revista online de extensão e cultura
REALIZAÇÃO



DOI 10.30612/realizacao.v9i17.15988
ISSN: 2358-3401

Submitted on May 26, 2022
Accepted on June 4, 2022
Published on July 30, 2022

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

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

# ANÁLISIS ECONÓMICO Y FINANCIERO EN LA PRODUCCIÓN DE CONEJOS DE MASCOTA EN BAMBÚ EN LA REGIÓN DEL ALTO SÃO FRANCISCO-MG

Alexander Alexandre de Almeida
Universidade Federal dos Vales do Jequitinhonha e Mucuri
Jean Kaique Valentim*
Universidade Federal da Dourados
Joyce Zanella
Universidade Federal da Dourados
Janaina Palermo Mendes
Universidade Federal de Mato Grosso do Sul
Diego Pierotti Procopio
Universidade Federal de Mato Grosso

**Abstract:** The segment of production and commercialization of companion animals is growing in the Brazilian market. Among them, stands out the one of pet rabbits. Thus, this study aimed to analyze the economic-financial viability of a company producing pet rabbits for the municipality of Bambuí/MG. For this study, the production cost structure and the calculation of financial indicators for the economic activity in question were elaborated. Based on the results obtained, COE costs (R$ 9,081.60), COT (R$ 10,344.94) and TC (R$ 11,339.42) are related for the period of one year and the production cycle of 600 rabbits units. The market price of R$ 60.00 / unit, the RT achieved is R$ 36,000.00 and the indicators MB (R$ 26,918.40),

* Corresponding Author: kaique.tim@hotmail.com

ML (R$ 25,655.06) and L (R$ 24,660.59). All the financial indicators achieved were positive, indicating the feasibility of implementing this project.

**Keywords:** cuniculture, productive costs, 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.

**Resumen:** El segmento de producción y comercialización de mascotas está creciendo en el mercado brasileño. Entre ellos destaca el conejo PET. Así, este estudio tuvo como objetivo analizar la viabilidad económico-financiera de una empresa productora de conejos PET en el municipio de Bambuí - MG en 2020. Para este estudio se elaboró la estructura de costos de producción y el cálculo de indicadores financieros para la actividad económica en cuestión. Con base en los resultados obtenidos, se relacionan los costos de costo operacional efectivo (R$ 9.081,60), costo operacional total (R$ 10.344,94) y costo total (R$ 11.339,42) para el período de un año y el ciclo de producción de 600 unidades de conejos. Al precio de mercado de R$ 60,00/unidad, la facturación total obtenida es de R$ 36.000,00 y los indicadores de margen bruto (R$ 26.918,40), margen neto (R$ 25.655,06) y lucro (R$ 24.660,59). Todos los indicadores financieros alcanzados fueron positivos, indicando la viabilidad de implementar este proyecto.

**Palabras clave:** cunicultura, costos de producción, mercado de mascotas.

## INTRODUCTION

Pet rabbit farming (Pet) can be considered as the economic activity responsible for the production of companion animals for commercialization Machado and Ferreira (2014). This market segment has grown due to the change in the cultural habits of Brazilian society, which are introducing different species for companionship in their homes (GANDRA et al., 2021). According to Mayer et al. (2017), pet rabbits 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).

For Machado (2012), the demand for dwarf rabbits (also known as mini rabbits) has been growing in the Brazilian market and has become an investment option for companies operating in the PET segment. According to the Brazilian Association of the Pet Products Industry (ABINPET) (2018), in the last survey of the pet population carried out 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 that is easy to manage, house and feed and generates great profitability for the producer.

However, the analysis of production costs for this activity is still little explored in the market, which can result in losses for producers. According to Batalha (2012), the production cost of an enterprise 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 as fixed and variable.

Fixed costs are independent of the company's production level and only exist 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 animals on a property (SENAR, 2014).

Therefore, the assessment of production costs of livestock crops is essential for business decision-making. In this context, this study aims to carry out an economic-financial analysis of a rabbit production company.

## MATERIALS AND METHODS

To obtain financial information on production inputs and production capacity, bibliographical review was carried out, such as the Capes journal and Google Scholar, providing a basis for raising PET rabbits and the field, including local suppliers and a specific breeder, thus forming an inventory to verify the costs and viability of the project. With this, it is possible to prepare the company's inventory and also to perform the economic-financial analysis of the activity in question. Descriptive comparisons were made to the data using the Excel program.

Through contact with suppliers, data were obtained regarding the quantity of equipment and the amount required to purchase the materials that will make up the shed to begin construction of the shed. For the construction of the shed, calculations were made through direct contact with a civil engineer at the college, calculating the amount that would be spent to compose the shed for raising 30 rabbits.

Following the Senar proposal (2014), some costs must be assessed to verify viability, namely:

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

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

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

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

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

(vi) Net Margin (ML): Comprises the difference between RT and COT.

( vii ) Profit (L): Includes the difference between RT and CT

## RESULTS AND DISCUSSION

By preparing 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. To do this, it is important to determine the initial value (R$18,594.50), final value (R$1,295.00) and useful life of the items (Table 1). In addition, some financial information needs to be used, such as the interest rate for Maintenance (1% per

year), Insurance (2% per year) and Opportunity Cost (10% per year), as recommended by Senar (2014). Table 1 presents information about the inventory of the company analyzed.

**Table 1.** Inventory of the company producing pet rabbits.

| **Item** | **Initial Value (R$)** | **Final Value (R$)** | **Useful life (years)** |
|---|---|---|---|
| Chains (7.5 m) | 22.50 | 5.00 | 30 |
| Warehouse | 15,000.00 | 0.00 | 30 |
| Cages (30 units) | 2,400.00 | 1,200.00 | 20 |
| Feeders (30 units) | 450.00 | 30.00 | 10 |
| Small plates (30 units) | 5.00 | 0.00 | 20 |
| Broom | 9.00 | 0.00 | 1 |
| Squeegee | 8.00 | 0.00 | 1 |
| Hose (10 m) | 40.00 | 0.00 | 5 |
| Wheelbarrow | 200.00 | 10.00 | 5 |
| Spray | 60.00 | 0.00 | 10 |
| Flamethrower | 70.00 | 0.00 | 10 |
| Scraper | 5.00 | 0.00 | 10 |
| Hoe | 25.00 | 0.00 | 10 |
| Cabinet | 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 production cost structure, as well as the calculation of financial indicators. The sale price of rabbits is R$60.00/unit and can reach R$400.00/unit in Minas Gerais.

**Table 2.** Economic and financial analysis of the company producing pet rabbits.

| **Cost component** | **R$/Year** | **R$/month** | **R$/rabbit** |
|---|---|---|---|
| Ration | 5,841.60 | 486.80 | 9.74 |
| Workforce | 2,160.00 | 180.00 | 3.60 |
| Telephone 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 |
| Fixed Capital Insurance | 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** |
| Factor income | | | |
| Fixed capital interest | 994.48 | 82.87 | 1.66 |
| **Total Cost (TC)** | **11,339.42** | **944.95** | **18.90** |
| Quantity produced (units) | 600.00 | 50.00 | 1.00 |
| Financial indicators | | | |
| Total Revenue (TR) | 36,000.00 | 3,000.00 | 60.00 |
| Gross Margin (RT - COE) | 26,918.40 | 2,243.20 | 44.86 |
| Net Margin (RT - COT) | 25,655.06 | 2,137.92 | 42.76 |
| Profit (RT - CT) | 24,660.59 | 2,055.05 | 41.10 |

Note: R$ - reais.

The cost structure information is for the annual period. In which, the COE (R$9,081.60), COT (R$10,344.94) and CT (R$11,339.42) for a production cycle of 600 units sold in the period of 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 executing this project (Table 2).

Studies analyzing the breeding of PET rabbits are scarce, with only comparisons with meat rabbits remaining. According to Rodrigues (2007), if the rabbit production project is carried out in accordance with the local reality and culture, it is possible to make a profit. In his evaluation using 40 meat rabbits, it was possible to obtain a profit of 7,153.20 at the end of the cycle at the end of the 5th breeding period.

According to Vieira & Soares (2021) and Machado et al., (2012), a large part of the production costs are related to animal feed. Most commercial feeds have the guaranteed levels expressed on the packaging, but some do not meet the minimum requirements of the species, proposed in international tables and even leading to satisfactory performance, they result in high consumption, requiring an economic analysis.

In the country, rabbit farming is concentrated on family properties, with a focus on other types of farming, with rabbit farming being a secondary type of farming (MACHADO et al.,

2014). Thus, rabbits can be considered a strategic animal within properties, since their production is an alternative activity in addition to being sustainable due to their potential for integration (KLINGER et al., 2019) . In addition to what has been presented, as reported by Sordi (2016), this production requires low investments, adding value, guaranteeing families an extra income in addition to contributing to rural development.

In the production of rabbits for meat, some studies verify the need for a primary evaluation of the nutritional aspects of this type of breeding, aiming at reducing costs and improving the producer's profitability (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 producers were asked about the implementation of procedures to reduce feed costs and 62.9% of them stated that, in addition to feed, they provided bulky foods and crop residues in order to minimize feed costs.

Almeida and Sacco (2012) studied the technical feasibility of implementing rabbit farming on a small rural property in Itapetininga, SP, and made an estimate with a projection for one year of sales, considering 70 matrices, 6 young per gestation and a 6% attractiveness rate. In the study, the authors mention that among the fixed costs, labor is the most relevant item, since it comprises approximately 80% of them. In the variable costs, feed stands out. As for equipment costs, the highest cost is related to cages (90%), which totaled R$6,300 of the R$7,000 invested. The total capital required to implement this rabbit farming would be around R$20,000.00 in the year studied. The authors also mention that the annual profit on this property will be 15%.

According to the Brazilian Scientific Association of Rabbit Breeding (2013), rabbit farming has a valuable social importance, as it is a type of farming that takes up little space and can therefore be developed on small properties, integrating the producer's other activities. People's time to care for animals and the space in their homes are being reduced, so traditional companion animals such as dogs and cats are losing ground to exotic animals and other less explored animals such as pet rabbits. Valentim et al., (2018) report that the current market situation requires greater professionalization of rabbit farmers, who must adopt a businesslike attitude, since most of them do not receive adequate assistance in conducting their activity. These aspects include evaluations of zootechnical and reproductive performance and production costs.

According to the Brazilian Scientific Association of Rabbit Breeding (ACBC, 2013), surveying costs and expenses in each production cycle is essential in order to use them to determine the Break-Even Point. This control will allow the producer to have all the data on the

production cycle at hand, from birth to sales of the rabbits, thus being able to know what is the minimum amount of income necessary to cover the expenses inherent to production. Thus, there will be a Break-Even Point when the value of total revenue is equal to the total costs and expenses. However, for the rabbit farmer to obtain profitability with the invested capital, the value of sales must be greater than the costs employed.

## CONCLUSION

The activity of production and commercialization of PET rabbits has proven to be an economically profitable activity for the municipality of Bambuí/MG. Demonstrating a considerable profit margin in relation to the expenses, serving as support for the producer who wants to start his breeding.

## REFERENCES

ALMEIDA, DG; SACCO, SR Study of the technical and economic feasibility of implementing rabbit farming on small rural properties. **Journal of Management, Education & Technology** , v. 1, n. 1, p. 2012.

Brazilian Association of the Pet Products Industry – ABINPET. **Market data** . Available at: http://abinpet.org.br/site/mercado/ . Accessed on: May 12, 2018.

BATALHA, M. O. **Agroindustrial Management** . New York: Atlas, 2012.

DE SENA GANDRA, Érika Rosendo et al. Rabbit breeding as a sustainable production alternative in the Itamarati /MS Settlement. **RealizAção** , v. 8, n. 15, p. 81-91, 2021.

KLINGER, Ana Carolina Kohlrausch et al. Economic viability of sweet potato husks in rabbit diets. **Custos e@ gronegócio on line** , v. 15, n. 4, p. 370-388, 2019.

MACHADO LC Opinion: Overview of Brazilian Rabbit Farming. **Brazilian Rabbit Farming Journal** , v. 2, n. 1, p 12. 2012.

MACHADO, LC FERREIRA, WM; Opinion: Organization and strategies of Brazilian rabbit farming seeking solutions. **Brazilian Journal of Rabbit Farming** , v. 6, n.1, p. 1- 11. 2014.

MAYER, JOERG; BROWN, SUSAN; MITCHELL, MARK A. Survey to investigate owners ' perceptions and experiences of pet rabbit husbandry and health. **Journal of Exotic Pet Medicine** , vol. 26, no. 2, p. 123-131, 2017.

SENAR – National Rural Training Service. Dairy Farming. Brasília, 2014.

SORDI, VF; ROSA, CO; MARTINS, VNA Rabbit farming in the diversification strategy on rural properties. **Electronic Journal of the Faculty of Exact and Earth Sciences: Production/construction and technology** , v. 18, n. 3, p. 1 - 20. 2016.

SOUZA, CD, SOUZA, JCD; FARIA, ACD Joint cost allocation methods applied to rabbit farming: a case study. **Rural and Agroindustrial Organizations** , v. 9, n. 1, p. 98-110, 2007.

VALENTIM, JK, MACHADO, LC, LOPES, VL, PAULA, KLC, BITTENCOURT, TM, RODRIGUES, RFM, ... & DALLAGO, GM Profile of pet rabbit breeders in Brazil. **Brazilian Journal of Rabbit Breeding** , v. 13, n. 1, p. 27-45. 2012. *http://www. rbc . acbc . org. br / images / Perfil_dos_cunicultores_PET . pdf* .

VIEIRA, MM, & SOARES, DB Performance and economic analysis of growing crossbred rabbits supplemented with corn silage or sunflower silage. **Pesquisa Agropecuária Gaúcha** , v. 27, n. 1, p. 99-109, 2021.

RODRIGUES, PAA Rabbit Farming: A study on the application of cost accounting aimed at small business owners. **Monograph – Catholic University of São Paulo** , 2007, São Paulo. P. 63.