

CUNICULTURE (RABBIT FARMING) – AN ECONOMIC ALTERNATIVE FOR RURAL HOUSEHOLDS FROM THE PERSPECTIVE OF AFRICAN SWINE FEVER RESTRICTIONS

BUCUR SORINEL IONEL*¹

¹*Romanian Academy, Institute of Agricultural Economics, Bucharest, Romania*

*Corresponding author's e-mail: bucursorinelionel@yahoo.com

***Abstract:** The emergence of the African swine fever on the Romanian territory and mainly the cumulated effects at the meat production level up to the levels of processing and respectively of import– export, due to the slaughtering of over 400 000 swine heads, but mainly from the perspective of ensuring the animal protein intake inside rural households, makes necessary a minimum analysis on possible alternatives for raise or consumption of some animals with high rates of development and reproduction. From this perspective, the present approach proposes as a possible solution, at least on short term, the alternative of raising and valorification of the rabbits economic potential as one of the activities generating growth and socio-economic development of the rural space.*

***Key words:** economic alternative, rural development, potential valorification*

INTRODUCTON

As a business in which depreciations are very quickly observable, being possible the obtaining of profit from the second functioning year, rabbits farming is more efficient than in other livestock sectors due to the fact that females not only that they have some periods of the year for fertility and also the gestation period is extremely short, and the number of buns at one birth is one of the biggest registered.

The livestock acquisition for the farms basis is not costly, the necessary space is not so vast, and labour force does not imply a great number of workers employed (many times a person or two are covering the average farm's necessary).

Rabbit is, after poultry, the most efficient protein convertor from plants rich in cellulose into foods animal proteins of a great value. Having in view the present social stress on sustainability and avoiding the competition between foods and fodders, the rabbit meat production, is very important, being able to be an efficient economic alternative [6].

Rabbit farming is one of the components of the zootechnical system, a field characterized by a superior economic efficiency in terms of quality and with a higher degree of profitability than plant production. The benefits of animal husbandry are brought by a high quality and biological value of raw materials and products, intensive and complete uses of production assets (meat, milk, eggs, fur, leather), permanence and consistency of production (not seasonal crops), ensuring at the same time, a continuity in the use and remuneration of the labor force involved [2].

The issue of rabbit farming made the object of multiple studies, both at international and national level. Given being the efficiency of this activity, the majority of studies are based though, mainly on elements linked to the continuous increase of productions, concomitantly with the diminution of the specific consumption and costs per product unit.

In recent decades, special efforts have been made in most countries of the world for the development of this zootechnical branch, as a result of the unanimous appreciation of the reproductive and production properties of the species, able to quickly cover a significant part of the animal protein needs of the population [1].

According to specialists, the economic importance of rabbit species results from the character, volume, value and diversity of the productions they provide in a short period of time and at low costs. Rabbit breeding is a branch of animal husbandry that is suitable for

any maintenance system, and can be practiced in all areas, regardless of altitude or soil and climatic conditions, contributing to raising the income of those who deal with this occupation [7], investing in a such a business with many advantages in terms of costs and revenues from product capitalization [4].

In addition, the nutritional value of rabbit meat should not be omitted. Studies to date show that rabbits contain 40.15% nutrient compared to 32.62% for chicken, 27.11% for pork, 24.61% for veal and 24, 20% compared to beef [5].

In the context of the above, we appreciate that such works, mainly in the academic /university environment, include ample preoccupations for the maximum valorification of the genetical potential of present populations and for the continuous growing of this potential in the generation's succession, in order to ensure a sustainable production.

MATERIALS AND METHODS

For the Romanian rural space, rabbit farming (cuniculture), can represent a viable alternative for the local development. In support of this argument there come the evolutions registered at international and national levels, both from the perspective of the rabbits numbers, but mainly of the meat production obtained and the valorification of it.

From this perspective, the present approach is based on public information supplied by both the European statistics, through the studies realized at the level of General Direction of Health and Food Safety, databases of Eurostat and Faostat, as well as public information from the national statistics.

The evolutions and economic performances in the rabbit farming domain are analyzed utilizing well known statistical methods, of comparisons and dynamics types, both from the point of view of some physical and value indicators, characterizing this segment of activity.

From time perspective, the present approach has in view the evolution of rabbit farming sector after the year 2001, the analysis being adjusted correspondingly, in function of the availability of the statistical data.

RESEARCH RESULTS

Considerations regarding the rabbits farming performance at world and community level

According the public information [3], at world level, the rabbit meat production is estimated at approximately one million tones, around 54% of this being produced in the European Union.

The rabbit meat production market is dominated by four states, respectively: China, Italy, Spain, France, the production made by these representing around $\frac{3}{4}$ of the World production.

Evaluations carried out so far at the European level show that in terms of numbers, rabbit farming ranks second in the EU, with over 340 million rabbits slaughtered annually. However, rabbit farming in the EU accounts for only about 1.1% of total EU meat production [8].

At European Union level, there are around 180 million rabbits raised for meat consumption. Around 66% of the rabbits numbers are into commercial farms and slaughtered in licensed slaughter houses, the difference being in the small farms, with local sales or on spot, in the yard.

Rabbits farming is concentrated at the community level into three countries, respectively Spain (48.5 mill. slaughtered rabbits in 2016), France (29 mill. rabbits) and Italy (24.5 mill. rabbits), cumulated the three states owning 83% of the total numbers of rabbits in the community space.

The number of commercial farms in the EU, organized as family enterprises owned independently, with a certain degree of vertical integration, is estimated at 4,500, the majority of them being in Spain, France and Italy.

From the perspective of the labour force, only this sector is regrouping 6,000 employees- directly employed and ensures other 12, 000 adjacent jobs.

If, at the level of the rabbit meat production there is a visible trend of concentration into only four states, as regards its valorification by the consumer, things are a bit different.

Thus, there is a continuous decrease of the rabbit meat consumption in the EU, linked mainly, to the changes in the consumers' behaviour towards the convenient foods, the loss of eating rabbit's meat, or the higher perception of the rabbit as a companion animal. In general, for example, at the community level, the rabbit meat consumption is around of only 0.5 kg/year /person.

The main exporter of rabbit meat is China, 99% from the imports of the community space coming from China (Table 1).

Table 1.
Evolution of the trade with rabbit meat in the period 2014-2016

	Reference year	Mill. euro	Tones
Imports of rabbit meat from China into EU	2014	24.432	7.498
	2015	19.841	6.167
	2016	16.542	4.799
Exports of rabbit meat from EU to non- EU states	2016	13.967	3.769

Source: Overview report. Commercial Rabbit Farming in the European Union, DG Health and Food Safety, 2017.

Evolution of rabbit farming in Romania

As part of the zootechnical system, rabbit farming is regulated at national level by primary legislation, respectively by the Zootechnics Law no. 32/2019, which aims to ensure a legal framework for breeding and exploitation, breeding, reproduction and feeding, conservation of genetic resources for animal species of zootechnical interest, as well as conservation of pastoral heritage [9]. It should be noted that this law repealed the previous legislative provisions, at the date of this approach being applicable its provisions.

If at world and European level, rabbit farming is mainly concentrated into four states which, practically confers to them real assets in the production and valorification of rabbit meat production, in Romania the rabbit farming sector has known a significant involution, determined by both the permanent modifications of the law frame, but also the re-orientation of rabbit farmers towards other domains of activity, more attractive from the point of view of the profit obtained. Not last, as at the community level, the rabbit meat consumption is reduced being given, among others, the population consumption rabbits, and also the big prices for selling this product.

In the context of the considerations above, we must precise the fact that in the period 2001-2018, the rabbits numbers in Romania diminished not less than 52 de percentages, respectively from 540 thousand heads (2001) to 259.4 thousand heads (2018) (Figure 1).

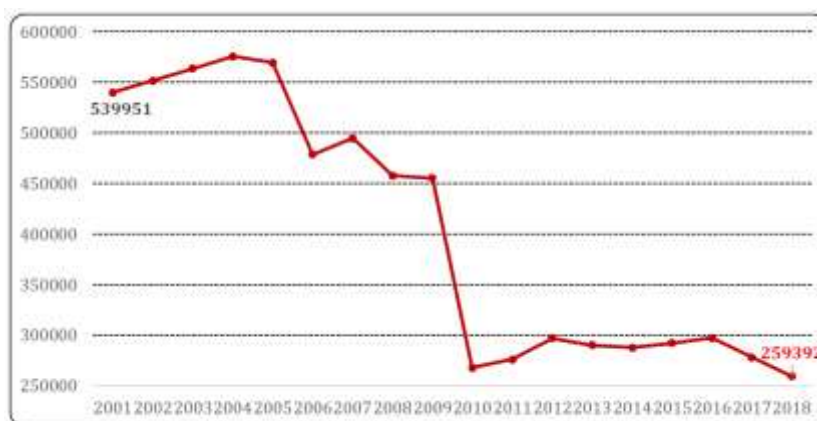


Figure 1. Evolution of rabbits numbers in Romania in the period 2001-2018 (no.of heads)

Source: Calculations on basis of data from Tempo-Online, 2019.

At local level (county), the average rabbits number is of 6,498 heads, over this average being 19 counties, on first position being Caraş-Severin. Practically, the first 12 counties are re-grouping 55.3% of total rabbits numbers. Except counties: Călăraşi (triple of numbers in the period 2001-2018) and Dâmboviţa (17.9%), there is a strong diminution trend of numbers (reaching up to -92.3% Dolj) (Figure 2).

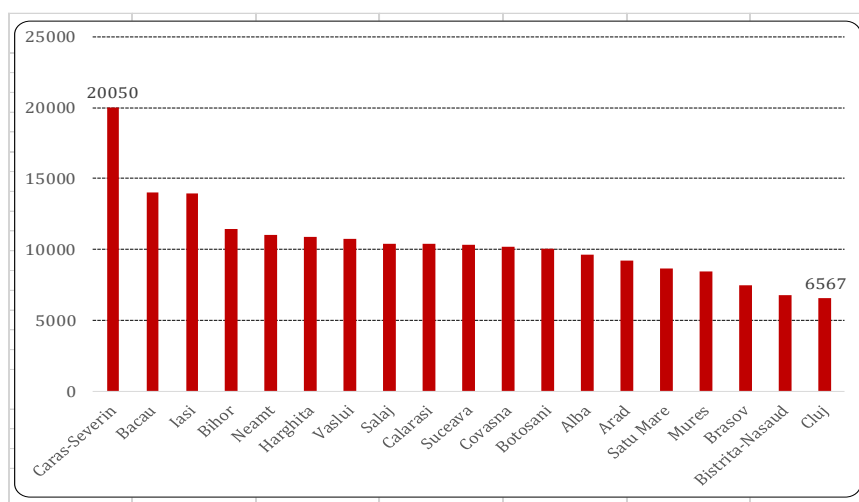


Figure 2. Evolution of rabbits livestock numbers in Romania in territorial profile in the period 2001-2018 (no.heads)

Source: Calculations on basis of data from Tempo-Online, 2019

Neither from the point of view of the agricultural farms structure based on rabbits farming, the situation is favorable. On one hand, rabbits farming was concentrated, in the period 2002-2016 into small and medium size farms and less in big farms, the valorification potential of which, under normal conditions, could have ensured a high profitability in this field. Although the most recent available statistics information supplied by FAOSTAT for Romania is limiting itself to the year 2016, we can observe a visible tendency to reduce the number of farms in the field of rabbit farming by percentages reaching to -81.2% (Table 2).

Table 2.**Structure of agricultural farms in Romania - rabbits**

	2002	2005	2007	2010	2013	2016	2016/2002 (%)
Total	155434	69424	45488	60415	42673	44799	-71.2
Under 0.1	28689	7398	5395	7457	5642	5396	-81.2
0.1 – 0.3	16479	5899	2803	8213	6281	5931	-64.0
0.3 – 0.5	9498	5241	2745	4501	2683	2729	-71.3
0.5 - 1	22863	9668	4842	8220	6038	5588	-75.6
1 - 2	30985	13946	8882	11186	7584	8490	-72.6
2 - 5	35288	17755	13957	14314	9845	11471	-67.5
5 - 10	9170	7153	4563	4475	3468	3839	-58.1
10 - 20	1743	1619	1734	1272	768	976	-44.0
20 - 30	289	321	291	291	117	182	-37.0
30 - 50	192	243	134	202	140	128	-33.3
50 - 100	133	131	86	172	70	47	-64.7
Over 100	105	50	56	112	37	22	-79.0

Source: Calculations on basis of FAOSTAT data, 2019

From the international trade perspective, we must precise the fact that in the period 2010-2017 Romania registered a positive trade balance of the trade with live animals (rabbits), except the year 2012 characterized by a higher level of rabbits import comparatively to their export (Table 3).

Table 3.**Evolution of Romanian international trade with rabbits (live animals) in the period 2010-2017**

Year	Import		Export		Trade balance	
	Quantity (thou. Heads)	Value (thou. \$)	Quantity (thou. Heads)	Value (thou.\$)	Quantity (thou. Heads)	Value (thou. \$)
2010	1	12	7	35	6	23
2011	0	0	10	39	10	39
2012	2	108	32	105	30	-3
2013	0	0	0	434	0	434
2014	0	0	19	337	19	337
2017	1	32	7	177	6	145

Source: Calculations on basis of FAOSTAT data, 2019

Although at first sight the trade flows are positive, in fact the international trade is based, as in the case of other agri-food or forest products, on the selling of raw materials and not on processed products the value added of which could be higher

Even if the informational support is extremely reduced as regards the international trade of Romania with rabbit meat, we must remind that starting with the year 2010 and until the level of year 2013, the last available statistical year, the trade balance was permanently negative. Thus, in lack of rabbit meat exports, but with the increase in imports of this product, the trade balance was permanently negative, with a commercial balance oscillating between -239 thousand dollars (2010) and - 449 thousand dollars (2013).

Even in the conditions of rabbit meat export in the year 2013, situated at 18 thousand tones of meat, representing 61 thousand dollars, the level and value of imports are net superior. Thus, at the level of the year 2013, Romania imported not less than 99 thousand tones of rabbit meat (4.5 times more than the quantity exported at national level), the total imports value being of 510 thousand dollars (7.4 times more than the Romanian exports). Practically, the Romanian rabbit meat exports were realized at an average price of

3.4 dollars/tonne, while the acquisition price from the import were situated at 5.2 dolari/tonne.

In the context of the above, we appreciate that in the development of rabbit farming in Romania an essential role is played by the implementation of support measures specific to this field of activity. Thus, as an activity with an impact on farm incomes, rabbit farming must be supported by funding from national resources, but especially from structural funds. However, the development of such a business by attracting European funds requires from any investor, the knowledge of the specific rules applicable to each program or measure.

In this respect, the experience gained by other entrepreneurs in this field is extremely relevant, both in terms of knowledge of the problems they faced in obtaining funding [12], but especially of the presentation of successful models [13].

In the sense of the above, it should be noted that both through the SAPARD program [14], the European Agricultural Fund for Rural Development, but also through the National Rural Development Program for the two periods (2007-2013, respectively 2014-2020) [15], potential investors were able to benefit from support measures including in the field of rabbit farming, as they were approved and detailed in the specific documents related to each measure.

CONCLUSIONS

The present world agriculture manifests a visible diversification, to cover the multiple needs and growth of the population. Practically, livestock is not limiting itself anymore to well known species (ovines, swine, horses, etc), but it must orient itself also towards valorification of other animal resources, as rabbit farming, fur animals, hunting animals etc.

At world level, rabbit farming presents a rapid growth rate, parallelly with the production industrialization, although there are certain dysfunctions in the optimum working of this domain.

In Romania, rabbits farming presents a special importance for the livestock production mainly for the perspective, both through the variety and value of products obtained, but also through certain biological particularities determining a high production level and ensuring an increase of the economic efficiency of the sector.

Although at present, rabbits farming owns an extremely reduced share in the livestock production, we consider that cuniculture (rabbit farming) potential is extremely high, being able to ensure not only the internal meat consumption, but also to put into value, through export, the main primary and secondary obtained products, that are: meat and fur.

As an opportunity for local development, mainly in the rural environment, we consider that in the field of rabbit farming we need firstly the defining of a strategy for developing this sector at national level, but also to ensure the infrastructure for internal processing, by specialized slaughter houses, which could come meeting the rabbit farmers with measures in view for increase of economic competitiveness and sector's attractivity.

At the same time, in concordance with the European trends, we must give special attention for the education of the rabbit farmers, including the perspective of their responsibility towards consumers.

REFERENCES

- [1]. BURA M., 2009, Redresarea producției de carne de iepure, <https://www.revista-ferma.ro/articole/zootehnie/redresarea-productiei-de-carne-de-iepure>
- [2]. CĂTĂLIN G., 2017, Creșterea iepurilor, https://kupdf.net/download/cresterea-iepurilor_58bf1f2ce12e89491cadd375_pdf#

- [3]. **MACOVSCI B.**, 2014, Un aliment dietetic carnea de iepure, <https://www.lumeasatului.ro/articole-revista/1452-un-aliment-dietetic-carnea-de-iepure.html>
- [4]. **NICULA L., OLTEANU A.**, 2015, Investiții directe - Start-up: S.C. Rabbitland S.R.L, Colecția de Working Papers ABC-UL LUMII FINANCIARE, nr.3, http://www.fin.ase.ro/ABC/fisiere/ABC3_2015/Lucrari/L4_Nicula_Olteanu.pdf
- [5]. **STOIAN I.**, 2013, Afacerile cu iepuri rentabile din al doilea an, <https://www.meat-milk.ro/afacerile-cu-iepuri-rentabile-din-al-doilea-an/>
- [6]. **TOBĂ D.**, 2009, Studiul efectului heterozis în exprimarea fenotipică a potențialității producției de carne la hibridi de iepure de casă, Teză de doctorat, Facultatea de Zootehnie și Biotehnologie, Timișoara
- [7]. *** Creșterea iepurilor. Importanța economică și perspectivele creșterii iepurelui de casă, 2019, Note de curs, <https://pdfslide.net/documents/curs-cunicultura-animale-de-blana-si-vanatpdf.html>
- [8]. *** Raport referitor la standardele minime pentru protecția iepurilor de crescătorie, Comisia pentru agricultură și dezvoltare rurală, 2017. https://www.europarl.europa.eu/doceo/document/A-8-2017-0011_RO.html
- [9]. *** Overview report. Commercial Rabbit Farming in the European Union, DG Health and Food Safety, 2017
- [10]. * * * Baza de date Tempo-Online, INS
- [11]. *** Baza de date FAOSTAT
- [12]. *** <https://sites.google.com/site/cuniculturaromana/finantare/sprijinirea-fermelor-agricole-de-subzistenta>
- [13]. *** <http://proiectecufondurieuropene.blogspot.com/p/cresterea-iepurilor.html>.
- [14]. *** Programul SAPARD, Ministerul Agriculturii și Dezvoltării Rurale, <https://madr.ro/sapard.html>
- [15]. *** Agenția pentru Finanțarea Investițiilor Rurale, <https://www.afir.info/>