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# COMPARATIVE ANALYSIS OF BROILERS GROWING IN DIFFERENT MAINTENANCE SYSTEMS

IURCHEVICI LIDIA<sup>1</sup>

## Abstract

*In Romania it is necessary to pay special attention to adapt the broilers growing and exploitation systems to the European Union requirements. At the same time, it is necessary to protect and stimulate those characteristics of chickens growing and exploitation that have competitive advantages concerning the obtained products quality and the minimum environmental impact technologies. An especially important desideratum is to promote and implement the environmentally friendly production systems. It is important that technological solutions adopted in the growth and exploitation of poultry to meet all environmental requirements, for the conservation of natural area of Romania. The main objective of this work is to provide a technical economic solution for broilers growing both in intensive and in household or ecological system. Our researches reveal that the intensive - industrial system of broilers growing remains the main source to satisfy the global and the national consumption. The alternative technologies of chicken growing, in particular the ecological system, take place on the domestic poultry market, but it is necessary to create slow-growing biological material, fodder with components allowed by this technology, certified organic slaughterhouses and should develop a specific market segment. Farmer's yard chicken will still remain in the Romanian countryside. Householders must change their mentality and approach the peasant poultry farming from more economic positions.*

**Keywords:** chicken, growth, production, intensive, ecological

## INTRODUCTION

Poultry meat is on preferences top of consumers everywhere. The scientific research has made farmers available to new genotypes of great value, with advanced precocity and high growth speed, to harness upper the fodder, resulting in high production economy. All this is done in conditions of an artificial growing environmental and in the presence of a "food doping."

Inevitably, the reverse of the medal occurred: quantitative exhausting productions continuously prove qualitative depreciation, on lower comfort and well-being of the poultry.

In case of poultry meat industry produced, consumers complain vehemently depreciation of taste and cooking qualities, so they are turning their attention to poultry products obtained in smaller farms, in conditions of birds access to fresh air and grassy land, bred semi-intensive or extensive, without dietary forcing, with slow growth and slaughter later.

## MATERIAL AND METHOD

This paper is based on a comparative study on raising broilers in intensive - industrial and extensive – ecological type. The methodology for determining the production costs of the two types of growth is based on a series of technological features that are found in the table below. (Table 1)

**Table 1 Essential differences between intensive - industrial and extensive - ecological systems**

Specification	Intensive – industrial system	Extensive - ecological system
Age at slaughter (days)	39-45	81-90
Average daily gain (gr./day)	45-55	22-25
Specific consumption of fodder (kg/kg gain)	1,7-2	4,6
Characteristic food	Combined fodder, recipes for growing phases with antibiotics, acids, amino acids and enzymes of synthesis, antifungal GMO, animal meal, dietary forcing	Ration from cereals, oilseeds, protein, minerals, all certified as organic. Are prohibited antibiotics, drugs, stimulants of synthesis, amino acids, enzymes, GMOs. Mandatory grassy field.

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Specification	Intensive – industrial system	Extensive - ecological system
Growing conditions	Industrial, artificial environment, 10,000 to 20,000 chicken / hall, 20 chicken/m <sup>2</sup> , very early biological material with high intensity of growth.	Shelter up to 500 chickens, 10 chickens / m <sup>2</sup> , access to grassy land, 4m <sup>2</sup> , conditions of exceptional wealth, slow-growing chicken.

## RESULTS AND DISCUSSION

The production costs were determined based on production technologies, each item of expense being based on gain, specific consumption, exploitation period, in the two farming systems. (Table 2)

**Table 2 Main economic indicators**

Specification	M.U.	Industrial system	Ecologic system
Variable costs	lei/kg	5.232	10.504
Fixed costs	lei/kg	0.550	1.178
Total costs (cost of production)	lei/kg	5.782	11.682
Acquisition price	lei/kg	6.700	14.000
Profit rate	%	15.87	11.6

Following table with the main economic indicators can see big differences between the two exploitation systems. Thus, ecological systems, costs are twice higher than the industrial system.

**Table 3 Estimate technology for poultry meat**

Average production 50 g/day			
SPECIFICATION	Quantity kg fodder	Unitary price lei/kg fodder	Value lei/100 kg fodder
Maize	65	0.95	61.750
Barley	7	0.80	5.600
Soybean cake	25	2.50	62.500
Zoofort	1	7.50	7.500
Premix	2	12.00	24.000
Total fodder	100		161.350
Specific consumption kg fodder/kg gain (1.87)			3.017
SPECIFICATION	QUANTITY		EXPENDITURES
	M.U.	M.U./head	Lei/kg life weight
		Quantity	Price lei/M.U.
<b>1.Feed costs</b>			3.017
<b>2.Biologic material</b>	kg		1.200
<b>3.Energy and fuels</b>	kW/year	0.390	0.600
<b>4. Drugs and sanitary material</b>	lei		0.370
<b>5.Other material expenses</b>	lei		0.200
<b>6. Share of supply</b>	lei		0.115
<b>7. Insurance</b>	lei		0.096
<b>TOTAL VARIABLE COSTS</b>	lei		5.232
<b>8. Labor costs</b>	lei		0.160
<b>9. General expenditures</b>	lei		0.100
<b>10. Interest on loans</b>	lei		0.170
<b>11. Depreciation</b>	lei		0.120
<b>TOTAL FIXED COSTS</b>	lei		0.550
<b>TOTAL COSTS</b>	lei		5.782

**Table 4 Budget for poultry meat**

INDICATORS	Average production 50 g/day
	Lei/kg
<b>A. VALUE OF PRODUCTION</b>	6.700
A <sub>1</sub> Of which main production	6.700
B. SUBSIDIES	1.080
C. RAW PRODUCT	7.780
D. TOTAL COSTS	5.782
D <sub>1</sub> Of which for main production	5.782
<b>I. VARIABLE COSTS</b>	<b>5.232</b>
<b>1.Feed costs</b>	3.017
2.Biologic material	1.200
3.Energy and fuels	0.234
4. Drugs and sanitary material	0.370
5.Other material + water	0.200
6. Share of supply	0.115
7. Insurance	0.096
<b>II. FIXED COSTS</b>	<b>0.550</b>
- Labor costs	0.160
- General expenditures	0.100
- Interest on loans	0.170
- Depreciation	0.120
E. TAXABLE INCOME	0.918
Taxes and duties	0.000
<b>F. NET INCOME + subsidies</b>	1.998
<b>G. TAXABLE INCOME RATE (%)</b>	15.870
<b>H. NET INCOME RATE + subsidies (%)</b>	34.547
<b>COST OF PRODUCTION</b>	5.782
<b>INTERNAL PREDICTABLE MARKET PRICE</b>	6.700

**Table 5 Estimate technology for poultry meat**

Average production 22 g/day			
SPECIFICATION	Quantity kg fodder	Unitary price lei/kg fodder	Value lei/100 kg fodder
Maize	70	0.95	66.500
Wheat	3	0.80	2.400
Oilseed cakes	22	2.50	55.000
Other seeds of cereals	5	7.50	37.500
Total fodder	100		161.400
Specific consumption kg fodder/kg gain (4,6)			7.424
SPECIFICATION	QUANTITY		EXPENDITURES
	M.U.	M.U./head	Lei/kg life weight
		Quantity	Price lei/M.U.
<b>1.Feed costs</b>			7.424
<b>2.Biologic material</b>	kg		1.500
<b>3.Energy and fuels</b>	kW/year	0.600	0.600
<b>4. Drugs and sanitary material</b>	lei		0.000
<b>5.Other material expenses</b>	lei		0.600
<b>6. Share of supply</b>	lei		0.500
<b>7. Insurance</b>	lei		0.120
<b>TOTAL VARIABLE COSTS</b>	lei		<b>10.504</b>
<b>8. Labor costs</b>	lei		0.500
<b>9. General expenditures</b>	lei		0.198
<b>10. Interest on loans</b>	lei		0.300
<b>11. Depreciation</b>	lei		0.180
<b>TOTAL FIXED COSTS</b>	lei		<b>1.178</b>
<b>TOTAL COSTS</b>	lei		<b>11.682</b>

**Table 6 Budget for poultry meat**

Average production 22g/day	
INDICATORS	Lei/kg
<b>A. VALUE OF PRODUCTION</b>	14.000
A <sub>1</sub> Of which main production	14.000
<b>B. SUBSIDIES</b>	2.000
<b>C. RAW PRODUCT</b>	16.000
<b>D. TOTAL COSTS</b>	11.682
D <sub>1</sub> Of which for main production	11.682
<b>I. VARIABLE COSTS</b>	<b>10.504</b>
<b>1.Feed costs</b>	7.424
2.Biologic material	1.500
3.Energy and fuels	0.360
4. Drugs and sanitary material	0.000
5.Other material + water	0.600
6. Share of supply	0.500
7. Insurance	0.120
<b>II. FIXED COSTS</b>	<b>1.178</b>
- Labor costs	0.500
- General expenditures	0.198
- Interest on loans	0.300
- Depreciation	0.180
<b>E. TAXABLE INCOME</b>	2.318
Taxes and duties	0.000
<b>F. NET INCOME + subsidies</b>	4.318
<b>G. TAXABLE INCOME RATE (%)</b>	19.842
<b>H. NET INCOME RATE + subsidies (%)</b>	36.962
<b>COST OF PRODUCTION</b>	11.682
<b>INTERNAL PREDICTABLE MARKET PRICE</b>	14.000

## CONCLUSIONS

The researches point out that the intensive - industrial raising of broilers remains the main source for satisfying global and national consumption.

To obtain competitive results, should ensure feeding to chickens, in accordance with needs and with the genetic potential of biological material in use, optimum microclimate throughout the period of growth, welfare conditions, in particular by complying the recommended maximum density and avoid possible stress.

The alternative technologies for raising chickens, particularly ecological system, takes place on the domestic market, but is necessary to create a slow-growing biological material, mixed fodder with components allowed by this technology, certified organic slaughterhouses and to create a specific market segment. Organic farming is better for the environmental protection. Farmers must change their mentality and approach the ecological poultry farming on more economical positions.

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