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ECONOMIC AND FINANCIAL ANALYSIS IN THE PRODUCTION OF PET RABBITS IN BAMBUÍ IN THE REGION OF ALTO SÃO FRANCISCO - MG

ANÁLISE ECONÔMICO-FINANCEIRA NA PRODUÇÃO DE COELHOS PET EM BAMBUÍ NA REGIÃO DO ALTO SÃO FRANCISCO -MG

Alexander Alexandre de Almeida[1]
Jean Kaique Valentim[2]
Joyce Janella[2]
Janaína Palermo Mendes[3]
Diego Pierotti Procópio[4]

Abstract: The segment of production and marketing of pet animals is growing in the Brazilian market. Among them, pet rabbits stand out. Thus, this study aimed to analyze the economic and financial viability of a pet rabbit-producing company in the municipality of Bambuí - MG in 2020. For this study, the structure of production costs and the calculation of financial indicators for the economic activity in question were elaborated. Based on the results obtained, the effective operating cost costs (R$ 9,081.60), total operating cost (R$ 10,344.94), and total cost (R$ 11,339.42) are related for one year and the production cycle of 600 units of rabbits. At the market price of $60.00/unit, the total revenue achieved is $36,000.00 and gross margin indicators ($26,918.40), net margin ($25,655.06) and profit ($24,660.59). All financial indicators achieved were positive, indicating the feasibility of implementing this project.

[1] Universidade Federal dos Vales do Jequitinhonha e Mucuri
[2] Universidade Federal da Grande Dourados
[3] Universidade Federal de Mato Grosso do Sul
[4] Universidade Federal de Mato Grosso

Keywords: cuniculture, production costs, a pet market.

Resumo: O segmento de produção e comercialização de animais de companhia está crescendo no mercado brasileiro. Entre eles, destaca-se o de coelhos Pet. Assim, este estudo teve como objetivo analisar a viabilidade econômico-financeira de uma empresa produtora de coelhos PET no município de Bambuí – MG no ano de 2020. Para este estudo, elaborou-se a estrutura de custos de produção e o cálculo de indicadores financeiros para a atividade econômica em questão. Com base nos resultados obtidos, os custos de custo operacional efetivo (R $ 9.081,60), custo operacional total (R $ 10.344,94) e custo total (R $ 11.339,42) estão relacionados pelo período de um ano e o ciclo de produção de 600 unidades de coelhos. Ao preço de mercado de R $ 60,00 / unidade, a receita total alcançada é de R $ 36.000,00 e os indicadores de margem bruta (R $ 26.918,40), a margem liquida (R $ 25.655,06) e lucro (R $ 24.660,59). Todos os indicadores financeiros alcançados foram positivos, indicando a viabilidade de implementação deste projeto.

Palavras-chave: cunicultura, custos produtivos, mercado pet.

INTRODUCTION

Pet cuniculture can be considered the economic activity responsible for the production of pet animals for commercialization (MACHADO; FERREIRA, 2014). This market segment has grown due to the change in the cultural habit of Brazilian society, which are introducing different species to the company in their homes (GANDRA et al. 2021). According to Mayer et al. (2017) Pet dogs are becoming increasingly popular as the world's population adopts a progressively urbanized lifestyle. Although rabbits were traditionally kept in outdoor cages in the United States of America, they have become increasingly common pets and now experience a level of care similar to that of many canine and feline companion animals (MAYER et al. 2017).

According to Machado (2012), the demand for dwarf rabbits (also known as mini rabbits) has been increasing in the Brazilian market and has become an investment option for companies operating in the PET segment. According to the Brazilian Association of The Industry of Pet Products (ABINPET) (2018), in the last survey of the population of pet

animals conducted in 2013, there were 2.2 million reptiles and small mammals (such as rabbits) in Brazilian homes. According to Almeida and Sacco (2012), it is an activity of easy management, accommodation, and food that generates excellent profitability for the producer.

However, the analysis of the cost of production of this activity is still little explored in the market, which can result in losses for producers. According to Batalha (2012), an enterprise's production cost can be defined as the total human and technological resources, which are measured in monetary units, and which are used in the production system for the production of goods and services. These production costs can be classified into fixed and variable.

The fixed cost is independent of the production level of the company and only exists in the short term, such as the depreciation of machinery and equipment. Variable costs are directly related to the company's production system, such as the food that is intended for the animals of a property (SENAR, 2014).

Thus, the evaluation of the production costs of zootechnical crops is essential for the decision-making of a business. In this context, this study aims to perform an economic and financial analysis of a rabbit-producing company.

MATERIAL AND METHODS

To obtain the financial information of the productive inputs and productive capacity were obtained from the literature review, which are the journal Capes and Google Scholar, giving a basis on the creation of PET rabbits and in the field, these being the local suppliers and a specific breeder, thus forming an inventory for the verification of costs and viability of the project. With this, it is possible to elaborate on the company's inventory and also to perform the economic and financial analysis of the activity in question. Descriptive data were made using the Excel program.

Through contact with suppliers, data were obtained regarding the amount of equipment and the value necessary for the acquisition of the materials that will make up the shed to start the construction of the shed. For the construction of the shed, the calculations were made through direct contact with the civil engineer of the college, calculating the amount that would be spent to make up the shed for the creation of 30 rabbits.

Following Senar's proposal (2014), some costs must be evaluated so that you can verify the feasibility, being:

(i) Effective Operational Cost (COE): comprises expenses that require monetary disbursement by the rural producer.

(ii) Total Operating Cost (TOC): comprises the sum of the COE with depreciation, insurance, and maintenance.

(iii) Total Cost (TC): comprises the sum of the TOC with the opportunity cost and the lease, considered as the item of "income of factors" in the budget structure of the economic activity explored.

(iv) Total Revenue (RT) or Gross Income (RB): the total revenue of the rural property, the price of the production by the quantity produced.

(v) Gross Margin (MB): Understands the difference between RT the COE.

(vi) Net Margin (ML): Understands the difference between RT by TOC.

(vii) Profit (L): Understands the difference between RT by CT.

RESULTS AND DISCUSSION

From the preparation of the company's inventory, it is possible to account for some fixed costs associated with the production structure, which are Depreciation, Fixed Capital Maintenance, Fixed Capital Insurance, and Opportunity Cost. For this, it is important to determine the initial value (R$18,594.50), final value (R$1,295.00), and the useful life of the items (Table 1). In addition, some financial information needs to be used as the interest rate of Maintenance (1% p.a.), Insurance (2% p.a.), and Opportunity Cost (10% p.a.), as recommended by Senar (2014). Table 1 shows information about the inventory of the company analyzed.

Table 1. Inventory of the pet rabbit production company

Item	Starting Value (R$)	Final Value (R$)	Shelf life (years)
Currents (7.5 m)	22.50	5.00	30
Shed	15.000.00	0.00	30
Cages (30 uni)	2.400.00	1.200.00	20

Feeders (30 uni)	450.00	30.00	10
Cymbals (30 uni)	5.00	0.00	20
Broom	9.00	0.00	1
Shows	8.00	0.00	1
Hose (10 m)	40.00	0.00	5
Wheelbarrow	200.00	10.00	5
Sprayer	60.00	0.00	10
Flamethrower	70.00	0.00	10
Rasp	5.00	0.00	10
Hoe	25.00	0.00	10
Cupboard	300.00	50.00	15
Total	**18.594.50**	**1.295.00**	-

Note: m - meters, uni - units, R$ - reais.

Table 2 presents information on the structure of production costs, as well as the calculation of financial indicators. The sale price of the rabbit is R$ 60.00/unit and can reach R$ 400.00/unit in Minas Gerais.

Table 2. Economic and financial analysis of the pet rabbit production company

Cost component	**R$/Year**	**R$/month**	**R$/rabbit**
Ration	5.841.60	486.80	9.74
Workforce	2.160.00	180.00	3.60
Phone and marketing	600.00	50.00	1.00
Energy	480.00	40.00	0.80
Effective Operating Cost (COE)	**9.081.60**	**756.80**	**15.14**
Depreciation	698.50	58.21	1.16
Other Fixed Costs			
Fixed Capital Maintenance	185.95	15.50	0.31
Insurance of Fixed Capital	198.90	16.57	0.33
ITR Taxes, Fees	180.00	15.00	0.30
Total Operating Cost (TOC)	**10.344.94**	**862.08**	**17.24**

Income of factors			
Interest in fixed capital	994.48	82.87	1.66
Total Cost (CT)	**11.339.42**	**944.95**	**18.90**
Quantity produced (units)	600.00	50.00	1.00
Financial indicators			
Total Revenue (RT)	36.000.00	3.000.00	60.00
Gross Margin (RT - COE)	26.918.40	2.243.20	44.86
Net Margin (RT - TOC)	25.655.06	2.137.92	42.76
Profit (RT - CT)	24.660.59	2.055.05	41.10

Note: R$ - Real.

The cost structure information is for the annual period. In which, the COE (R$9.081.60), TOC (R$10.344.94), and CT (R$11.339.42) for a production cycle of 600 units sold in one year. When considering the market price of R$60.00/unit, the RT achieved is R$36.000.00, and the indicators MB (R$26.918.40), ML (R$25.655.06), and L (R$24.660.59). All financial indicators achieved were positive, which indicates the feasibility of implementing this project (Table 2).

Studies that analyze the rearing of PET rabbits are scarce, leaving only the comparison with cut rabbits. According to Rodrigues (2007), if the rabbit production project is done according to local reality and culture, it is possible to make a profit. In its evaluation using 40 cut rabbits, it was possible to obtain at the end of the cycle a profit of 7,153.20 at the end of the 5th rearing period.

According to Vieira and Soares (2021), and Machado et al. (2012), most of the production costs are with animal feed, most commercial rations have the guarantee levels expressed in the packaging, but some do not meet the minimum requirements of the species, proposed in international tables and even leading to satisfactory performance result in high consumption and economic analysis is required.

In the country, rabbit breeding is concentrated in family properties, focusing on other creations, with cuniculture being secondary breeding (MACHADO et al. 2014). Thus, rabbits can be considered a strategic animal within the properties, because their production is an alternative activity besides being sustainable due to its integration potential (KLINGER et al. 2019). In addition to what was presented, as reported by Sordi (2016) this production requires

low investments, adding value, and ensuring families extra income beyond the contribution to rural development.

In the production of rabbits for meat, some studies verify the need for the main evaluation of the nutritional aspects of this type of rearing, aiming at reducing costs and improving the profitability of the producer (SOUZA et al. 2007; SORDI et al. 2016; KLINGER et al. 2019). Valentim et al. (2018), evaluating the profile of Pet rabbit producers reported that the producers were questioned about the performance of procedures to reduce feeding costs and 62.9% of these stated that, in addition, to feed, they provided bulky and cultural remains to minimize feeding costs.

Almeida and Sacco (2012) studied the technical feasibility of the implementation of cuniculture in a small rural property in Itapetininga - SP, with an estimate being made with a projection for one year of the sale, considering 70 matrices, 6 laparos per gestation, and attractiveness rate at 6%. In the work, the authors mention that among the fixed costs, labor is the most relevant item, since it comprises about 80% of them. In the variable costs, the ratio stands out. As for equipment costs, the higher cost is related to cages (90%) that totaled R$6,300 of the R$7,000 invested. The total capital needed for the implementation of this cuniculture would be around R$20,000.00 in the year studied. The authors also cite that the annual profit on this property will be 15%.

The breeding of rabbits, according to the Brazilian Scientific Association of Cuniculture (2013) presents valuable social importance, since it is a creation that occupies a small space, and can therefore be developed in small properties, integrating the other activities of the producer. People's time to care for animals and home space is being reduced, so traditional pet animals such as dogs and cats are losing ground to exotic and other less exploited animals such as the Pet rabbit. Valentim et al. (2018) report that the current market situation requires a greater professionalization of the cunicultor, which should assume a business attitude, since most of these are not properly assisted in the conduct of the activity. Among these aspects, evaluations of zootechnical, reproductive performance, and production costs are found.

According to the Brazilian Scientific Association of Cuniculture (ACBC, 2013), the survey of costs and expenses in each production cycle is essential, to use in the calculation of the Equilibrium Point This control will cause the producer to have in hand all the data of the production cycle, from birth to sales of rabbits, thus being able to know what is the minimum

amount of income to meet the expenses inherent to the production, so you will have a Balance Point when the total revenue amount is equal to the total costs and expenses, but for the cunicultor to obtain profitability with the invested capital, the value of sales must be higher than the costs employed.

CONCLUSION

The activity of production and commercialization of PET rabbits proved to be an economically profitable activity for the municipality of Bambuí/MG. Showing a considerable profit margin in the face of expenses serves as a support for the producer who wants to start its creation.

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