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Syagrus Coronata (Licuri): An Overview Of National And International Patent Deposits Related To The Brazilian Native Plant

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Abstract:
Background*: Syagrus Coronata (Licuri) is a plant native to Brazil, used to make various pharmaceutical, food, cosmetic and artisanal products. In some regions of Brazil, where there is a significant amount of Licuris, it is a source of income, especially for farmers and artisans. Therefore, the objective of this study was to map, through patent documents, the products and/or processes that are being developed and protected in the patent banks of the National Institute of Industrial Property (INPI) and Espacenet. To achieve this objective, specific objectives were outlined, which were: Identify patent deposits related to "Syagrus Coronata" (Licuri) in Brazil and around the world, through the INPI and Espacenet databases; Describe the number of patent filings by International Classification Codes at INPI and Espacenet; Present the main inventors of the patents relating to "Syagrus Coronata" (Licuri); Highlight the main institutions that filed patents on "Syagrus Coronata".*
Materials and Methods*: The methodology is characterized as exploratory and descriptive, based on carrying out a technological mapping in the INPI and Espacenet databases.*
Results*: The results showed that, although Licuri is a plant used to manufacture products, there are still not many products or processes that are being patented. Furthermore, the majority of products are for use in cosmetics or pharmaceutical products, and few for food products, including none for artisanal purposes.*
Conclusion: *However, it is noted that, in both databases, the inventors are Brazilian and the depositors are higher education institutions, cooperatives, private companies and independent inventors.*
Key Word*: Syagrus Coronata; intellectual property; patents.*

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I. Introduction

Syagrus Coronata is a species of plant known as Ouricuri, Licuri, Adicuri, among other names. It is a dominant species in the dry and arid regions of the Caatinga, found in the north of Minas Gerais, occupying the eastern and central portion of Bahia and extending to the south of Pernambuco, and, finally, covering the States of Alagoas and Sergipe. This plant is relevant in the regions where they are located due to its food, cosmetic, pharmaceutical and artisanal potential. Given this, it is clear that it has a high socioeconomic importance, especially in traditional communities in the backlands of Brazil [1].

All parts of Licuri are usable, as its almond is used for different types of preparations, such as: ice cream, liqueur, beer, bread, sweets, granola and cookies [2] [3]. Even its bark and straw are used to produce handicrafts and fuel for wood-burning ovens to make tiles [4]. Another part used is Ouricuri oil, which is used to prepare food and produce soap [5]. Ouricuri oil also serves as a raw material in the production of aviation fuel [6].

Given this scenario, technological prospecting serves to map the technological development of a product or process, serving as a tool for analyzing the development of an innovation, which helps guide studies, as well as avoiding wasting time in carrying out research. in products and/or services that are already on the market and that constitute something that already exists [7].

Thus, technological prospecting makes it possible to detail innovations in the area, with the aim of ensuring consumer safety and compliance with legal and regulatory standards. Therefore, prospecting is a means that helps not only the decision-making process, but also to identify technologies that are being created. To this end, patent filing requests and granted patents are analyzed.

Given this context, this article aims to map, through patent documents, the products and/or processes that are being developed and protected through patent banks of the National Institute of Industrial Property (INPI) and Espacenet. To this end, the following specific objectives were outlined: Identify patent deposits related to "*Syagrus Coronata*" (Licuri) in Brazil and around the world, through the INPI and Espacenet databases; Describe the number of patent filings by International Classification Codes at INPI and Espacenet; Present the main inventors of the patents relating to "*Syagrus Coronata"* (Licuri); Highlight the main institutions that filed patents on "*Syagrus Coronata".*

This article was divided into sections, with the introduction providing a general summary of what *Syagrus Coronata* is and the concepts of prospecting. The reference has subdivisions: *Syagrus Coronata* (Licuri); Patents; International Classification of Patents and Technological Prospecting. The methodology clarifies the research step by step, highlighting all the procedures used for prospecting in the two databases. The results are presented through graphs, tables and charts, while the conclusion brings the article to a close, meeting the general and specific objectives.

II. Theoretical Foundation

***Syagrus Coronata* (Licuri)**

Licuri is a palm tree native to the Northeastern Semiarid region, considered resistant because it can withstand long droughts, in addition to showing good development even in climatic circumstances that are not so favorable. It is clear that there is a wide variety of products that can be extracted from this palm tree, such as handicrafts, medicines, sweets and cosmetics [8].

Licuri is an ovoid fruit, yellow and orange in color. It is edible and can be consumed fresh or even cooked, as there are several sweets produced. The *Syagrus Coronata* palm tree has several names and this variation occurs as a result of the locations in which it is located. The names vary in: coconut, licuri, nicuri, alicuri, ouricuri, aricuri, uricuri, urucuri, butiá, baba-de-boi, coco-cabeçudo, coconut-aracuri, coconut-cabeçudo, coconut-dicori, dicuri, iricuri, uricuriba , adicuri. Of the different names by which the species is known, licuri is the most used name in the backlands of Bahia [9].

The palm tree is also known as the "life-saving tree". The licuri is considered one of the main palm trees native to the Brazilian semi-arid region and is relevant in cultural, environmental and socioeconomic aspects, for the subsistence of Brazilian country people [10].

Patent

A patent is a temporary title of exclusivity, which is granted by the State so that a new technology can be explored, with the holder being responsible for granting and making available the technological information of the invention, allowing access to knowledge and at the same time avoiding the secrecy of the technology [11]. The patent allows the holder to protect their invention and prevents misuse by third parties [12].

Patents come in two forms, invention patents and utility models. The Invention Patent (IP) concerns new and original products or processes, which have a maximum validity period of 20 years from the date of filing the patent application. The Utility Model Patent (MU) refers to the improvement in pre-existing products, in which their use is improved, with a maximum validity period of 15 years, counting from the date of filing of the patent application [13].

The granting of a patent allows the holder to make information available, which in turn, is necessary to obtain the technology, which is the object of protection. Therefore, the patent concerns the disclosure of inventions and can be kept secret [14]. According to Jungmann and [15], a patent is an instrument, whose protection is granted by the State, which grants the holder the right of exclusivity, allowing a return on investment and applicability to the new product.

An invention must meet certain requirements to be patented, such as: novelty, inventive activity and industrial application. The novelty matches the invention, which must be beyond the state of the art, that is, it must not be known or disclosed. In inventive activity, the invention must not be obvious to a person skilled in the art. In terms of industrial application, the invention needs to be a product for consumer use [13]. Furtherme [12] highlights that patent registration protects the inventor, due to existing monopolies in the market, and contributes to the country's technological development. The holder has the right to prohibit third parties from improperly using his invention.

International Patent Classification

The International Patent Classification (CIP) aims to standardize and systematize invention patent documents, becoming an effective way of verifying documents by users of the patent protection system [16].

This method of international use occurs so that there is a uniform classification of patent documents, which provides for the introduction of new technologies, through the improvement of existing classifications [17]. In 1971, in Strasbourg, an agreement was reached that established, for member countries, the International Patent Classification System (CIP) by branch of technique. This agreement, in turn, was adopted by developed and developing countries [18].

According to the National Institute of Industrial Property [19], published patent applications are classified according to the technological area to which they belong. INPI uses the International Patent Classification (IPC), and since 2014, the Cooperative Patent Classification (CPC) to classify applications.

Frame 1: International Patent Classification – CIP

Sections	Section Meanings
A	Human Needs
B	Processing Operations; Transport
C	Chemical; Metallurgy
D	Textiles; Paper
E	Fixed Constructions
F	Mechanical Engineering; Lighting; Heating; Weapons; Explosion
G	Physical
H	Electricity

Source: Based on data collected from the INPI database (2024)

Frame 1 emphasizes the classifications that allow access to the technological areas of patents, which makes their use essential, as a technology can be a product or process, as well as having more than one classification in a deposit. These classifications are divided into sections, classes, subclasses, groups and subgroups. It is worth mentioning that the complete CIP symbol matches the combination of these symbols [16].

Technological Prospecting

Technological prospecting involves investigations characterized by technological changes, which integrates information into the technological management process and assists in future technology decisions [11]. It is important to highlight that it is associated with social and economic prospecting, considering that it is necessary to verify the costs of technology, human resources and infrastructure [20].

For Souza et al. [21] prospecting concerns a process that debates, shapes and thinks about the future, in search of trends, in a participatory process, seeking to assist in the decision-making process and desirable futures. [14] clarifies that there are types of approaches to prospecting the future, these being inferences, the systematic generation of alternative trajectories and consensus.

Prospecting is used to guide the allocation of resources, identify market opportunities and threats, as well as assist in the evaluation of new products and processes, in addition to developing administrative plans [22].Therefore, Teixeira [23] states that prospecting is one of the tools that helps in the analysis of technologies, as it identifies and systematizes the trends of certain technologies in the market.

III. Material And Methods

The research is characterized as an exploratory and descriptive study. According to [24], exploratory research refers to investigation, which is carried out so that the area in question must have accumulated and systematized knowledge. While [25] clarifies that the descriptive study contributes to the development of analysis and allows the identification of different phenomena, their classification and ordering.

Regarding the research questions, this study presented some questions to be answered, namely: a) How many patent filings exist on *Syagrus Coronata* (Licuri) in Brazil and in the world? b) What are the International Patent Classifications found in patent deposits related to *Syagrus Coronata* (Licuri)? c) What are the main institutions that deposit patents on *Syagrus Coronata* (Licuri)? d) Who are the main inventors of the patents related to *Syagrus Coronata* (Licuri)?

Regarding the research design and procedures, the method used in this study was document analysis. Documentary research initially took place through the database of the National Institute of Industrial Property (INPI) and Espacenet. For [26], documentary research corresponds to data collection that is restricted to documents, written or not, constituting the primary sources of research.

The choice of the two databases is because INPI is the body of the Ministry of Development, Industry, Commerce and Services that registers brands, patents, industrial designs, geographical indications and technology contracts [19]. Espacenet is accessible to beginners and experts and is updated daily. Contains data on more than 150 million patent documents from around the world [27].

For the analysis and selection criteria in the databases, patent deposit search strategies were used, using keywords. In both bases, the advanced search option was used, and the keywords were retrieved in the document summary, considering that the largest number of patent deposits appears, in addition to highlighting all products and processes related to Ouricuri in the bases selected data.

From the search for keywords at INPI, it was decided to use the keywords "*Syagrus Coronata*", since when using only the word craftsmanship, several deposits appeared, which, after analysis, none were related to Ouricuri. Then, the junctions of crafts and Ouricuri showed that there were no deposits related to this junction, and by searching and filtering different ways, it can be understood that the scientific name of the palm tree brought better results about Ouricuri in Brazil.

In the Espacenet database, using the word craftsmanship, as well as in INPI, several results appeared, but none are related to Ouricuri. Next, when using filters and several keywords, we chose "Licuri", which is also one of the names given to the Ouricuri palm tree. Thus, it was possible to find deposits related to the topic.

Data collection in the patent database of the Brazilian INPI database was carried out on 01/11/2023, and continued until January 2024. In the Espacenet database, collection took place from 13/11 /2023 and continued until 11/02/2024. This study also used secondary sources, in which its sources of evidence include bibliographic and documentary data; and statistical data, through prospecting, in data collection from INPI and Espacenet.

The variables of this research consist of: a) Number of patent filing requests: these are patent filings related to *"Syagrus Coronata*" (Licuri). b) International patent classification: these are the classifications that allow understanding and verifying which of the technological areas the technology being analyzed belongs to; c) Inventors: these are the people who created the technology, which can be a product or process, and the inventor can also be considered a depositor of the technology; d) Profile of depositors: these are the institutions, companies or person(s) that deposited the new technology. Through research, it is necessary to know the analytical categories and analysis elements, as shown in Frame 2, which presents the specific objectives, analysis categories and analysis elements.

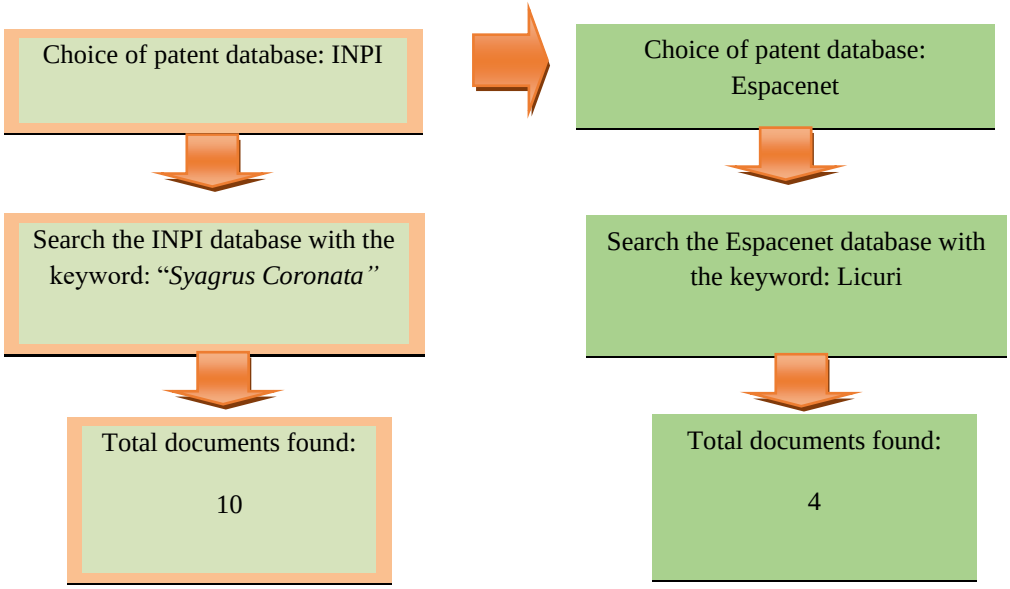
Frame 2: Analytical categories and analysis elements

Specific objectives	Analysis Categories	Analysis Elements
Identify patent deposits related to "*Syagrus Coronata*" (Licuri) in Brazil and around the world, through the INPI and Espacenet databases	Patent filings	Number of patent deposits
Describe the number of patent filings by International Classification Codes at INPI and Espacenet	International Classification Codes	Number of patent filings by international classification code at INPI and Espacenet
Present the main inventors of the patents relating to "*Syagrus Coronata*" (Licuri)	Inventors	Main Inventors
Highlight the main patent filing institutions	Depositing institutions	Main depositing institutions

Source: Prepared by the authors (2024)

In the data analysis stage, patent deposits related to "*Syagrus Coronata*" (Licuri) were searched, where the search began at INPI and then at Espacenet. After executing the strategies using keywords, the data was extracted and, using Microsoft Excel, an annual evolution graph and tables were created for a better understanding of the prospecting. The analysis of the patent deposits found was carried out through the description of the deposit, the application number, the annual evolution (with the year of filing), the International Patent Classification, the main inventors and applicants.

Figure 1: Patent Deposit Search Flowchart



Source: Prepared by the authors (2024)

Figure 1 specifies the steps used to collect data from the selected databases. In the INPI database, ten (10) patent deposits were found, using the keywords "Syagrus Coronata" in the abstract in the advanced search option. In the Espacenet database, only four (04) patent filings were found, using the word "Licuri" in the abstract in the advanced search option.

IV. Result

This section presents the results found, through research carried out in the National Institute of Industrial Property (INPI) and Espacenet databases, highlighting the technologies related to *Syagrus Coronata* (Ouricuri), which were deposited in these databases. Thus, the results present a discussion on the annual evolution of deposits, the international classification of patents, inventors and the profile of depositors.

National Institute of Industrial Property (INPI)

Initially, 16 patent applications were analyzed, and when analyzing all of them, it was noted that six of these did not refer to *"Syagrus Coronata*", only to "Syagrus", referring to other species of palm trees, different from the palm tree that matches the type of craft studied. Therefore, the research sample on deposits found at INPI was only ten (10).

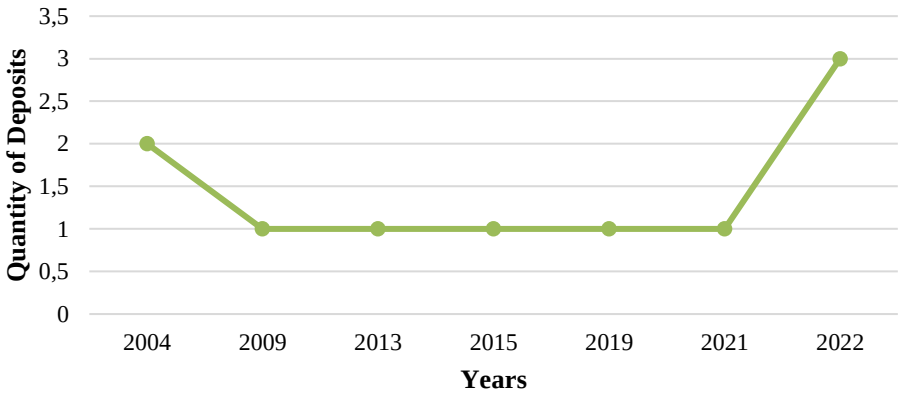
Frame 3: Description of the Patent Filing

Description of the Patent Filing	Request number
Nanoemulsion based on licuri oil and its applications	BR 10 2022 008503 0 A2
Composition based on licuri oil (*Syagrus Coronata*) for the treatment of pain, inflammation and fever	BR 10 2022 003837 6 A2
Composition based on licuri oil (*Syagrus Coronata*) for the treatment of wounds	BR 10 2022 003827 9 A2
Composition of white, milk or dark chocolate, containing *Syagrus Coronata* (licuri)	BR 10 2021 004384 9 A2
Formulation of licuri beer (*Syagrus Coronata*) and production process	BR 10 2019 022306 5 A2
Process of producing mycelium, ligninolytic enzymes and medicinal basidioma by solid state fermentation	BR 10 2015 014111 4 A2
Pharmaceutical composition, method of promoting skin permeability of drugs, cosmeceutical composition and method of promoting skin hydration	BR 10 2013 031058 1 A2
Process and devices for manufacturing briquettes from charcoal fines with binder based on palm fruit extract of the *Syagrus Coronata* species	PI 0903475-7 A2
Aqueous polymeric compound of vegetable latex associated with vegetable fibers and production process	PI 0405902-6 A2
Use of Ouricuri oil (*Syagrus Coronata*) for patients undergoing treatment with chemotherapy drugs	PI 0402893-7 A2

Source: Prepared by the authors, using data from INPI (2024)

Frame 3 highlights the descriptions of patent filings relating to *Syagrus Coronata*, from 2004 to 2022, as well as the patent filing application numbers. It was also found that all deposits were from Brazilians.

Figure 2: Annual evolution of patent filings at INPI (2004 -2022)



Source: Prepared by the authors, using data from INPI (2024)

Figure 2 highlights the annual evolution of patent deposits at INPI regarding *Syagrus Coronata*, and shows that of the ten (10) deposits presented, only seven (07) years were deposits, which were in the years 2004, 2009, 2013, 2015 , 2019, 2021 and 2022. Only in the years 2004 and 2022, the number of deposits was greater than one (01), whereas in 2004 there were two (02) deposits. However, this number only increased in 2022, with three (03) deposits. The year 2023 did not present any deposits and this can be explained by the fact that there is an 18-month secrecy period.

Table 1: Number of patent filings by international classification code at INPI

Code	Classification	Amount
A23G 1/48	Containing plants or parts thereof, e.g. ex. fruits, seeds, extracts (containing gums)	2
A61K 131/00	Containing or obtained from seeds, nuts, fruits or grains	2
A61K 36/889	Arecaceae, Palmae or Palmaceae (palm family), e.g. ex. date palm or coconut tree or fan palm	2
A01G 18/20	Culture media, e.g. ex. compound	1
A47J 19/02	Citrus fruit juicers; other devices for extracting fruit juices	1
A61K 35/06	Mineral oils, e.g. ex. paraffinic oils or aromatic oils based on aromatic hydrocarbons	1
A61K 47/44	Oils, fats or waxes according to two or more groups of A61K 47/02-A61K 47/42; Natural or modified natural oils, fats or waxes, e.g. ex. castor oil, polyethoxylated castor oil, lignite wax, lignite, shellac, rosin, beeswax or lanolin (synthetic glycerides)	1
A61K 8/92	Oils, fats or waxes; its derivatives, e.g. ex. hydrogenated products	1
A61K 8/97	Derived from algae, lichens, fungi or plants; derivatives of the same	1
A61K 9/107	Emulsions	1
A61K 9/113	Multiple emulsions, e.g. ex. oil-in-water-in-oil	1
A61P 1/04	For ulcers, gastritis or reflux esophagitis, e.g. ex. antacids, acid secretion inhibitors, mucosal protectors	1
A61P 17/02	For the treatment of wounds, ulcers, burns, scars, keloids or similar	1
A61P 17/16	Emollients and protectors, for. ex. against radiation	1
A61P 29/00	Non-central analgesic, antipyretic or anti-inflammatory agents, e.g. ex. antirheumatic agents; Nonsteroidal anti-inflammatory drugs	1
B30B 11/00	Presses specially adapted to form molded objects from materials in a particular state or plastic, e.g. ex. briquette presses or tablet presses	1
C08K 7/02	Fibers or bristles	1
C08L 7/02	Latex	1
C10L 5/14	With organic binders	1
C10L 5/44	In substance of plant origin	1
C11B 9/00	Essencial oils; Perfumes	1
C12C 12/00	Processes specially adapted for the production of special types of beer	1
C12C 5/02	Additives for beer	1

Source: Prepared by the authors, using data from INPI (2024)

Table 1 depicts the INPI International Classification Code, highlighting that the classification A23G 1/48, A61K 131/00, A61K 36/889 appear more than once in the research. These classifications are those with the following descriptions: Containing plants or parts thereof, e.g. ex. fruits, seeds, extracts (containing gums);

containing or obtained from seeds, nuts, fruits or grains; Arecaceae, Palmae or Palmaceae (palm family), e.g. ex. date palm or coconut tree or fan palm. It is worth mentioning that most of the classifications found in this research deal with section A - human needs. Next, section C stands out, which deals with Chemistry and Metallurgy, and section B, Processing Operations, transportation. Of the ten (10) patent filings, twenty-three (23) classifications appear, of which fifteen (15) are in section A, one (01) in section B, and seven (07) in section C.

Januzzi et al. (2005) highlights that this classification aims to standardize invention patent documents, which is intended to serve as a tool to search and retrieve these documents by users of the patent protection system.

Table 2: Main Inventors

Main Inventors	Amount
Marcia Vanusa da Silva	2
Maria Tereza dos Santos Correia	2
Weslley Felix de Oliveira	2
João Victor de Oliveira Alves	2
Bruno Oliveira de Veras	2

Source: Prepared by the authors, using data from INPI (2024)

Table 2 emphasizes the main inventors regarding technologies related to *Syagrus Coronata*, which highlights that the five main inventors have two (02) patent deposits at INPI. It is worth noting that, of the deposits analyzed, a total of sixty-one (61) inventors were found, with fifty-one (51) of these having only one (01) deposit, however some patent deposits have several inventors.

Table 3: Main Depositors

Depositors	Amount
Federal University of Pernambuco	3
Production Cooperative of the Piemonte da Diamantina Region (Coopes)	2
Federal University of Rio Grande do Norte	1
Federal University of Minas Gerais	1
State University of Feira de Santana	1
Biodiversity Protection and Sustainable Use of Natural Resources Hub	1
Federal Institute of Education, Science and Technology Baiano	1
Brazilian Support Service for Micro and Small Businesses	1
Family members and extractivists from the Popular and Solidarity Economy (Coopersabor)	1
Regional Farmers Cooperative	1
Carlos Henrique de Moraes	1

Source: Prepared by the authors, using data from INPI (2024)

Table 3 highlights the institutions that deposit patents, which are divided into universities, cooperatives, institutes and even independent inventors. The Federal University of Pernambuco presents three (03) patent deposits and the Production Cooperative of the Piemonte da Diamantina Region (Coopes) presents two (02) patent deposits. The other depositing institutions presented only one (01) deposit.

The creation of the Federal University of Pernambuco was on August 11, 1946, the founding date of the University of Recife (UR), being considered one of the best universities in Brazil, in teaching (undergraduate and postgraduate) and research [28].

The Production Cooperative of the Piemonte da Diamantina Region (COOPES) was founded on May 2, 2005, by producers in the region. Family Farming producers came together to defend their economic and social interests to free themselves from intermediary trade. The goal is to improve the quality of your products, dissemination and insertion into the market. The products sold by the Cooperative are food, handicrafts, manual labor, clothing, equipment, inputs and feed [29].

Espacenet

18 patent filings related to "Licuri" were analyzed on Espacenet, however, not all of them are related to this species of palm tree, that is, some processes on other topics appeared. When refining the data, only four (04) refer to the research, which resulted in the sample for analysis.

Table 4: Description of the Patent Filing

Patent Description	Request number	Year of deposit
Cosmetic composition comprises licuri oil, use of said composition and cosmetic method	BR102017028213A2	2017
Preserved licuri almonds	BRPI0605477A	2006
Coated licuri almonds	BRPI0605123A	2006
Aqueous polymeric compound of vegetable latex associated with vegetable fibers and delivery process	BRPI0405902A	2004

Source: Prepared by the authors, using data from Espacenet (2024)

Table 4 depicts the descriptions of patent filings relating to Licuri, from 2004 to 2017, as well as the patent filing application number. Only four (04) deposits were found on Espacenet related to Licuri, and of these, the year with the most deposits was 2006, with two (02) deposits. The years 2004 and 2017 presented only one (01) filing, and in the following years no patent filings were found relating to Licuri.

Table 5: Inventors

Inventors	Amount
Djane Santiago de Jesus	2
Luiz Bruno Oliveira	1
Simone Rochtaschel Foss	1
Larissa da Silva Spehar	1
Francisco Samonek	1

Source: Prepared by the authors, using data from Espacenet (2024)

Table 5 highlights the inventors who have their patent deposits on Espacenet about Licuri. The presence of only five (05) authors was verified and among them the inventor Djane Santiago de Jesus stands out, with two (02) patent deposits on Licuri.

Djane Santiago de Jesus was the first black doctor in Chemistry in Bahia, and was even referenced in a Master's thesis of the Postgraduate Program in Teaching, Philosophy and History of Sciences, Federal University of Bahia/ State University of Feira de Santana. She has a degree and Bachelor's degree in Chemistry from the Federal University of Bahia, Master's and PhD in Chemistry from the Federal University of Bahia. She is a professor at the Federal Institute of Education, Science and Technology of Bahia, and is the General Coordinator of the Social Technologies Project for the Licuri Production Chain in the semi-arid region of Bahia (Information collected in Lattes on 11/12/2023).

Table 6: Number of patent filings by international classification code on Espacenet

Code	Classification	Amount
C08J26/03	From latex	1
A61K8/92	Oils, fats or waxes; its results, e.g. ex. hydrogenated products	1
A61Q19/00	Skin treatment preparations	1
A23L19/20	By preserving in brine or vinegar, for. ex. sauerkraut and pickles	1
A23G3/00	Candy; Confectionery; Marzipan; Coated or stuffed products	1
A23G3/48	Containing plants or parts thereof, e.g. ex. fruits, seeds, extracts	1
A23L25/00	Foods consisting mainly of nuts or seeds; its preparation or treatment	1
C08K7/02	Fibers or bristles	1
C08L7/02	Latex	1

Source: Prepared by the authors, using data from Espacenet (2024)

Table 6 presents the International Classification Code in Espacenet, highlighting the classifications, which appear only one (01) time. The four (04) patent filings have nine (09) classifications, which are inserted in section A and C. In section A, they appear six (06) times and concern human needs, while Section C, with three (03) classifications, refers to the area of Chemistry and Metallurgy.

Table 7: Depositors

Depositors	Amount
Djane Santiago de Jesus	2
L'Occitane do Brasil SA	1
Francisco Samonek	1

Fonte: Elaborado pelos autores, por meio de dados do *Espacenet* (2024)

Table 7 shows the depositors of technologies, on Espacenet, related to Licuri. There are only three (03) depositors, and the one with the largest number is Djane Santiago de Jesus, with two (02) patent deposits. Subsequently, the company L'Occitane do Brasil SA and Francisco Samonek only have one (01) patent deposit.

L'Occitane do Brasil is the French company that redeems cosmetics brands. It recently achieved recognition as a B/B Corp Company, an important certification that reaffirms and strengthens the social and environmental commitments of companies from various sectors. As a B Corp in the beauty industry, the brand is leading a global movement for an inclusive, equitable and regenerative economy. It was the conglomerate's first Franco-Brazilian brand, which was created with the mission of celebrating and respecting the nature, culture and people of Brazil, to contribute to society and conserve the national biomes and coast. It works closely with small farmers and creates development opportunities for smaller groups, helping financially and technologically [30].

Francisco Samonek has a Master's degree in Ecology and Natural Resource Management from the Federal University of Acre, a PhD in Projects from the International Iberoamerican University - UNINI México, and is a retired Professor from the Department of Education of the State of Acre. He has experience in managing socio-environmental projects and managing non-timber forest resources, with an emphasis on research and extension in the natural rubber production chain and sustainable technologies in the Amazon. Its areas of activity cover the following themes: Socio-productive Inclusion, Amazon, Organic Sustainable Extractivism, Native rubber, entrepreneurship and technological innovation, Social Technology (Information collected from Lattes on 01/06/2022).

V. Conclusion

Syagrus Coronata is predominant in the Brazilian northeast, which has proven to be of great socioeconomic importance for the region. It was noted that there is a wide variety of products that can be extracted from this palm tree, such as: handicrafts, food, medicines and cosmetics. Based on the results, it was noticed that the study presented limitations in the two databases used, as there are few patent deposits to collect information. It was found that the years with the most deposits were 2006 and 2022, the International Patent Classification section that appears most often is section A, and the main depositors of these patents were the Federal University of Pernambuco and the Doctor in Chemistry Djane Santiago Of Jesus.

Although there are several scientific productions about Licuri, there are few patent deposits filed by Brazilians, since it is a palm tree native to the region, and the deposits that exist are aimed at cosmetics, pharmaceutical and food products, however, there is no mention of products handcrafted.

However, technological prospecting made it possible to achieve the research objectives, in addition to clarifying some gaps, such as the lack of good management so that Licurizeiros do not become extinct in a few years. However, it is essential that in addition to the Federal University of Pernambuco, other public and private universities and companies invest in research into this palm tree, which has several benefits, considering that all of its parts can be used.

It is concluded that, in addition to the development of research, it is necessary to publish and deposit it in databases such as INPI to allow access to knowledge and at the same time protection against misuse by third parties. Therefore, it is important that universities, companies and inventors work together so that everyone benefits, including people who are in the region where this palm tree exists, from the perspective of contributing to the source of income. Thus, with the protection of Licuri it is possible to provide benefits to society in different ways.

References

[1]. Crepaldi, I. C. Et Al. Nutritional Composition Of The Licuri Fruit (Syagrus Coronata (Martius) Beccari). Brazilian Journal Of Botany, São Paulo, V. 24, No. 2, P. 155-159, 2001.

[2]. Slow Food Brazil. Everything Can Be Used From The Licuri. 2016. Available At: Https://Www.Slowfoodbrasil.Com/Textos/Noticias-Slow-Food/1030-Do-Licuri-Tudo-Se-Aproveita. Accessed On: 20 Jan. 2024.

[3]. Gomes, M. De J.; Aplevicz, K. S. Development And Sensory Analysis Of Breads Made With Licuri Flour (Syagrus Coronata (Martius) Beccari). Journal Of Culinary Science & Technology, London, P. 1-12, July 2020.Doi10.1080/15428052.2020.1799279. Available At: Https://Doi-Org.Ez357.Periodicos.Capes.Gov.Br/10.1080/15428052.2020.1799279. Accessed On: 20 Jan. 2024.
[4]. Fapesb – Research Support Foundation Of The State Of Bahia. Innovative Ideas Competition Awards 21 More Researchers In Bahia. 2016. Available At: Http://Www.Secom.Ba.Gov.Br/2016/04/131807/Concurso-Ideias-Inovadores-Premia-Mais-24-Pesquisadores-Na-Bahia.Html. Accessed On: 01 Jan. 2024.
[5]. Lisbon, M. W.; Wiltshire, F. M. S., Fricks, A. T.; Dariva, C., Frédéric Carrière, F.; Lima, A. S.; Et Al.Oleochemistry Potential From Brazil Northeastern Exotic Plants. Biochimie, Elsevier, V. 178, P. 96-104, 2020. Doi 10.1016/J.Biochi.2020.09.002. Available At: Https://Www.Sciencedirect.Com/Science/Article/Pii/S030090842030208x. Accessed On: 02 Feb. 2024.
[6]. La Salles, K. T. Da S. De; Meneghetti, S. M. P.; La Salles, W. F. De; Meneghetti, M. R.; Santos, I. C. F. Dos; Silva, J. P. V. Da; Carvalho, S. H. V. De; Soletti, J. I. Characterization Of Syagrus Coronata (Mart.) Becc.Oil And Properties Of Methyl Esters For Use As Biodiesel. Industrial Crops And Products, Amsterdam, V. 3, N. 3, P. 518-521, 2010. Doi 10.1016/J.Indcrop.2010.06.026. Disponível Em: Https://Www.Sciencedirect.Com/Science/Article/Abs/Pii/S0926669010001767?Via%3dihub. Acesso Em: 01 Jan. 2024.
[7]. Paranhos, R. C. S.; Ribeiro, N. M. Importance Of Technological Prospecting Based On Patents And Its Search Objectives. Prospection Notebooks, Salvador, V. 11, No. 5, P. 1,274, 2018.
[8]. Silva, K. F.; Lima, A. F.; Silva, M. S. Potential For Geographical Indication Of Licuri From The Semi-Arid Region Of Bahia From The Perspective Of The Virtuous Circle Of Quality. Brazilian Journal Of Regional Management And Development. V. 18, No. 1, P. 391-405, Jan-Apr/2022.
[9]. Rocha, K. M. R. Da. Reproductive Biology Of The Licuri Palm (Syagrus Coronata) (Mart.) Becc.) (Arecaceae) In The Raso Da Catarina Ecoregion, Bahia. Recife, Pernambuco, May 2009. Thesis (Master's In Forestry Sciences). Rural Federal University Of Pernambuco. 100p, 2009.
[10]. Guimarães, J. S.; Shiosaki. R.K.; Mendes, M. L. M. Licuri (Syagrus Coronata): Characteristics, Importance, Potential And Perspectives Of The Small Coconut From Brazil. Development And Environment – Dma. Vol. 58, P. 169-192, Jul./Dec. 2021.
[11]. Amparo, K. K. S.; Ribeiro, M. C. O.; Guarieiro, L. L. N. Case Study Using Technological Prospecting Mapping As The Main Scientific Search Tool. Perspectives On Information Science, V.17, N.4, P.195-209, Oct. /Ten. 2012.
[12]. Speziali, M. G.; Fernandes, I. C.; Murase, M. S. W.; Albrigo, B.V.; Gonçalves, C. O.; Almeida, G. M. D.; Silveira, R. P. Intellectual Property Primer. 2016. Available At: <Https://Is.Gd/Zpgdnw>. Accessed On: 02 Jan. 2024.
[13]. Jungmann, Diana De Mello; Bonetti, Esther Aquemi. On The Path To Innovation: Protection And Business With Intellectual Property Assets: A Guide For The Entrepreneur. Brasília: Iel, 2010.
[14]. Mayerhoff, Z. D. V. L. An Analysis Of Technological Prospecting Studies. Prospecting Notebooks, V. 1, No. 1, P. 7 – 9, 2008.
[15]. Inpi - National Institute Of Industrial Property. National Institute Of Industrial Property, 2017. Available At: < Https://Www.Gov.Br/Inpi/Pt-Br>. Accessed On: 06 Jan. 2024.
[16]. Jannuzzi, Anna Haydée Lanzillotti; Amorim, Rita De Cássia Rocha; Souza, Cristina Gomes De. Implications Of Categorization And Indexing In The Retrieval Of Technological Information Contained In Patent Documents. Information Science [Online], V.36, N.2, P. 27-34, 2007.
[17]. Garcia, Márcia Et Al. (Org.). Health Policies And Management. Rio De Janeiro: School Of Government In Health, 2004.
[18]. Macedo, M. F. G.; Barbosa, A. L. F. Patents, Research & Development: An Intellectual Property Manual [Online]. Rio De Janeiro: Editora Fiocruz, 2000. 164p.
[19]. Inpi - National Institute Of Industrial Property. Patent Classification. 2017. Available At: < Https://Is.Gd/4k1iyv >. Accessed On: 06 Jan. 2024.
[20]. Ferreira, M. L. A.; Mendes, H. S.; Souza, C. G.; Spritzer, I. M. P. A. Prospective Management From Patents In Developing Countries: Implications And Benefits. Work Presented At The Xxviii National Meeting Of Production Engineering, 2008.
[21]. Souza, M.; Tacla, I. C. W.; Kavinski, H.; Hinça, A.; Ruthes, S.; Scroch, K. Technological Prospecting: The Sectors That Hold The Future For Paraná. Work Presented At The Xxiv Symposium On Management And Technology Of Technological Innovation, 2006.
[22]. Coelho, G. M.; Coelho, D. M. S. Technological Prospecting: National And International Methodologies And Experiences. Ctpetro, 2013.
[23]. Teixeira, Luciene Pires. Technological Prospecting: Importance, Methods And Experiences Of Embrapa Cerrados. [S.L.: S.N.], 2013.
[24]. Vergara, Sylvia Constant. Projects And Research Reports In Administration. 8. Ed. São Paulo: Atlas, 2007.
[25]. Oliveira, Silvio Luiz De. Tratado De Metodologia Científica: Projetos De Pesquisas, Tgi, Tcc, Monografias, Dissertações E Teses. São Paulo: Pioneira Thomson Learning, 2002.