

ANALYSIS OF THE PRODUCTIVE POTENTIAL OF CAMAPU FRUITS (*PHAYSALIS ANGULATA*) IN THE CITY OF ITAREMA

Prof. Francisco Ageu Ribeiro do Nascimento. E-mail: ageurb@gmail.com
Prof. Jardel Ribeiro Batalha. E-mail: jardel.jrb@gmail.com
Escola de Ensino Médio em Tempo Integral Valdo de Vasconcelos Rios

Participantes: Francisca Tamires dos Santos; Francisco Jonatas Xavier dos Santos

ABSTRACT

The research makes an analysis of the productive potential of fruits of Camapu (*Physalis angulata*) to prove its viability of production in the municipality of Itarema. Data collection and analysis proved, by means of plant cultivation, that *P. Angulata* presents good development and satisfactory fruit production. It concludes with this research that the fruit production of this plant will be a good source or complementation of income to small itaremenses producers.

Keywords: Camapu; Productivity; Itarema

ANÁLISE DO POTENCIAL PRODUTIVO DE FRUTOS DA CAMAPU (*PHAYSALIS ANGULATA*) NA CIDADE DE ITAREMA

RESUMO

A pesquisa faz uma análise do potencial produtivo de frutos da Camapu (*Physalis angulata*) para comprovar sua viabilidade de produção no município de Itarema. Foi feita a coleta e análise de dados comprovando, por meio do cultivo da planta, que a *P. angulata* apresenta um bom desenvolvimento e uma satisfatória produção de frutos. Conclui-se com essa pesquisa que a produção de frutos dessa planta será uma boa fonte ou complementação da renda aos pequenos produtores itaremense.

Palavras-chave: Camapu; Produtividade; Itarema

INTRODUCTION

Among several native species found in the city of Itarema, one popularly known as Camapu (*Physalis angulata*) stands out, which is very abundant in this region, especially during the rainy season. It belongs to the Solanaceae Family that is found in South America, and in Brazil, 11 species have already been cataloged, distributed throughout the national territory (CARVALHO, 2014).

According to Fischer (2000) it is classified as a very tolerant species due to its adaptability to different types of soils. However, the lack of studies on proving the productive potential of Camapu's fruits has been preventing it from being demonstrated that this species is a great alternative for planting and income for small and medium producers in the city

MAIN GOAL

- Prove the productive potential of Camapu's fruits for the municipality of Itarema

Specific objectives

- Check the most suitable organic fertilizer for a better efficiency in your productivity
- Establish a partnership with the Municipality of Itarema to publicize the productivity of Camapu to rural producers.

METHODOLOGY

It is a case study of an applied nature with a quantitative approach. Its general objective is exploratory, with the main intention of proving the productive potential of Camapu (*Physalis angulata*) fruits.

Data collection consisted of four stages: bibliographic survey, botanical identification, interviews with the local population and the cultivation of *Physalis angulata* at Escola de Ensino Médio em Tempo Integral Valdo de Vasconcelos Rios. For the data analysis, the opinions expressed by the population in the interviews and the information acquired through the weekly monitoring of the development, production of fruits and flowers of the cultivated species, were tabulated and compared with the specific bibliography.

RESULTS

The first result obtained was the identification of the species we are studying, *Physalis angulata*. The proof was acquired thanks to the partnership with the IFCE Botany Laboratory on the Acaraú campus, IFLORA, which allowed the scientific confirmation of the plant under study.

Figure 1 – Representation of the structures of *Physalis angulata*

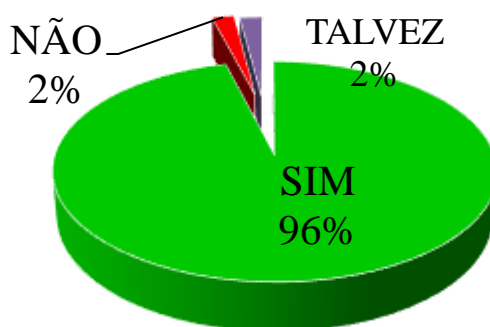


Source: Authors (2018). Caption: A, standard appearance of the flower; B from the branch of *P. angulata* with leaves, flowers and fruits; C, appearance of the calyx and longitudinal section of the fruit and D, ripe fruit.

Based on the previous figure, it can be seen that in image “A” it is possible to visualize the standard aspect of the flower, in “B” the aspect of the *P. angulata* branch that presents leaves, flowers and fruits, “C” the aspect of the calyx and longitudinal section of the fruit and in “D” the aspect of the ripe fruit.

The interview with the population of Itarema proved that 96% of them knew the plant under study (graph 1), proving to be a common plant in the municipality.

Graph 1 – Percentage of individuals who recognize that the Camapu plant occurs in the municipality of Itarema.



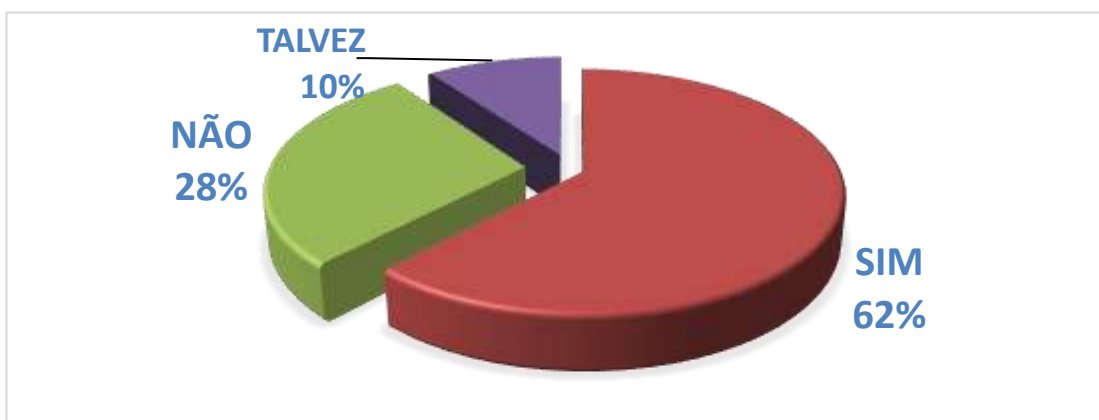
Source: Authors (2018).

Graph 1 also proved that the project is viable, since a minority is not aware of the plant. This project in partnership with the municipal government could generate great results for

rural producers in Itarema. Because, according to Instituto Nacional de Colonização e Reforma Agrária – INCRA (2017), the successful cultivation of *P. angulata* in a settlement in Santa Catarina shows that it is possible to have a guarantee of income for the producer throughout the year, even with the low cost of implantation.

According to the opinion of the interviewees (Graph 2) Camapu is easy to grow, as 62% reported that this plant does not require large investments for its cultivation.

Graph 2 – The ease of cultivation in Itarema according to the interviewees.

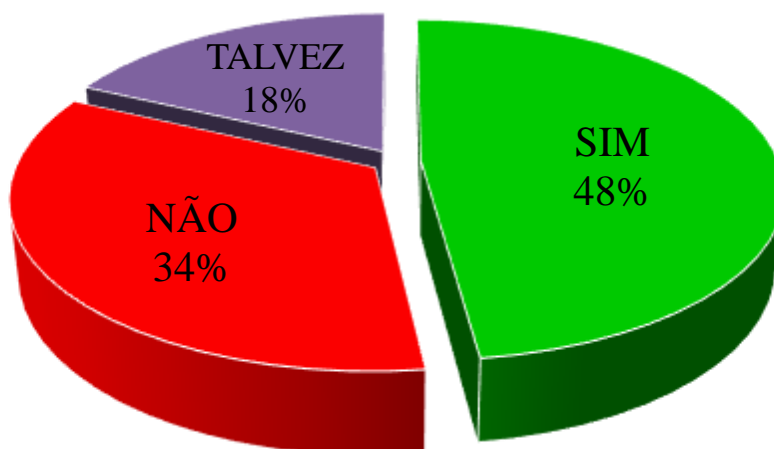


Source: Authors (2018).

In view of graph 2, only 28% said that the cultivation of Camapu was difficult. Bolzan (2013) emphasizes that from sowing to the field and the first harvest, fruit production occurs in an average period of 90 days depending on altitude. In Itarema, the cultivation of *P. angulata* developed at EEMTI Valdo de Vasconcelos Rios proved that in less than 3 months, small rural producers will have results in their cultivation, as the first flowers appeared after 62 days and the first fruits after 65 days.

The project also assessed the population's view of the economic value of this fruit (graph 3). For 48% of the Itarean population, Camapu can contribute to their economy and 34% disagreed with this statement.

Graph 3 – Representation of the opinion of the interviewees in relation to the economic importance of Camapu.

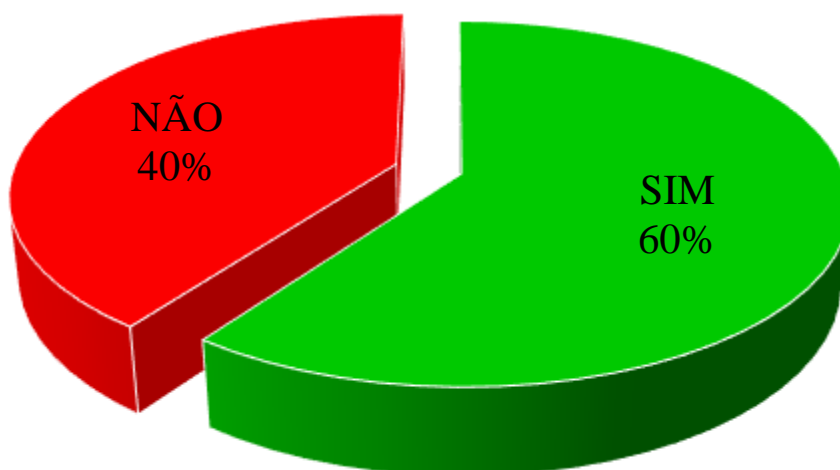


Source: Authors (2018).

In this context presented in Graph 3, the lack of information on the current scenario of the fruit market was evident, which according to Mendes (2017) the national average of production varies between 2 to 3 tons of fruit per year that are sold to the international market. with values that vary between US\$ 12 to 16 per kg of fruit.

The research proved that Camapu is economically viable, due to the market value mentioned above. Furthermore, for 60% of those interviewed in Itarema, this species has some medicinal or gastronomic use (Graph 4).

Graph 4 – Judgment of respondents on the possibility of medicinal or gastronomic use of Camapu.



Source: Authors (2018)

Regarding the usefulness of Camapu for medicinal purposes, 60% stated that it is used in folk medicine. In the Amazon, *P. angulata* has its fruits, leaves and roots used in the fight against diabetes, rheumatism, skin, bladder, kidney and liver diseases.

Based on the evaluations carried out in the Camapu cultivation study area, developed at EEMTI Valdo de Vasconcelos Rios, it can be said that fruit production is viable in the region with the use of correct fertilization (Table 1).

Table 1 – Weekly average of Camapu productivity in the study area with different organic fertilization.

CANTEIRO	MÉDIA DE FRUTOS DA ÁREA	MÉDIA DE FLORES POR PLANTA
1	0	0
2	3	8
3	25	6
4	11	3
5	1	1

Source: Authors (2018)

Table 1 shows that beds “1”, “2” and “5” had low fruit productivity, which can be explained by the mortality of several plants, where only about 45% of them developed per bed. The fertilizers used in the above mentioned beds are contraindicated for the cultivation of Camapu.

In plot “3” the cashew leaf fertilizer was tested, which obtained the best result with 100% of the developed plants. This area presented a weekly production of 25 fruits/area and an average of six flowers per species. In addition, seedlings grown in plot “3” produced approximately 2 kg during the six-month cycle.

SOCIAL RELEVANCE OF THE PROPOSAL

Brazil is one of the richest countries in biodiversity in the world and there are several native fruit species, where many of them can be economically exploited. In addition to the

possibility of exploitation for in natura consumption, these species can be exploited by the agroindustry and the pharmaceutical sector (BOLZAN, 2013). It is very important to stimulate the recognition of the flora, both for pharmaceutical exploitation and for economic exploitation. Camapu, being a plant that is very consistent with these two ideas, should have its recognition, since as our study shows it is a very productive plant that can generate income for small and medium producers.

IMPACT ON THE DISSEMINATION OF KNOWLEDGE AT SCHOOL

In addition to botanical knowledge and proof of productivity, the project also aims to bring economic viability to Itarema, decentralizing the only employment opportunities in the monocultures that currently exist in the municipality, generating a new income alternative.

FINAL CONSIDERATIONS

It is concluded with this research that the production of fruits of Camapu can be a viable activity for small producers of Itarema, but the correct use of organic fertilization will be necessary, recommending, based on the results of this research, the use of cashew leaves. Therefore, with the continuation of this research, it is necessary to encourage rural producers to develop the cultivation of this new crop, where the project proved to be an activity with economic viability.

REFERENCES

- BOLZAN, R. P. **Conservação pós-colheita e caracterização de frutos de physalis (*physalis angulata* L.) produzidos na região metropolitana de curitiba-paraná.** 2013. 100f.. Tese (Doutorado) – Universidade Federal do Paraná, Departamento de Fitotecnia e Fitossanitarismo, Curitiba, 2013.
- CARVALHO, T. C. et al. Germinação de sementes de *Physalis angulata* L.: estágio de maturação do cálice e forma de armazenamento. **Pesquisa Agropecuária Tropical**, Goiânia, v. 44, n. 4, p. 357-362, out./dez. 2014.
- FISCHER G. Crecimiento y desarrollo. In: FLOREZ, V.J.; FISCHER, G.; SORA, A. **Producción, pos cosecha y exportación de la uchuva (*Physalis peruviana* L.).** Bogotá: Unibiblos, Universidad Nacional de Colombia, 2000.

INCRA. **Assentados catarinenses apostam no plantio de *Physalis***. Disponível em: <<http://www.incra.gov.br/assentados-catarinenses-apostam-no-plantio-de-physalis>>
Acesso em: 20 ago. 2017.

MENDES, C. ***Physalis***. Disponível em: <<https://pt.slideshare.net/cristielimendes/physalis-51424250>> Acesso em: 20 ago. 2017.