RCMOS - Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

Year V, v.1, n.1, Jan/July 2025. | submission: 03/05/2025 | accepted: 05/05/2025 | publication: 07/05/2025

Ethnopharmacological study of medicinal plants in the city of Soyo

Ethnopharmacological study of medicinal plants in the city of Soyo

Zassala Garcia1
Maria PA Isabel Dias2
Lando Emanuel Ludi Pedro3
Moniz Mawunu4

SUMMARY

The main objective of the study was to retrieve information from local populations related to the use of medicinal plants in Soyo City. The research was carried out between April to August 2024. A pre-structured questionnaire was used to collect data and direct observation in the field. In total, 272 informants were interviewed, of which 61.76% are women and 38.23% are men, aged between 19 and 67 years old, with the trade (47.05%) as the main source of income. Regarding the information ethnopharmacological, 40 plant species distributed in 40 genera were inventoried and 26 botanical families. The highlighted families are, Fabaceae (4 species), Anacardiaceae and Malvaceae with 3 species each, where the predominant vegetative forms were herbaceous (36.16%) and arboreal (32.10%), whose plant organs most used in the preparation of recipes are leaves (49.45%) and fruits (15.13%). Digestive system diseases (32%) and dermatological diseases (24%) were the most frequent in the study area. On the other hand, the informants from the study area They prepare medical prescriptions in different ways, including decoction (39.52%)

[1] Graduated in Agronomy from Kimpa Vita University, Angola. Professor and Head of the Teaching and Research Section of the Bachelor's Degree in Agricultural Engineering at the Nimi Ya Lukeni University Institute – Soyo. Email: zassalagarcia203@gmail.com.

[2] Graduated in Petroleum Engineering from the University of Belas, Angola. Professor and Head of the Department of Teaching and Research of the Bachelor's Degree in Agricultural Engineering at the Instituti Superior Universitário Nimi Ya Lukeni – Soyo. Email: mariadiasisabel4@gmail.com.

[3] PhD in Education, Specialist in Theory and Curricular Development from the University of Lisbon, Portugal. President of the Nimi Ya Lukeni Higher University Institute – Soyo. Email: Presidente@inspunyl.co.ao.

[4] Master in Molecular and Cellular Biology from the University of Kinshasa, Democratic Republic of Congo. Professor at Kimpa Vita University – Uíge. Email: m.mawunu2000@gmail.com.

and crushing (27.15%). As for the forms of administration of medical prescriptions, with greater predominance of oral route (56.25%) and crested route (13.97%).

Keywords: Ethnopharmacology, Medicinal plants, Soyo City

ABSTRACT

The main objective of the study was to retrieve the information from the local populations related to the use of medicinal plants in Soyo City. The survey was conducted between April and August 2024. For data collection, a pre-structured questionnaire and direct observation in the field was used. In total, 272 informants were interviewed, of which 61.76% are women and 38.23% are men, aged between 19 and 67 years, with commerce (47.05%) as the main source of income. Regarding ethnopharmacological information, 40 plant species were inventoried distributed in 40 genera and 26 botanical families. The highlighted families are Fabaceae (4 species), Anacardiaceae and Malvaceae with 3 species each, where the predominant vegetative forms were herbaceous (36.16%) and arboreal (32.10%), whose plant organs most used in the preparation of recipes are leaves (49.45%) and fruits (15.13%). Diseases of the digestive system (32%) and dermatological diseases (24%) were the most frequent in the study area. On the other hand, the informants in the study area prepare medical prescriptions in various ways, of which decoction (39.52%) and grinding (27.15%) stand out. Regarding the forms of administration of medical prescriptions, the oral route (56.25%) and cristeira (13.97%) were more predominant.

Keywords: Ethnopharmacology, Medicinal plants, Soyo City

1. INTRODUCTION

The use of plants for therapeutic purposes by humans may be as old as its history on planet earth. Archaeological remains indicate that ancient peoples and different civilizations such as Greeks, Hindus, Egyptians and also the ancient peoples of Americas used plants in their natural medicine systems to treat a variety of illnesses (Rocha *et al.,* 2015).

The traditional peoples of South America were knowledgeable about biodiversity and therapeutic properties of plants, and this knowledge was generally transmitted orally from generation to generation (Silva; Almeida, 2020).

Interest in medicinal plants has been gaining strength and the World Health Organization Health (WHO) has been working for some time on guidelines to encourage research and provision of herbal medicines to the population (Bôas; Gadelha, 2007).

Native peoples bring knowledge constructed empirically, as a way survival, and plants are used for different purposes such as food, housing and health care (Gaudêncio *et al.,* 2020). The traditional practice in the use of Medicinal plants have also been the object of interest of scientists and pharmaceutical industries (Dutra, *et al.,* 2016).

As the relationship with the land undergoes modernization and contact with centers urban areas intensifies, the network of transmission of knowledge about medicinal plants can undergo changes, making it urgently necessary to rescue this knowledge and the therapeutic techniques, as a way of recording this way of learning informal. Recovering this knowledge and its therapeutic techniques is a way of leaving registered an informal learning method that contributes to the appreciation of medicine popular, in addition to generating information about the health of the local community (Pilla *et al.,* 2006).

Medicinal plants represent a factor of great importance for the maintenance of people's health conditions. In addition to proving the therapeutic action of several plants popularly used, phytotherapy represents an important part of a people's culture, being also part of knowledge used and disseminated by populations over several generations (Tomazzoni & Negrelle, 2006).

Medicinal plants therefore play a very important role in medicine. modern. Firstly because they can provide extremely important drugs, which would hardly be obtained via chemical synthesis. Secondly, natural sources provide compounds that can be slightly modified, making them more effective or less toxic. Thirdly, natural products can be used as prototypes to obtain

RCMOS - Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

drugs with therapeutic activities similar to those of the original compounds (Turolla & Birth, 2006).

The use of medicinal plants has always been present in the history of humanity. The origins of this therapeutic practice date back to the beginnings of the human species. Historical records demonstrate that in ancient times, man already knew several properties of plants, among these, its medicinal properties stand out. Knowledge about the therapeutic value of plant species has been transmitted, over time, from generation to generation, forming, together with other practices, a medical system, known as traditional (Lima, 2014).

Traditional knowledge depends on the conservation of biodiversity, as socially plants contribute significantly to the satisfaction of many needs, Plants are used for food, to cure illnesses and to build various tools by man, since the most ancient times. The practice of healing through plants (Ethnobotany), led to the development of the pharmaceutical industry. Still, countries like Angola, traditional medicine is a very common practice, whose empirical knowledge is maintained in certain families (Heinze, 2017; Kone, 2004).

Medicinal plants represent a fact of great importance for the maintenance of people's health conditions. In addition to the proven therapeutic action of various plants popularly used, phytotherapy represents an important part of a people's culture, being also part of knowledge used and disseminated by populations over several generations; Medicinal plants have always had great importance in culture, in medicine feeding society in the world. Populations, through their curators and use cutaneous accumulate experience and vast knowledge about it. However, medications scientific developments of recent decades and their broad socialization have encouraged the monoculture of knowledge scientific in professional health practices, which largely discredit, since to primitive men to the present day on the one hand. On the other hand, the use of medicinal plants has been favored by the high cost of allopathic and homeopathic medicines, with minimal consequences when used properly. There are numerous plant species consecrated by popular use, although few have had medical or scientific. Medicinal plants include herbaceous, shrubby and tree species that

can be found growing spontaneously or cultivated, depending on the region (Tomazzoni *et al.,* 2016).

According to Vieira *et al.* (2016), medicinal plants are plant species, cultivated or no, used for therapeutic purposes. Popular knowledge of the use of plants medicinal influences everyday life, allowing the identification of certain medicinal plants for use as a medicine in the treatment of various diseases.

2 THEORETICAL FRAMEWORK

As the relationship with the land undergoes modernization and contact with centers urban areas intensifies, the network of transmission of knowledge about medicinal plants can undergo changes, making it urgently necessary to rescue this knowledge and the therapeutic techniques, as a way of recording this way of learning informal. Recovering this knowledge and its therapeutic techniques is a way of leaving registered an informal learning method that contributes to the appreciation of medicine popular, in addition to generating information about the health of the local community (Pilla, Amorozo & Furlan, 2006).

Medicinal plants represent a factor of great importance for the maintenance of people's health conditions. In addition to proving the therapeutic action of several plants popularly used, phytotherapy represents an important part of a people's culture, being also part of knowledge used and disseminated by populations over several generations (Tomazzoni & Negrelle, 2006).

Medicinal plants therefore play a very important role in medicine. modern. Firstly because they can provide extremely important drugs, which would hardly be obtained via chemical synthesis. Secondly, natural sources provide compounds that can be slightly modified, making them more effective or less toxic. Thirdly, natural products can be used as prototypes to obtain drugs with therapeutic activities similar to those of the original compounds (Turolla & Birth, 2006).

ROMEO - Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

The use of medicinal plants has always been present in the history of humanity. The origins of this therapeutic practice date back to the dawn of the human species. Historical records demonstrate that in ancient times, man already knew several properties of plants, among these, its medicinal properties stand out. Knowledge about the therapeutic value of plant species has been transmitted, over time, from generation to generation, forming, together with other practices, a medical system, known as traditional (Lima, 2014).

Knowledge about medicinal plants often symbolizes the only resource therapeutic of many communities and ethnic groups. Popular observations on the use and effectiveness of medicinal plants from around the world, keeps the practice of consuming them in vogue phytotherapeutics, making the therapeutic information that has been accumulated valid for centuries (Maciel *et* al., 2002, p. 429).

Medicinal plants are used in traditional communities to make home remedies and serve as raw material for the manufacture of herbal medicines and others medicines (Leão *et al.,* 2007).

2. MATERIAL AND METHOD

2.1 Location of the study area

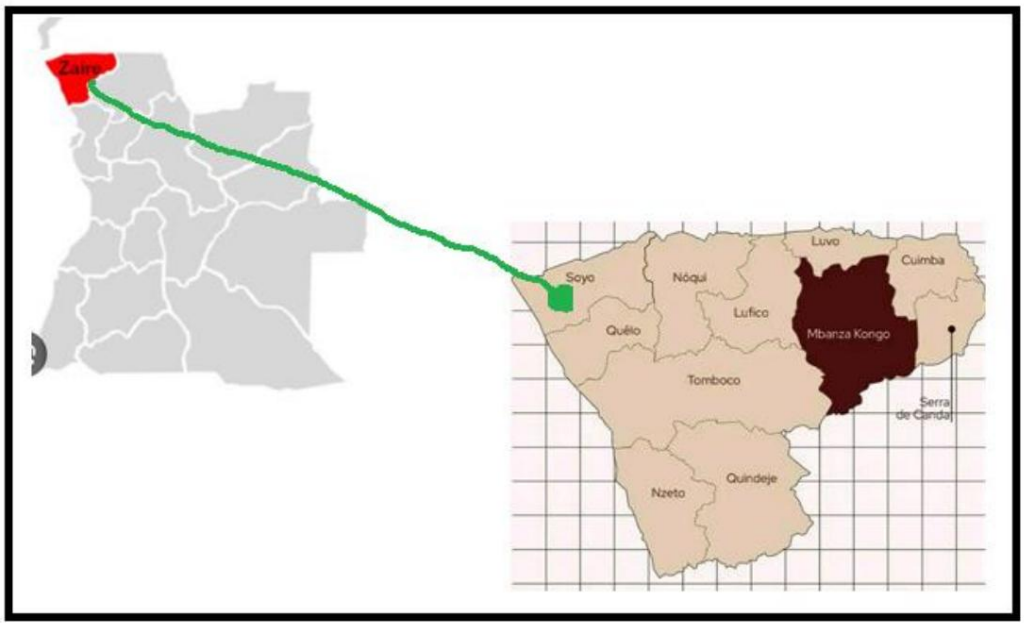

Figure 1: Location of the study area

RCMOS - Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

Soyo, also spelled as Soio, is an Angolan city and municipality in the Province of Zaire, located in the north of the country, on the border with Congo-Kinshasa. Soyo is located north of Angola, according to the 2018 population projections, prepared by the National Institute of statistically, it has a population of 258,599 inhabitants and occupies a territorial area of It is the only Angolan 5,573 km2 . municipality that is more populous than the capital municipality of its country. province, surpassing Mbanza Congo (INE, 2014).

The headquarters is an industrial and port city, known for the important port of Soyo, and by the oil terminals of the Kuanda Base. In the colonial period the location was known as Santo António do Zaire. The municipality of Soyo is administratively divided into a commune, with the headquarters corresponding to the city of Soyo itself, and there also being the commune of Pedra de Feitiço. The main geographical reference of the Municipality is the Congo estuary (also called the Zaire estuary or Baia de Diogo Cão), which receives waters from the basin of the Congo and small rivers forming an immense complex of canals, islands, islets, mangroves and sediment banks. The area is extremely rich in hydrocarbons (AMS, 2017).

When the first Portuguese arrived in 1482, Soyo was already an entity administrative, whose Administrator had the title of "Lord of Soyo" (Muene Soyo). During the 16th century Soyo was ruled by a member of the Congo royal family, appointed by the king and serving a limited period. The ruler at the time the Portuguese, was baptized Manuel, it was said that he was the uncle of the ruling king. Within his supervision of the Congo, the Sio were allowed to expand and conquer other regions under their rule real. Thus, Nzinga Nkuwu, king of Congo in 1491, allowed an expansion of the territory under Soio, following the ruler's baptism this expansion allowed Soio to control itself several under Provinces, including Pambala, Quimi, Tube, along the Congo River and Lovata (among others) off the Atlantic coast (AMS, 2017).

Collection Date and Taxonomic Identification

The ethnobotanical study was carried out from April to September 2024. For the data collection applied two techniques, the interview based on the pre-established questionnaire and observation made in the field, in total 272 informants were interviewed, of which 168 (61.76%) women and 104 (38.23%) men aged between 19 and 67 years.

RCMOS - Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

Some sociodemographic indicators were studied, such as gender, age, educational level, main activity, parts of plants used in traditional medicine, parts used, methods preparation and administration. On the other hand, taxonomic identification was used website www.Plantlist.org.

Data Data Analysis

The main parameters that were used for data analysis were: number of species, number of informants, number of plants. For this purpose, the following was used: Microsoft Excel program version 2016, the data provided by the interviewees were expressed in graphs and tables.

3. RESULTS AND DISCUSSION

Sociodemographic characteristics of informants

Table 1: Sociodemographic characteristics of informants

Variables	Parameters	Frequencies (%)
Gender	Feminine	61.76
	Masculine	38.23
Age range	ÿ 30 years	23.16
	31 to 50 years old	43.38
	ÿ 51 years old	33.45
School level	Literacy	11.39
	Primary	55.88
	Secondary	32.72
	Business	47.05
	Agriculture	40.07

Main activity	Handyman	12.88

Regarding the sociodemographic characteristics of the informants (table 2), the data shows that the majority (61.76%) are female and 38.23% are male. These results can be justified by the availability of time and the spontaneous will of the women, in addition, knowledge about the use of medicinal plants in Soyo City is retained by both men and women, in addition to the supremacy of the female gender. The The results of this study corroborate Mawunu *et al.* (2022) in Uíge, Dougnon *et al.* (2016) in Benin, the female gender is the main connoisseur and user of plants for purposes medicinal. Regarding the age group, 43.38% were individuals aged between 31 to 50 years old, 33.45% individuals aged 51 or over and finally those individuals aged 30 or under with 23.16%. Regarding the educational level, the table 2 shows that the majority (55.88%) were the informants with primary education. Then, the secondary 32.72% and finally the literate with only 11.39%. Similar results were found by Dougnon *et al.* (2016) in Benin. These results are justified because Medicinal plants are often used by individuals with a lower income level low. And as for the main activity of the informants, trade was predominant with 47.05%. Then, agriculture with 40.07% and finally odd-job workers with 12.88%. predominance of commerce is justified in the municipality of Soyo, specifically its City by being an area with little agricultural production, which is why residents have opted for this activity.

Table 2: Presents the botanical families and respective species inventoried in the City of Soyo

Families/Species	Common names	Vegetal organs such used	Vegetative forms	Diseases treated	Preparation methods	Modes of administration
Fabaceae						
Vigna unguiculata L.	Macunde beans (Port.)	Sheets	Crawler	Veins in the belly	Crushing	To scrub
Senna hirsuta (L.) HSIrwin & Barneby	Diniocanioca (Kik.)	Roots	Herbaceous	Stomach aches	Maceration	Cristeira
Erythrina abyssinica DC.	Mungominina (Kik.)	Stem bark	Bush	Trauma	Maceration	To tie
Millettia versicolor Baker	Mbota (Kik.)	Stem bark	Bush	Yellow fever	Decoction	Oral route
Anacardiaceae						

Anacardium accidentalis L.	Cashew tree (Port.)	Leaves, stem bark	Bush	Toothache	Decoction	Oral route
Mangifera indica L.	Hose (Port.)	Stem bark	Arboreal	Back pain	Maceration	Oral route
Spondias mombim L.	Gajageira (Port.)	Sheets	Arboreal	Breast milk	Decoction	Oral route
Malvaceae						
Cola acuminata (Beauv.) Schtt & Endl	Makazu (Kik.)	Fruits	Arboreal	Stomach ache	Peel	Oral route
AIDS acuta L.	Mpunga (Kik.)	Sap	Herbaceous	Injuries	Press	drip

11

RCMOS - Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

Hibiscus sabdarifa L.	Ngai ngai (Kik.)	Sheets	Herbaceous	Anemia	Bake	Baked
Acanthaceae						
Justice second Lam.	Jehovah's Leaf (Port.)	Sheets	Herbaceous	Anemia	Decoction	Oral route
Brillantasia owariensis P.Be-auv	Malemba remembers (Kick.)	Sheets	Herbaceous	High tension	Decoction	Oral route
Asteraceae						
Chromolaena odorata (L.) RMKing	Kongo ya sika, aids (Kik.)	Sheets	Herbaceous	Injuries	Press	drip

Vernonia amygdalina Delile	Malulua	Sheets	Bush	Maceration		Cristeira
Lamiaceae						
Ocimum gratissimum L.	Mansusunsusu	Sheets	Herbaceous	Cough	Press	Oral route
Solanaceae						
Nicotiana tabacum L.	Tobacco (Port.) Smoke (Kik.)	Sheets	Herbaceous	Testicular discharge them	Warm up	Dress up
Solanum lycopersicum L.	Tomato plant (Port.)	Sheets	Climber	Headache	Crushing	Place in the nostrils
Euphorbiaceae						
Jatropha curcas L.	Mpuluka (Kik.)	Sap	Bush	Impiz	Cut	To scrub
Myrtaceae						

Psidium guajava L.	Guava tree (Port.)	Leaves, fruits	Shrub	Diarrhea	Plow	Oral route
Annonaceae						
Annona muricata L.	Sape sape (Port.)	Leaves, fruits	Shrub	Stomach ache, yellow fever	Decoction	Oral route
Monodora angolensis Welw.	Mpeve (Kik.)	Fruits	Arboreal	Stomach ache	Warm up	Oral route
Cucurbitaceae						
Momordica charantia L.	Mimbunzu (Kik.)	Sheets	Crawler	Stomach ache	Crushing	Cristeira
Chenopodiaceae						
Chenopodium ambrosioides L.	Santa Maria (Port.)	Leaves	Herbaceous	Fevers	Decoction	Bath

14

RCMOS – Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

According to Table 2, a total of 40 genera were inventoried, distributed in 40 species and 26 botanical families. The Fabaceae family was the most predominant with 4 species. In turn, the families of Anacardiaceae and Malvaceae were composed of 3 species each. As for the predominance of this family, the results of this research corroborate with Mawunu *et al.* (2022) Pathy *et al.* (2021) in DRC; Novotna, et al. (2020), Jendras, *et al.* (2020), Gonçalves, *et al.* (2019), Lautenschläger, et al. (2018), Göhre, *et al.* (2019), Urso, *et al.* (2019) in Angola; Mahwasane, et al. (2013) in South Africa, Ribeiro, *et al.* (2010) in Brazil and Amujoyegbe, *et al.* (2016) in Nigeria or Ngarivhume, *et al.* (2015) in Zimbabwe.

Other important families found in the study area were Piperaceae, Asteraceae, Burseraceae, Arecaceae, Amarillydaceae, Clusiaceae, Hypericaceae, Meliaceae, Poaceae, Zingiberaceae, Caricaceae, Acathaceae, Rutaceae, Chenopodiaceae, Lauraceae, Moraceae, Cucurbitaceae, Annonaceae, Myrtaceae, Euphorbiaceae, Solanaceae.

Morphological type of floristic diversity

Figure 2 shows the morphological types of the species found in the study area.

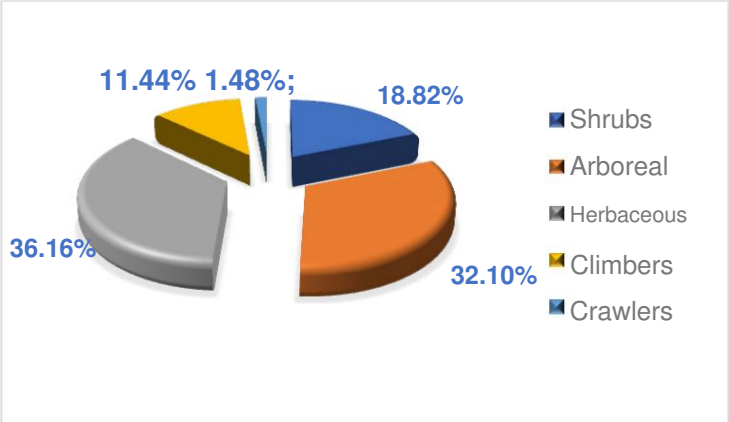

Figure 1: Morphological type (%)

Figure 2 shows that the majority (36.16%) of the vegetative forms inventoried were herbaceous plants. Then, trees 32.10%, shrubs 18.82%, climbing plants 11.44%. Lastly, the creeping ones with only 1.48%. According to the research carried out, the data shows the flora of Soyo City is composed of several species and of varied morphological type, even with the predominance of herbaceous plants. Regarding the predominance of herbaceous plants, the data from this research resemble Pathy *et al.* (2021) in the DRC who found herbaceous plants with a predominance of 36.4%.

15

Plant organs used in traditional medicine

Figure 3 shows the main organs used in curing diseases and illnesses.

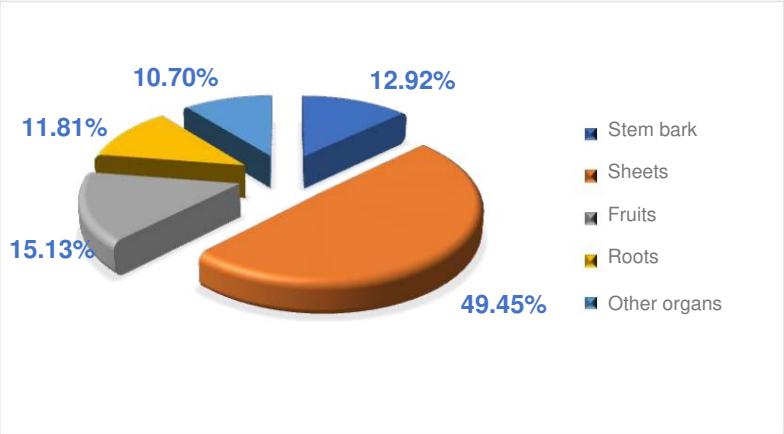

Figure 2: Plant organs used (%)

As for the plant organs used to cure illnesses (figure 3), most (49.45%) use the leaves. Then the fruits with 15.13%, stem bark with 12.92%, roots with 11.81%. Finally, the other organs (bulbs, saps, rhizomes and stems) with 10.70%. The predominance of leaves is justified by the fact that they are an easy-to-harvest plant organ that contains the main substances used in curing diseases. Similar results were found by Mawunu *et al.* (2022) in Uíge, Dougnon *et al.* (2016) in Benin, BÉNÉ *et al.* (2016) in Côte d'Ivoire, Salhi et al. (2010) in Morocco, Richard et al. (2019) in Senegal that the leaves are the main plant organs used in the treatment of various diseases.

Figure 4 shows the categories of diseases found in the study area.

RCMOS – Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

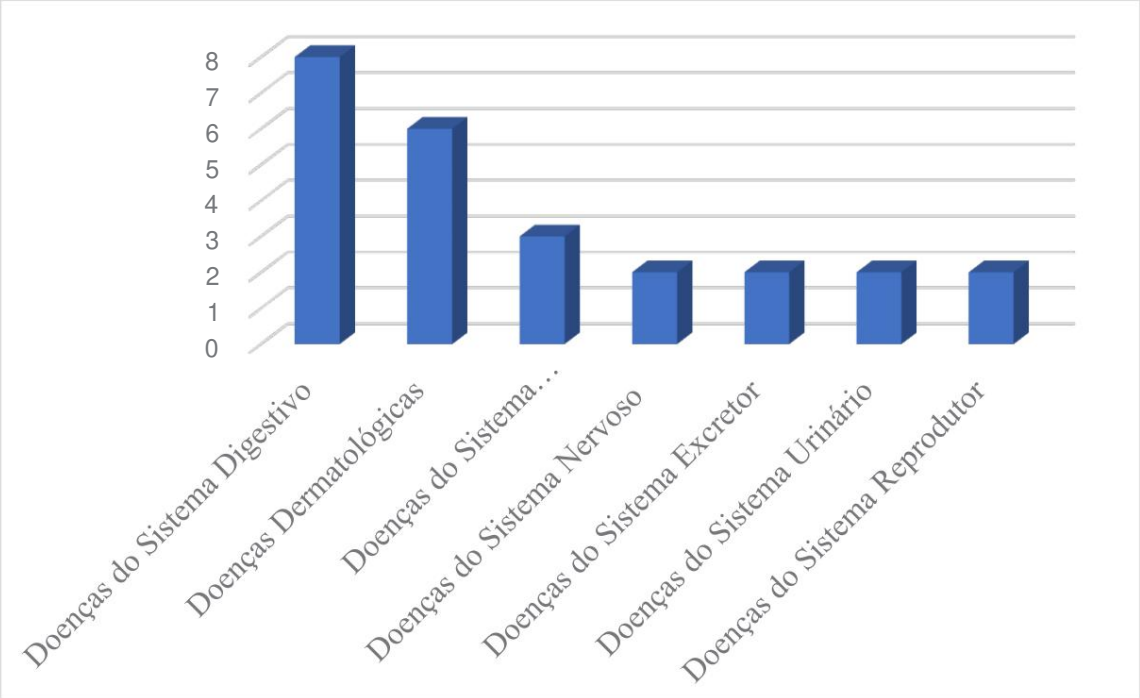

Figure 3: Disease categories (%)

Regarding the main illnesses listed in the study area, (figure 4) shows that the majority (32%) were diseases of the digestive system. Next, dermatological diseases with 24%, diseases of the respiratory system with 12%. Finally, diseases of the nervous system, excretory system, urinary system and reproductive system both with 8%. These results It is justified because most of the diseases that cause serious health problems to human organism predominantly attack the organs of the digestive system. Results similar were found by Mawunu *et al.* (2022) in Uíge, Salhi *et al.* (2010) in Morocco. According to these authors, through the studies carried out, they found the digestive system to be a of those most attacked by different diseases.

Methods of preparing plants used for medicinal purposes

Figure 5 shows the methods of preparing medical prescriptions in the study area.

17

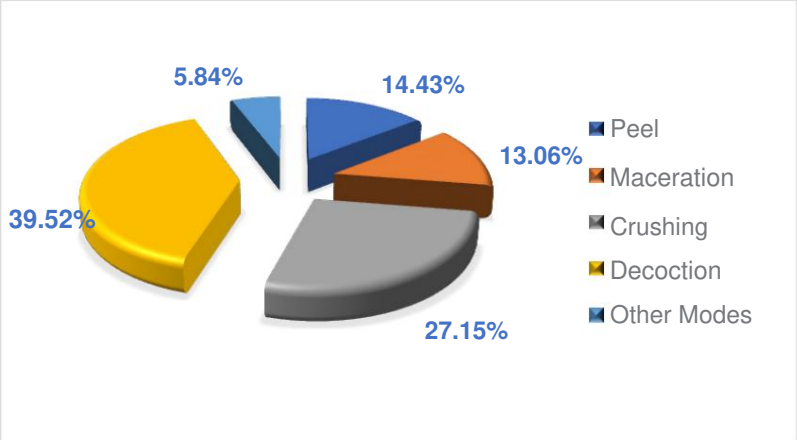

Figure 4: Methods of preparing medical prescriptions (%)

Regarding the preparation methods (figure 5) it shows that the majority (39.52%) of the informants have used decoction as the main method of preparing medical recipes in Soyo City of Soyo. Then, crushing with 27.15%, peeling with 13.06%, maceration with 13% and 5.84%. Finally, the other less used methods (cooking, heating and roasting) only accounted for 14.43%. The predominance of decoction is justified by the fact that most medical prescriptions are administered orally and boiling facilitates the extraction of the substances they contain. active ingredients. Other similar results were found by Mawunu *et al.* (2022) in Uíge, Dougnon *et al.* (2016) in Benin, BÉNÉ *et al.* (2016) in Côte d'Ivoire, Salhi *et al.* (2010) in Morocco, Richard *et al.* (2019) in Senegal as being the decoction is one of the main methods used in the preparation of medical prescriptions.

Figure 6 shows the main methods of administering medical prescriptions in the City of Soyo

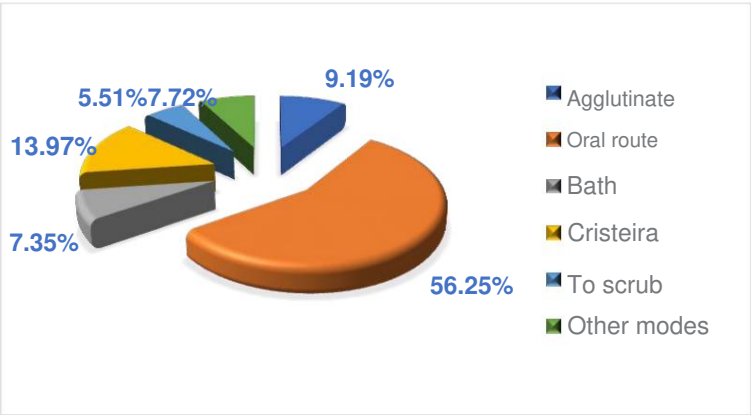

Figure 5: Methods of administration of medical prescriptions (%)

RCMOS – Multidisciplinary Scientific Journal of Knowledge.
ISSN: 2675-9128. Sao Paulo-SP.

Figure 6 shows that the majority (56.25%) of informants used the oral route as their main mode of administration of medical prescriptions in the Municipality of Soyo. Next, Cristeira with 13.97%, bind with 9.19%, bath with 7.35%, rub with 5.51%. Finally, the other modes (drip, dress, place on the head, anus and nasal cavities) with 7.72%.

Similar results were found by Mawunu et al (2022) in Uíge, Dougnon et al (2016) in Benin, BÉNÉ et al. (2016) in Côte d'Ivoire, Salhi et al. (2010) in Morocco, Richard et al. (2019) in Senegal that the oral route is one of the main modes used in administration of medical prescriptions.

The main objective of this study was to rescue from the populations the traditional knowledge about the use of medicinal plants in Soyo City. They were cataloged a total of 40 species of plants used for medicinal purposes, distributed in 40 genera and 26 botanical families.

The residents of Soyo City use medicinal plants to treat various conditions. diseases. As for the study carried out, herbaceous leaves were the most predominant. The methods of preparation and administration of medical prescriptions most used in the City of Soyo were decoction and oral route. Digestive system and dermatological diseases were the most cited in the study area. The population of Soyo City generally uses the plants medicinal and ethnobotanical knowledge is passed down from generation to generation.

The use of medicinal plants is common in the communities of the study area. The residents from Soyo City have used cultivated and native plants in their homes for the treatment of many different diseases and almost all plant organs are used for medicinal purposes, i.e. leaves, fruits, roots, flowers, seeds, stem bark, rhizomes, tubers, among others. Finally, the population of the study area has used the main harvesting techniques for the conservation and preservation of these species.

FINAL CONSIDERATIONS

The main objective of this study was to rescue knowledge from the populations traditional information on the use of medicinal plants in Soyo City. A total of 40 species of plants used for medicinal purposes, distributed in 40 genera and 26 families botanical.

The residents of Soyo City use medicinal plants to treat various conditions.
diseases. As for the study carried out, herbaceous leaves were the most predominant. The methods of preparation and administration of medical prescriptions most used in the City of Soyo were decoction and oral route. Digestive system and dermatological diseases were the most cited in the study area. The population of Soyo City generally uses the plants medicinal and ethnobotanical knowledge is passed down from generation to generation.

The use of medicinal plants is common in the communities of the study area. The residents of Soyo City have used cultivated and native plants in their homes for the treatment of many different diseases and almost all plant organs are used for medicinal purposes, i.e. leaves, fruits, roots, flowers, seeds, stem bark, rhizomes, tubers, among others. Finally, the population of the study area has used the main harvesting techniques for the conservation and preservation of these species.

REFERENCES

1. MUNICIPAL ADMINISTRATION OF SOYO. (2017). Royal Memorandum of the Municipality.
2. AMUJOYEGBE OO; IDU, M.; AGBEDAHUNSI, JM; ERHABOR, JO (2016) Ethnomedicinal survey of medicinal plants used in the management of sickle cell disorder der in Southern Nigeria. Journal of Ethnopharmacology 5(185): 347-360.
3. BÉNÉ, K.; CAMARA, D.;, FOFIE N'GUESSAN BRA, Y.; KANGA YAO, YAB; YAPO YOMEH CYNTHIA, ASA ET ZIRIHI, GN (2016). Ethnobotanique study of the medical plants used in the Department of Transua, District of Zanzan (Cote d'Ivoire).
4. BÔAS, GKV; GADELHA, CAG (2007). Opportunities in the pharmaceutical industry ments and the logic of local development based on Brazilian biomes: bases for the discussion of a national policy. Public Health Journal, Rio de Janeiro, v. 6, n. 23, p. 1463-1471, Jun.
5. DOUGNON, TV; ATTAKPA, E.; BANKOLÉ, H.; HOUNMANOU, YMG; DÈHOU, R.; AGBANKPÈ J.; DE SOUZA, M.; FABIYI, K.; GBAGUIDI, F.; NANNY-MOUSSA, L. (2016). Ethnobotanique study of medical plants used against une maladie cutanée contagieuse: La gale humaine au Sud-Bénin.

6. DUTRA, RAFAEl C. et al. (2016 Medicinal plants in Brazil: pharmacological studies, drug discovery, challenges and perspectives. Pharmacological Research, [SL], v. 112, p. 4-29, Elsevier BV. http://dx.doi.org/10.1016/j.phrs.2016.01.021.

7. GAUDÊNCIO, JÉSSICA da S. et al. (2020). Brazilian indigenous people and the use of plants. Khronos, [SL], n. 9, p. 163-182, July 11, 2014. University of Sao Paulo, USP Agency for Academic Information Management (AGUIA). http://dx.doi.org/10.11606/khronos.v0i9.171134.

8. GÖHRE, ATN Á. B.; FUTURE, M.; NEINHUIS, C.; LAUTENSCHLÄGER, T. (2016). Plants from disturbed savannah vegetation and their usage by Bakongo tribes in Uíge, Northern Angola. Journal Ethnobiol Ethnomedicine 12: 42.

9. GONÇALVES, FMP; TCHAMBA, JE; LAGES, FMOP; ALEXANDRE JLM (2019) Ethnobotanical knowledge of Huíla Province (Angola): a contribution based on field records of collector José Maria Daniel. RILP-Revista International in Portuguese Language *n°35* pp: 83-102.

10. HEINZE, C.; BARBARA D.; MANIZE, FC; INOCÊNCIO, JJ; CHRISTOPH, N.; AND THEA, L. (2017). "First Ethnobotanical Analysis of Useful Plants in Cuanza North, North Angola."

11. LEÃO, RB A; FERREIRA, MR C; JARDIM, MAG Survey of plants of therapeutic use in the municipality of Santa Bárbara do Pará, State of Pará, Brazil. Journal Brazilian Journal of Pharmacy, v.88, n. 1, p. 21 – 25, 2007.

12. JENDRAS, G.; MONIZI, M.; NEINHUIS, C.; LAUTENSCHLÄGER, T. (2020) Plants, food and treatments used by Bakongo tribes in Uíge (northern Angola) to affect the quality and quantity of human breast milk. International Breastfeeding Journal 15: 88.

13. National Institute of Statistics (2014). Preliminary Results of the Census General Population and Housing Report of Agola 2014. Luanda: National Institute of Statistic.

14. KONE, WMK; KAMANZI ATINDEHOU, C.; TERREAUX, KH; TRAORE, D.; AND DOSSO, M. (2004). *Traditional medicine in North Côte-d'Ivoire: screening of 50 medicinal plants for antibacterial activity.* Côte-d'Ivoire: Journal of ethnopharmacology.

15. LAUTENSCHLÄGER, T.; MAWUNU, M.; MACUTIMA, P.; LAU, MJ; MAKAYA, FB (2018) First large-scale ethnobotanical survey in the province of Uíge, northern Angola. Journal of Ethnobiology and Ethnomedicine 14: 51.

16. LIMA, WA (2014). *Ethnobotanical Survey of Medicinal Plants Used by the Pacaás Novos Indians in the State of Rondônia.* Brazil: University of Rondônia.

17. MACIEL, MAM et al. Medicinal plants: the need for studies multidisciplinary. Química Nova, v. 25, n. 3, p. 429-438, 2002.

18. MAHWASANE, ST; MIDDLETON, L.; BOADUO, N. (2013) An ethnobotanical survey of indigenous knowledge on medicinal plants used by the traditional healers of the Lwamondo area, Limpopo province, South Africa. South Afr J Bot 88: 69-75.

19. MAWUNU, M.; ZASSALA, G.; SENGA, PM; PEDRO, NJC; NZAYADIO, M.; BINENE, MG; NGBOLUA, KN; LUYINDULA, N.; And Lukoki, L. (2022) Biodiversity and Ethnobotany of Medicinal Plants of the Small Songo City, Angola.

20. NGARIVHUME, T.; VAN, K. C.; SE JONG, JTVM; VAN DER, WJH (2015) Medicinal plants used by traditional healers for the treatment of malaria in the Chipinge district in Zimbabwe. Journal of Ethnopharmacology 159: 224-237.

21. NOVOTNA, B.; POLESNY, Z.; PINTO, BMF; VAN DAMME, P.; PUDIL, P. (2020) Medicinal plants used by 'root doctors', local traditional healers in Bié province, Angola. Journal of Ethnopharmacology 260: 112662.

22. PATHY, K.K.; FLAVIEN, NB; HONORÉ BK; VANHOVE, W.; VAN DAMME, P. (2021) Ethnobotanical characterization of medicinal plants used in Kisantu and Mbanza-Ngungu territories, Kongo-Central Province in DR Congo. J Ethnobiology Ethnomedicine 17:5.

23. PILLA, M.; AMOROZO, M.; & FURLAN, A. (2006). *Obtaining and using plants medicinal plants in the district of Martim Francisco, Municipality of Mogi Mirim, SP, Brazil.* Brazil: Acta Botanica Brasilica, v.20, n.4, p.789-802.

24. RICHARD, DD; MAME, SM; IBOU, DCB; OUMAR, SAAC; MAME, T. A. ET KANDIOURA, N. (2019). Medical uses of these plants for the population Riveraine du conservatoire botanique Michel Adanson de Mbour (Sénégal).

25. RIBEIRO, A.; ROMEIRAS, MM; TAVARES, J.; FARIA, M. T (2010). Ethnobotanical survey in Canhane village, district of Massingir, Mozambique: medicinal plants and traditional knowledge. J Ethnobiol Ethnomed 6:33.

26. ROCHA, FAG da et al. (2015). The therapeutic use of flora in world history. Holos, [SL], v. 1, p. 49-61, March 6. Federal Institute of Education, Science and Technology of Rio Grande do Norte (IFRN). http://dx.doi.org/10.15628/holos.2015.2492.

27. SILVA, KO; ALMEIDA, SS (2020). Use of medicinal plants in an association rural in the semi-arid region of Bahia. Health and Environment Journal, Três Lagoas, v. 10, n. 1, p. 95-105, Jan. 2020. Biannual.

28. SOUAD SALHI, MOHAMED FADLI, LAHCEN ZIDANE & ALLAL DOUIRA (2010). Etudes floristique et ethnobotanique des plantes medicinales de la ville de Kenitra (Morocco)

29. Tomazzoni, M., & Negrelle, RC (2006). *Popular phytotherapy: The instrumental search as a practice.*

30. Turolla, M., & Nascimento, E. (2006). *Information on some herbal medicines used bo Brazil.* Brazil: Brazilian Journal of Pharmaceutical Sciences v.42, n.2.

31. Urso, V.; Signorini MA; Tonini, M.; Bruschi, P. (2016) Wild medicinal and food plants used by communities living in Mopane woodlands of southern Angola: Results of an ethnobotanical field investigation. Journal of Ethnopharmacology 177: 126-139.

32. Vieira, AC De M.; Layz SMC; Thacid, K. C. M.; Isis, MV De S.; Silviane Dos RA (2016). *Manual on the Rational Use of Medicinal Plants - Volume1.* river of January.