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COMPARATIVE ANALYSIS OF GEOGRAPHICAL INDICATIONS OF THE NORTH OF MINAS GERAIS AND ORTIGUEIRA PARANAENSE

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ABSTRACT

The study performs a comparative analysis between the Geographical Indications (GIs) of the North of Minas and Ortigueira-PR, both related to the production of bee honey. The research was carried out with bibliographical, descriptive and documentary research. The data highlight the particularities of GIs in terms of territory, history, melliferous flora and characteristics of the honey produced. In the North of Minas, mastic honey, with its dark color and antioxidant properties, is the result of an extensive area that covers 64 municipalities. GI Ortigueira, located in a single municipality, produces a light-colored honey, linked to a diversity of native flowers. The study emphasizes the economic, cultural and protection benefits conferred by GIs to producing regions, as well as the differences in the strategies used for the consolidation and valorization of these products in the national and international market.

Keywords: Geographical Indication. Honey. Ortigueira Paranaense. North of Minas.

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INTRODUCTION

A Geographical Indication (GI) is a geographical name that identifies a product or service as originating from a delimited geographical area when a certain quality, reputation or other characteristic is essentially attributed to that geographical origin (INPI, 2023).

Geographical Indications can bring positive contributions to local economies and to the activity of the regions, as they provide the real meaning of value creation (INPI, 2023).

In Brazil there are two types of Geographical Indications (GI), the Denomination of Origin (DO) and the Indication of Origin (IP). The Designation of Origin (DO) is the geographical name of a country, city, region or locality in its territory, which designates a product or service, whose qualities or characteristics are exclusively or essentially due to the geographical environment, including natural and human factors (INPI, 2013). The Indication of Origin (IP) is the geographical name of a location or region that has become known as the center of extraction, production, or manufacture of a certain product or provision of a certain service (INPI, 2023).

To register a GI in Brazil, there are a series of steps, and the National Institute of Industrial Property (INPI) is responsible for granting this registration, valid throughout the national territory. To make an application for registration of a GI, it is necessary to comply with certain requirements, these vary from the procedural representative who makes the application and the type of GI that is requested (INPI, 2023).

Geographical Indications (GIs) are collective tools for valuing traditional products linked to certain territories. They have two main functions: to add value to the product; protect the producing region (SEBRAE, 2021).

This study aims to comparatively analyze the Geographical Indication: North of Minas and the Geographical Indication: Ortigueira, both GIs producing bee honey.

Both Igs represent enterprises that produce honey from the Apis mellifera bee, the difference is in the predominant melliferous flora: while the honey from the North of Minas is produced from the mastic tree, the honey from Ortigueira is derived from varied flowerings of native plants.

As specific objectives, we have: a) to compare the characteristics of the two Geographical Indications whose main product is bee honey; b) to verify the importance of Geographical Indications for the regions of the North of Minas and Ortigueira; and c) to show the differences between the Geographical Indications of the North of Minas Gerais

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and Ortigueira-PR, highlighting the particularities of each one and what makes them different.

This study is relevant because it allows us to identify the specificities of each GI that make their territories unique and also what were the strategies used by each region to consolidate their products in the market and strengthen their cultural identities, serving as a comparison model for other Brazilian contexts with potential for certification.

GEOGRAPHICAL INDICATION ORTIGUEIRA

According to the Brazilian Institute of Geography and Statistics (IBGE), the name Ortigueira is derived from the nettle plant, whose stem and leaves produce itchy burning on the skin, a stinging rash. The city is located 247 km from the capital with a population of 24,192 inhabitants residing in the municipality with a territorial area of 2,429,520 km² (IBGE, 2022).

Beekeeping in Ortigueira began with the Kalçoviski family around the 1970s, the patriarch and his three sons were the forerunners in the production and marketing of honey, but before the 1960s honey was already produced, but only for consumption (SEBRAE, 2021).

From the 1980s, beekeeping began to take off, motivated by Tadeu Kalçoviski, who improved the extraction technique and taught other beekeepers, becoming a profitable business. But it was only in 1984 that the Association of Ortigueirenses Honey Producers (APOMEL) (SEBRAE, 2021) was founded.

The oldest honey producers passed on all their experience to the new beekeepers that emerged, in this way the practice of beekeeping became a reference in the state and beekeepers over the years produced more and better taking advantage of the favorable climate and the blooms. The soil and its formation, the climate, temperature and the action of man influence the quality of the melliferous flora of Ortigueira. Each botanical source of nectar results in the variation of composition, chemistry, physics and sensory of honey. Color, viscosity, hygroscopic properties and pH were determined by its botanical origin, associating honey with the geographical environment, this link was proven through pollen analysis, differing from Ortigueira honey, of excellent quality, whose color is clear and has a mild flavor, being this a unique honey (INPI 2015).

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GEOGRAPHICAL INDICATION NORTH OF MINAS

The North Minas Geographical Indication encompasses a total of 64 municipalities with vegetation divided between caatinga and cerrado, enabling the growth of native trees in these regions (SEBRAE, 2021). Beekeeping in the region began around 1980, becoming important, both for residents and for the economy of the municipalities covered by the geographical indication (SEBRAE, 2021).

According to SEBRAE (2021) the honey produced, mastic honey, typical of the region, was a less valued product than wild honey. Some time ago, however, this stigma was overcome and the achievement of the title of Denomination of Origin (DO), further strengthens the product.

The honey from the North of Minas Gerais is produced from the nectar of the aroeira-do-sertão, which has phenolic secretions produced near the nectaries and excreta of psyllid insects. It contains a high concentration of phenolic compounds and unlike other honeys, there is the presence of metal. Knowing the beekeeping flora, identifying the aroeira-do-sertão so that the hives can be fixed, the moment of flowering, which depending on the region can vary, and the rigorous process of hive management and honey collection, allowed to obtain a monofloral mastic honey with the maximum expression of its typical characteristics and qualities (INPI, 2021).

CHARACTERIZATION OF BEE HONEY

Honey is a substance produced by honey bees, especially those belonging to the genus Apis. The production of honey happens by the nectar of flowers that carry with them a high nutritional value. Bees use part of the honey produced to feed themselves and the other part is housed in combs, for future supply of the offspring in a possible period of scarcity (BERA, 2007).

Known and consumed by man for more than 200 thousand years, honey is surrounded by mysticism, legends and beliefs. Because it contains a large amount of glucose and fructose, honey becomes a quality energy food. According to the environment in which it is produced, honey undergoes changes, and this is fundamentally a result of the quality, quantity, nutritional specificity, and variety of plants that flourish and produce nectar in a given region. There are cases in which a flora predominates, some honeys, giving them their own characteristics. These possibilities offer variations of the product with characteristics sought by its consumers (ZAMBERLAN, 2010).

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Santos and Gomes (2023) reinforce that the composition of honey varies greatly, as it depends on the floral origin and species of the bee, in addition, on the environmental conditions of the region where it is produced (soil and climate) and also on the way the product is collected and processed (GOMES, SANTOS, 2023)

There is great interest in evaluating the antioxidant capacity of honey, as studies prove its therapeutic action. Flavonoids and polyphenols are some of the compounds that can give honey antioxidant properties. The existence of these properties can confer the use of honey as a natural food preservative, and its action is known as an inhibitor of the reaction that causes the browning of food (SERRA, 2009).

METHODOLOGY

The present aimed to analyze, comparatively, two Geographical Indications, which are Ortigueira and Norte de Minas. The Geographical Indications were chosen because it is the same product, honey, in order to be able to verify the main differences between the GIs and what it has added in the regions where they are part.

The research was carried out through the study of articles that explain data about the GI of Ortigueira, GI of the North of Minas and the creation of a Geographic Identity. The stages of this research consist of: a bibliographic, descriptive, documentary research with the purpose of deepening the knowledge about GIs.

In this sense, a research was carried out in books, internet search sites, articles, theses and dissertations, to formulate the theoretical basis of the study. The bibliographic research is based on published materials, books, articles and material available on the *internet* and demonstrated through comparative tables (FILHO; FILHO, 2015).

RESULTS AND DISCUSSIONS

The Geographical Indications (GIs) of the North of Minas and Ortigueira stand out as tools for territorial enhancement, reflecting the productive and cultural specificities of each region. Next, the particularities of each GI, their contributions to regional development and the challenges faced in consolidating their products in the market are discussed.

The Geographical Indication (GI) of Ortigueira is configured as a Denomination of Origin (DO) and refers to the honey of Apis mellifera bees, from the flowering of native plants, such as assapeixe, capixingui, gabiroba, pitanga, lixa, gurucaia, red mastic and cinnamon. The physicochemical properties of honey (color, viscosity, hygroscopic

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characteristics and pH) are determined by the geographical conditions of Ortigueira, including the humid mesothermal subtropical climate, the various botanical sources of nectar and the characteristics of the soil and temperature, in addition to human influence. This set of factors results in a light amber to extra white honey, which gives the local production a unique diversity and its own characteristics. The registration of Denomination of Origin (DO) was granted in 2015, with the Association of Ortigueirenses Honey Producers (Apomel) as the applicant (INPI, 2021).

Figure 1 - IG - Ortigueira

Source: INPI, 2024.

Figure 2 - Municipality of Ortigueira

Source: Statistical Notebook Municipality of Ortigueira, 2024.

In the 1980s, after an exchange of experiences with producers in the state of Piauí, the beekeepers of Ortigueira improved their cultivation techniques and gained national prominence in honey production. In 1998, the city occupied the 47th position in the national ranking of beekeeping, and since then it has remained in evidence. In 2019, Ortigueira produced more than 795 tons of honey, ahead of cities in several important cities in this

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production. Ortigueira's contribution has been essential to consolidate Paraná as the largest honey producer in Brazil, with a production of more than 7,229 tons in 2019 (Pawlak; Pear tree; Sartori, 2021).

The granting of the DO registration was in 2015 and had as applicant the Association of Ortigueirenses Honey Producers (APOMEL) (INPI, 2021). The Association of Honey Producers of Ortigueira (APOMEL) emerged from a partnership between the Municipal Government, the Paraná Institute of Technical Assistance and Rural Extension (EMATER) and SEBRAE, with the objective of promoting the technical, professional, economic and social development of its members.

The association offers solutions for small producers to improve their businesses through efficient strategic planning. In addition, beekeepers receive guidance to strengthen the honey production chain in the region, understanding that, through beekeeping, it is possible to transform their reality. Currently, APOMEL has about 50 members and accounts for approximately 90% of the total honey production in Ortigueira, 6% of the production in Paraná and 0.6% of the national production (Ortigueira City Hall, 2024).

In the search for recognition of the Denomination of Origin of Aroeira Honey from the North of Minas, the tasks were distributed among different entities. The Ezequiel Dias Foundation (FUNEB) was responsible for the studies to characterize the honey, in partnership with the Development Company of the São Francisco and Parnaíba Valleys (CODEVASF) and the Bank of the Northeast. SEBRAE hired the consultant who coordinated the procedures and documentation necessary for registration with the BPTO. CODEVASF, in turn, collected soil and honey samples for the studies, in addition to financing part of the research, promoting articulations between those involved in the production chain and monitoring all actions related to GI. It also organizes meetings to disseminate information about GI. The Cooperative of Beekeepers and Family Farmers of Northern Minas Gerais (COOPEMAPI) has been in charge of institutional articulations to ensure the necessary support (Demier et *al.* 2020).

From the research conducted by FUNED, unique characteristics were identified that allow honey to be classified as a distinct product, capable of being protected and valued through the registration of a Geographical Indication (Demier et *al.* 2020).

The lack of knowledge of producers about the procedures, challenges and potentialities of the Geographical Indication (GI) of Aroeira Honey was one of the main obstacles to the progress of the actions, resulting in a limited participation of beekeepers in

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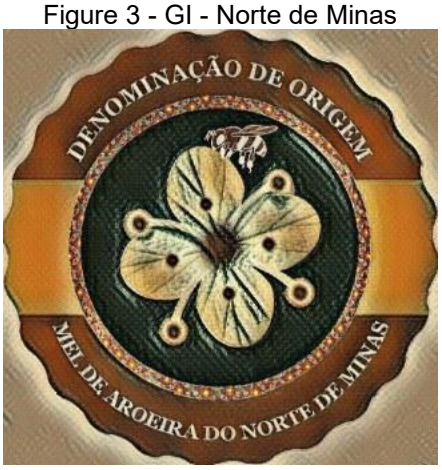
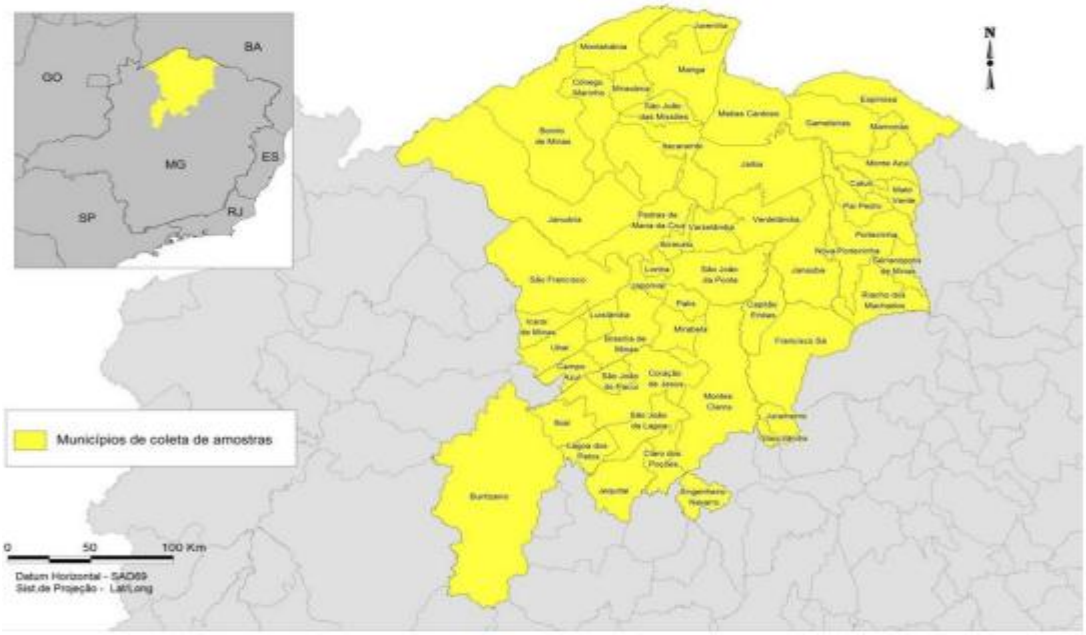
discussions and meetings. Regarding the aggregation of value to Aroeira Honey, beekeepers have already noticed a change in the acceptability and valuation of the product, even before the official registration of the GI (Demier et al. 2020).

Figure 3 - GI - Norte de Minas



Source: SEBRAE, 2020.

Figure 4 - Area of Coverage of the Geographical Indication of Aroeira Honey



Source: Demier et al, 2020.

The territory was delimited by the Ordinance of the Minas Gerais Institute of Agriculture (IMA) No. 2018/2020, which identifies the Northern Region of Minas as a producer of Aroeira Honey, composed of the following municipalities: Arinos, Bocaiúva, Bonito de Minas, Brasilândia de Minas, Brasília de Minas, Buritizeiro, Capitão Enéas, Chapada Gaúcha, Campo Azul, Catuti, Claro dos Poções, Cônego Marinho, Coração de

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Jesus, Engenheiro Navarro, Espinosa, Formoso, Francisco Sá, Gameleiras, Glaucilândia, Guaraciama, Ibiaí, Ibiracatu, Icaraí de Minas, Itacarambi, Jaíba, Janaúba, Januária, Japonvar, Jequitaí, Juramento, Juvenília, Lagoa dos Patos, Lontra, Luislândia, Manga, Mamonas, Matias Cardoso, Mato Verde, Mirabela, Miravânia, Montalvânia, Monte Azul, Montes Claros, Nova Porteirinha, Pai Pedro, Patis, Pedras de Maria da Cruz, Pintópolis, Ponto Chique, Porteirinha, Riachinho, Riacho dos Machados, Santa Fé de Minas, São Francisco, São João da Lagoa, São João da Ponte, São João das Missões, São João do Pacuí, São Romão, Serranópolis de Minas, Ubaí, Urucuia, Varzelândia and Verdelândia.

Table 1 - Comparison between Geographical Indications

GEOGRAPHICAL INDICATION	NORTH OF MINAS	ORTIGUEIRA
GI Mode	Designation of Origin (DO).	Indication of Origin (IP).
Product	Bee honey Apis *mellifera* l. produced from the mastic tree M*yracrodruon urundeuva allemão and honeydew*.	Bee honey.
History	It began in 1980, and has become a very important activity, both for the residents and for the economy of the municipality.	Before the 1960s it was produced only for consumption, in 1970 it began to be commercialized, from 1980 it became a profitable business, and in 1984 they founded the Association of Ortigueirenses Honey Producers (APOMEL).
Territory	It is established within an area of 60 municipalities.	Municipality of Ortigueira.
Flowering	Unique flora: Myracrodruon urundeuva, also known as Aroeira-do-sertão.	Varied Flora: Capixingui, eucalyptus, assa-peixe, canelas, maria-mole, gurucaia, mastic, vassourinha, gabiroba and angico.
Product Description	The honey produced by the Geographical Indication is mastic honey, which is called this way due to the fact that bees use the resources of the *Myracrodruon* urundeuva plant, also known as Aroeira-do-sertão, to produce their honey. This honey, unlike wild honey, has a much darker color, which previously hindered its sales, and has phenolic compounds with antioxidant, anti-inflammatory and antimicrobial action, which strengthen the immune system.	Honey is a sweet, viscous liquid made up of carbohydrates, amino acids, enzymes, and various other compounds in small amounts. It is the only food that contains substances from bees and nectar from flowers. Monofloral honey is made from the nectar of the main blooms. According to beekeepers, the most important for the production of honey are: capixingui, eucalyptus, assa-peixe, canelas, maria-mole, gurucaia, aroeira, vassourinha, gabiroba and angico. Wild honey, or polyfloral, is the mixture of various nectars, formed by the other melliferous species of the Ortigueira region.
Applicant	Northern Minas Gerais Beekeeping Development Council.	Association of Ortigueirenses Honey Producers (Apomel).
Date of registration	01/02/2022	01/09/2015

Source: SEBRAE, 2018 and 2022 (adapted by the authors).

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Table 1 makes a comparison between the two GIs, with regard to their modality, Product, history, applicant territory and date of registration, among the differences, the fact that the two have different modalities stands out, where Norte de Minas was classified as a Denomination of Origin (DO), and Ortigueira as an Indication of Origin (IP).

The specific product is bee honey, but each one with its characteristic that comes from the flowering of plants and trees specific to each region, both honey production began and became extremely important from the 1980s, both for residents and for the municipal economy, the great difference in territorial coverage is also highlighted, the characteristic and composition of each honey is very different, as honey from the North of Minas has a darker color, which hinders its sales, on the other hand, its composition has phenolics with antioxidant, anti-inflammatory and antimicrobial action, which strengthens the immune system. Ortigueira Honey has a viscous appearance, made up of carbohydrates, amino acids, enzymes and various other compounds in small amounts.

Another difference is between the flowers, while the North of Minas is from a single flora, the mastic tree, the IG Ortigueira comes from several natural floras to the region.

CONCLUSION

The differences between the GIs are observed, starting with their territory, the GI of Ortigueira its area is delimited only by the municipality of Ortigueira, unlike the GI of the North of Minas that its delimitation is greater taking an area that covers 60 municipalities.

An item that has obtained a GI brings with it benefits to the region and to the originators of the products, because from this GI high added value is incorporated into the product and quality assurance in production, as analysis work was carried out to identify the best way to execute production so that the maximum potential that product can offer is delivered, differentiating it from others in the same segment. In addition to the economic benefits, registration is a way to protect producers against false indications of origin, preventing a product that was not produced in the area covered by the GI and with an inferior quality from being marketed with the reference of the registration holder, without following the protocols developed by the regulatory council (CONCEIÇÃO; SILVA; ROCHA, 2022).

The absence of uniform criteria makes it difficult to make more detailed comparisons and identify common elements that could strengthen the strategic use of GIs in Brazil. The

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lack of a more robust technical alignment can also restrict the full use of the competitive advantages that GIs offer, especially in the international market.

As future perspectives, a study is suggested that explores ways to harmonize the technical specifications, without compromising regional identities. Research that evaluates the economic impact of GIs and consumer perceptions is needed to better understand how these certifications can be optimized. In addition, comparative case studies between Brazilian and international GIs can provide valuable *insights* for the improvement of registration and promotion strategies. Thus, the importance of GIs as essential tools for sustainable regional development and the preservation of cultural and natural heritage is reinforced.

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