cage system the mortality was 73.6 hens.

In the free range system, due to limited options, the research was conducted with 1.000 hens and within a 6 month period, the incomes were 20.095 Euros, while the feeding cost was 5.208 Euros. Approximately, within a month, the incomes were 3.349 Euros and the feeding cost was 868 Euros. Within a month, approximately, in the cage system the mortality was 1.8 hens.

Table 2: The comparison of EU, cage and free range systems

Months	Eggs production			Feeding			Mortalities		
	EU	Cage	Free	EU	Cage	Free	EU	Cage	Free
<b>1</b>	4.128	4127	970	6.986	6.972	742	27	74	2
<b>2</b>	13.216	13.211	3.033	8.540	8.484	882	28	79	3
<b>3</b>	18.252	18.200	4.017	8.680	8.596	896	18	57	2
<b>4</b>	18.462	18.225	4.007	8.680	8.540	896	22	70	2
<b>5</b>	18.624	18.609	4.033	8.652	8.484	896	22	77	2
<b>6</b>	18.024	18.010	4.035	8.624	8.456	896	34	85	2
<b>Total</b>	<b>90.706</b>	<b>90.382</b>	<b>20.095</b>	<b>50.162</b>	<b>49.532</b>	<b>5.208</b>	<b>151</b>	<b>442</b>	<b>11</b>
<b>Average</b>	<b>15.117</b>	<b>15.063</b>	<b>3.349</b>	<b>8.360</b>	<b>8.255</b>	<b>868</b>	<b>25</b>	<b>73.6</b>	<b>1.8</b>

### The cost of egg production

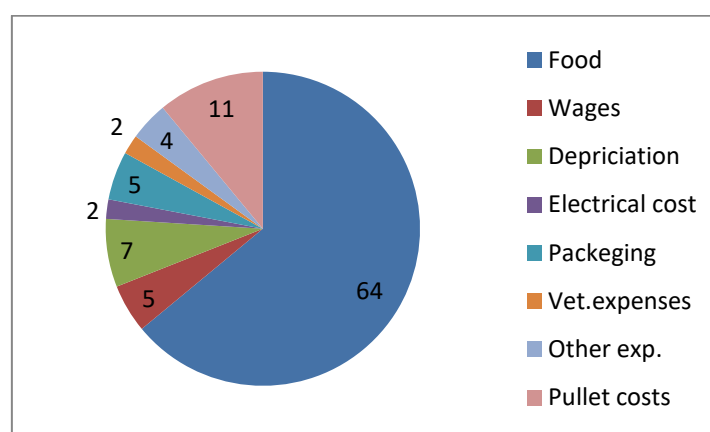
Aiming to state the exact cost for the egg production, all the expenses for the production of the 1.000 eggs were taken into account. Having into account, all the expenditures, we can conclude that for 1.000 eggs are spent around 58 Euros and based on these results the cost for the production of one egg is about 0.058 Euros.

Table 3: The cost of Eggs production

No.	Items of expenses	Expenses (euro)
<b>1</b>	Feeding	<b>34.50</b>
<b>2</b>	Salary + Insurances	<b>3</b>
<b>3</b>	Electrical Power	<b>1.5</b>
<b>4</b>	Packaging	<b>3</b>
<b>5</b>	Pullet cost	<b>7.5</b>
<b>6</b>	Office, phone Expenses	<b>1.2</b>
<b>7</b>	Vet expenses	<b>1.5</b>
<b>8</b>	Marketing expenses	<b>1.8</b>
<b>9</b>	Financial expenses	<b>0.50</b>
<b>10</b>	Amortization	<b>3</b>
<b>11</b>	Other	<b>0.50</b>
	<b>Total expenses</b>	<b>58</b>
	<b>Cost/Egg</b>	<b>0.58</b>

### The structure of eggs production cost

Based on the figure, it is noticed that the food is first on the expenses list on the egg production with 64 %, followed by pullet costs 11 %, and then depreciation after a period, which comprises of 7%, salaries and packaging comprise 7 % of the total cost, while other expenses are non-significant.

*Figure 1: The structure of production cost on 1.000 eggs*

## CONCLUSIONS

Based on the results, it is concluded that the farms if they breed pullets for egg production by themselves, because the cost is low and they can return the investment, within a short period for the investment in the incubation system. Upon raise and the beginning of the egg production we can state:

- ✓ Hens which remained in the cage, in comparison to those remained according to the EU system, have had a significant level of mortality, approximately 3 times more, while for the hens which remained free in nature – on the free range system, have had less level of mortality than both other systems;
- ✓ Hens which remained in the cage, due to the high level of mortality, their number was reduced and the feeding cost as well compared to those remained according to EU system, while those remained free in nature – on the free range system, have spent less on feeding, because they have moved around;
- ✓ If we calculate the value of hens, after production of a number of eggs, the hens which remain on the free range retain their feathers and weight and they can be sold with a better price on the market;
- ✓ The mortality of a high number of hens, their amortization, has budget consequences, because they must be replaced and their replacement has a cost

## REFERENCES

- Adams C.J & Bell D.D. 1980. Predicting Poultry egg Production. Poultry Science 59, f. 937-938.
- Appleby C.M & Hughes O.B. 1992. Poultry Productions System.
- Solomon S.E. 1991. Egg and Eggshell Quality. Volfe Publishing Limited, London.
- Sena, L. & G. Stefi. 2009. Rritja e shpendëve, Tiranë.
- Agriculture Finance in Kosovo – Study report