

MEDICINAL PLANT TRADE AS A BUSINESS ALTERNATIVE IN ARAGUARI, MG, BRAZIL

Comércio de plantas medicinais como alternativa de negócios no município de Araguari, MG, Brasil

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ABSTRACT

The use of products based on medicinal plants has arisen as a strong trend worldwide. They comprise a promising market which has already reach expressive figures and become an attractive business environment. However, despite the social and economic importance these plants have, neither Brazil nor Minas Gerais (MG) state have adequately invested in their production, industrialization and distribution. Therefore, this study aimed at investigating the existence of trade patterns of medicinal plants at the Araguari Public Market in Araguari, a city located in MG, Brazil. The methodology comprised semi-structured interviews which were answered by medicinal plant salespersons on appropriate forms. Informants mentioned the sixteen most sold medicinal plants; regarding the number of species, the family Fabaceae stood out. Most identified species are tree-like plants that are native to biomes, such as the Cerrado and the Mata Atlântica. This study showed that medicinal plant production and trade follow a local pattern, i. e., plants are bought from third parties with no minimum quality standard, except in city pharmacies, where quality control is strict. However, concerning the Araguari Public Market, there is need to implement public policies on professional training aiming at people who sell medicinal plants, so as to add value to popular knowledge about these plants and to make clients develop trust in these services.

Key words: medicinal plants, Araguari Public Market, business management.

RESUMO

O uso dos produtos à base de plantas medicinais surge como uma forte tendência mundial. Esse é considerado um mercado promissor e apresenta números expressivos, tornando-se um ambiente de negócio atrativo. Entretanto, apesar de toda importância social e econômica, o Brasil e Minas Gerais não tem investido adequadamente na produção, industrialização e distribuição dessas plantas. Objetivou-se com esta pesquisa verificar a existência de padrões de comercialização de plantas medicinais no mercado municipal de Araguari-MG. A metodologia incluiu a realização de entrevistas semiestruturadas, aplicadas a vendedores de plantas medicinais, sendo estas respondidas através de formulários. Os informantes indicaram um total de 16 plantas medicinais mais vendidas, tendo a família Fabaceae com maior destaque em número de espécies. Do total de espécies identificadas, a maior parte é obtida de biomas como Cerrado e Mata Atlântica e são de porte arbóreo. Este estudo revelou que a produção e comercialização de plantas medicinais possuem um padrão local, com as plantas adquiridas através de terceiros, não havendo um padrão mínimo de qualidade, com exceção das farmácias de manipulação da cidade que seguem um rígido controle de qualidade. Entretanto, em relação ao mercado municipal de Araguari, constata-se a necessidade de implantação de políticas públicas voltadas a capacitação dos profissionais que comercializam plantas medicinais, agregando desta maneira valor ao saber popular sobre plantas medicinais e maior confiabilidade dos clientes que procuram por estes serviços.

Palavras-chave: Plantas medicinais, mercado municipal de Araguari, gestão de negócios.

INTRODUCTION

The world has undergone changes in personal, natural and ecological values that definitely determine new principles in all areas of scientific knowledge and everyday life. As a result, products from medicinal plants have occupied an increasingly large space in the market (FERNANDES et al, 2015).

The World Health Organization (WHO) has established that medicinal plants are the ones that contain— in one or more organs – compounds that may be used for therapeutic purposes or that are precursors of chemical-pharmaceutical semisynthesis (RAMOS; DAMASCENA, 2018). Taking into account that 80% of the world's population use either these plants or some forms of preparation in primary health care, mainly in developing countries, such as Brazil, which hold 67% of the world's plant species, it is important to study their trade and popular uses not only to preserve them but also to maintain the popular knowledge associated to them. It should be highlighted that, despite the importance of this market, there are no official data on the phytotherapy industry in Brazil; it has been estimated that it is worth 1 billion Brazilian reais/year (CARVALHO et al, 2008).

Medicinal plants are free sale products that require the advice of professionals, such as pharmacists and other health care workers, who master scientific knowledge about the pharmacological use of phytotherapy products (FREITAS et al, 2012). The National Policy on Integrative and Complementary Practices issued by the Brazilian Health Care System (SUS) enables their technical-scientific knowledge and people's knowledge about medicinal plants to be intertwined, since it is generated and kept by cultural groups that live with nature, closely observe it and explore its potentiality, such as root-knowers and medicinal plant salespersons (FIGUEREDO; GURGEL; JUNIOR, 2014), besides local experts (payers and healers) who were identified by this study.

An important criterion adopted in Brazil is the existence of a pattern of medicinal plant trade, since it has still been practiced as the result of the use and efficacy of natural products to treat diseases. Therefore, it is fundamental to focus on the quality of plants and their derivatives which are produced, commercialized and used by people (SOUZA-MOREIRA; SALGADO; PIETRO, 2010), including residents in Araguari, MG.

The Araguari Public Market, MG, whose construction dates to 1962, has been a factor of socio-economic integration in the state's heartland, which encompasses surrounding cities. Several goods, such as medicinal plants, are sold in this market, where consumers can find almost everything (ARAÚJO; FILHO; SOARES, 2008). This study was based on these assumptions and aimed at verifying the existence of a pattern of production, trade and use of medicinal plants in Araguari, MG, so as to know the most sold species and parts of plants, how they are acquired, how much people know about them, how they are used and which diseases they are supposed to fight against. Finally, salespersons' profit was also investigated.

MATERIAL AND METHODS

This study was carried out in Araguari, MG, Brazil, from April 2019 to October 2019. Semi-structured interviews were applied to root-knowers and medicinal plant salespersons. Araguari, which is located in the north of the mesoregion called Triângulo Mineiro/Alto Paranaíba, in MG, Brazil, stretches over 2,730 Km² (the rural area corresponds to 2,675 Km² while the urban one occupies 55 Km²) (ARAÚJO; FILHO; SOARES, 2008). The 2019 demographic census shows that it has 116,691 inhabitants.

The Araguari Public Market is on Coronel Teodolino Peixoto de Araújo Avenue, one of the city's main avenues. The newspaper Gazeta do Triângulo published that the building was opened on May 27th, 1962, with the participation of several local authorities, and that "construction and funding of this important building were carried out by the "Construtora Mineira (COMIL)".

Intentional non-probability sampling was conducted. In order to select samples, the inclusion criterion was that subjects had to be medicinal plant salespersons at the Araguari Public Market, while the exclusion criterion was that subjects could not be minors.

Direct observation was used to identify medicinal plant salespersons, who are called root-knowers in the community, during periodic visits to the market. In order to identify informants, the snowball technique was used. According to Bailey (VINUTO, 2014), it is a non-probability sampling technique which is used in social research in which existing study subjects recruit other participants from among their acquaintances in order to reach the expected number of subjects.

Eight informants were identified at the Araguari Public Market; two of them were considered key informants because of their deep knowledge about medicinal plants. Due to the small number of samples, data provided by different sources were crossed. Thus, data from two root-knowers was crossed with the ones provided by other salespersons who work at the Araguari Public Market. They were asked whether they knew other medicinal plant salespersons in other places in the city. As a result, two more informants who used to sell medicinal plants in front of their own houses (a typical example of informal markets) were found (Figure 1). At the end, the sample of this study comprised ten subjects.

Figure 1: Packing and display of medicinal plants in Araguari, MG (Source: Author)



Source: Author

Interviews were answered by the subjects in their workplace, i. e., at the Araguari Public Market. The method of free listing (MONTELES; PINHEIRO, 2007) in which every informant listed species that are used as medicinal plants, was carried out. It is a very common technique in Social Sciences which usually aims at identifying cultural domains in a certain community; in this case, informants listed medicinal plants that they knew and/or used. This technique is also important to identify local experts in a certain cultural domain. Collected data formed a database in Microsoft

Office Excel® 2010, whose analysis led to their relative frequency, expressed as percentage in tables and figures.

RESULTS AND DISCUSSION

Most root-knowers and medicinal plant salespersons were women (n=3); they were between 30 and 65 years old, while men were between 30 and 75 years old. Most had low monthly income and depended on the medicinal plant trade to complement it. Regarding the origin of their knowledge about medicinal plants, they mentioned that they had got it from their parents and, mainly, from their grandparents, since these relatives used plants to cure themselves, family members and acquaintances. Others said that they had got their knowledge by reading books about the topic.

Interviewees reported that there was strong decrease in the number of medicinal plant salespersons at the Araguari Public Market, a fact that they believe to be due to some factors, such as the cost of stands and/or points of sale. Besides buying products, they must pay rent and an extra fee to the city hall, which means that profit is very low and, according to them, the search for these plants has decreased over the years. Another factor brought up by the informants was the development of formal trade, since the so-called stores of natural products sell medicinal plants in agreement with ANVISA norms, which establish hygiene and quality requirements. This fact may have contributed to the decrease in sales of medicinal plants in street markets and at the Araguari Public Market.

The Brazilian government has perceived the importance of the medicinal plant sector and developed public health policies on this production chain. They establish guidelines and priorities to develop public actions and reach objectives which ensure safe access and rational use of medicinal plants and phytotherapy products, development of technologies and innovation, strengthening of production chains and supply arrangements, sustainable use of biodiversity and development of the Production Complex in Health in Brazil (ABRAHÃO; CARVALHO, 2018).

The process of phytotherapy products starts when their raw material, i. e., medicinal plants, is collected. Although most Brazilian production of medicinal plants comes from extractivism processes, home cultivation has been implemented. On the other hand, extractivism has weakened not only because of sanitary and environmental legislation, but also because of pressure posed by industries that

require quality raw material and regular supply to manufacture phytotherapy products (GUILHERMINO; QUENTAL; BOMTEMPO, 2012).

The phytotherapy product industry has been developing all over the world and may represent an opportunity to develop the pharmaceutical sector in Brazil. It is relevant because of both the country's natural richness in biodiversity and the traditional and scientific knowledge about the biological activity of plants which has been accumulated by the civil society, as well as by scientific and technological institutions (HASENCLEVER et al, 2017). Thus, Araguari, MG, is seen as a promising city regarding the trade of medicinal plants and phytotherapy products.

All plants sold in the market are bought from third parties. No salesperson mentioned that s/he grew the plants that s/he sold. Plants come from other cities and even from other states, such as Goiás and São Paulo, since, according to the informants, it is hard to find the plants in the city and its surroundings. Rocha et al. (2013) got similar findings when they analyzed medicinal plant trade in Currais Novos, MG (ROCHA et al, 2013). Likewise, Alves et al. (2008) found that plants were bought from third parties when they studied this trade in Campina Grande and João Pessoa (Paraíba), São Luis (Maranhão), Teresina (Piauí) and Belém (Pará) (ALVES; SILVA; ALVES, 2008).

Care taken by root-knowers and salespersons means only washing and drying, since most species are fresh when they get them. The stated that, although they recommend plant and preparations, many people know which plant they want to buy when they come to the market. Plants that are recommended for treating cancer, prostate, diabetes, inflammation and lung disorders are the most sold ones. Alves et al. (2008) found similar results in their study, i. e., inflammation, diabetes and gastritis were the diseases that got the highest number of recommendations to be treated with medicinal plants (ALVES; SILVA; ALVES, 2008).

Figure 1 shows that plants are usually sold outdoors, either packageless or in bottles, and are prone to contamination. They may also be sold in pieces tied in little bunches or in sealed plastic bags. Some are vacuum packed so that they can be added to wine or grape juice. Besides, this plant material is sold with no information on contraindications, which may harm consumers' health. Thus, medicinal plant trade at the Araguari Public Market has a local trade pattern even though there is no minimum quality standard. Interviewees follow the same trade procedures, both to

buy their raw material and to recommend and expose their products. They show that there is a trade pattern concerning the sale of these plants.

The most sold species are southern elder (*Sambucus australis* Cham. & Schldl), aniseed (*Pimpinella anisum* L.), spike-thorn (*Maytenus ilicifolia* Mart. ex Reissek), boldo (*Peumus boldus* Molina), stonebreaker (*Phyllanthus niruri* L.) and lemon grass (*Cymbopogon citratus* (DC.) Stapf). They have been included in the Brazilian Pharmacopeia; information on their parts are similar to the ones provided by the informants. The highest number of plants sold at the Araguari Public Market was found to belong to the family Fabaceae/Leguminosae, which has much relevance in the literature (AZEVEDO; RIBEIRO; AZEVEDO, 2007). Other samples which are also sold carry the following common names: black parsley, red parsley, sweet cotton, lemon balm, Peruvian ginseng, mulungu, drumstick tree, field horsetail, blackberry and leather hat.

The positive aspect of medicinal plant trade is that it is socially and economically important, since the use of these plants has better cost-benefit ratio than synthetic products due to the fact that their biological activity is effective and has low toxicity and side effects, besides lower production cost and, consequently, lower sale price. In addition, it should be highlighted that 80% of the world's population uses these plants or preparations in primary health care (ALMEIDA, 2019).

In MG, Souza et al. (2012) studied medicinal plant trade at the Belo Horizonte Central Market and pointed out that there is lack of effective communication between distribution and production channels and recommended the construction of an efficient network to publicize medicinal plants, which could be established by policies on communication integrated with a development program of medicinal plants (SOUZA; PEREIRA; FONSECA, 2012).

Intertwinement between popular and scientific knowledge is needed to bind root-knowers' and salespersons' traditional knowledge about medicinal plants. Another evident need is to enable them to manage and sell these species appropriately by using good practices in their points of sale. It generates income to the salespersons and preserves this way of selling medicinal plants in street fairs and city markets; thus, popular knowledge that is associated with it becomes a strong argument in favor of biodiversity preservation (BADKE et al, 2012).

CONCLUSION

Medicinal plant trade in Araguari, MG, has been carried out by few salespersons who have a local pattern to buy and sell these plants; however, there is no minimum quality standard, a fact that requires the implementation of public policies on professional development to add value to popular knowledge about medicinal plants. Besides, this study also concludes that medicinal plant production may become an activity that can get stronger in Araguari, MG, and an important instrument to boost rural development in communities and small cities in Minas Gerais state, thus, generating jobs and income to make agricultural activities feasible.

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REFERENCES

- ABRAHÃO, ELCR; CARVALHO, JC. O programa nacional de plantas medicinais e fitoterápicos, os arranjos produtivos locais (APL'S) das agricultoras familiares e ao acesso ao sistema único de saúde. **Unieuro**, 2018, v.27, n.especial, p.43-57.
- ALMEIDA, JRGS. Núcleo de estudos e pesquisas de plantas medicinais (NEPLAME): um breve histórico, principais avanços e perspectivas. **Revista Virtual de Química**, 2019, v.11, n.2, p.379-393.
- ALVES, RRN; SILVA, CC; ALVES, HN. Aspectos sócio-econômicos do comércio de plantas e animais medicinais em área metropolitana do norte e nordeste do Brasil. **Bioterra**, 2008, v.8, n.1, p.182-189.
- ARAÚJO, FAV; FILHO, VR; SOARES, BR. Análise do processo de refuncionalização das atividades de comércio e serviços do Mercado municipal de Araguari (MG). **Geografia Econômica**, 2013, v.11, n.3, p.1-11.
- AZEVEDO, RL; RIBEIRO, GT; AZEVEDO, CLL. Feijão guandu: uma planta multiuso. **Revista da Fapese**, 2007, v.3, n.2, 81-86.
- BADKE, MR; BUDÓ, MLD; ALVIM, AT; ZANETTI, GD; HEISLER, EV. Saberes e práticas populares de cuidado em saúde com o uso de plantas medicinais. **Texto & Contexto – Enfermagem**, 2012, v.21, n.2, p.363-370.
- CARVALHO, ACB; BALBINO, EE; MACIEL, A; PERFEITO, JPS. Situação do registro de medicamentos fitoterápicos no Brasil. **Revista Brasileira de Farmacognosia**, 2008, v.18, n.2, p.314-319.
- FERNANDES, T; JUNIOR, MAS; NASCIMENTO, VL; FERNANDES, OM; FERNANDES, T; MORAIS, DD. Fatores que afetam a logística de alimentos do campo no município de Nova Olímpia, Mato Grosso, Brasil. **Raízes e Rumos**, 2015, v.3, n.2, p.41-46.

FIGUEIREDO, CA; GURGEL, IGD; JUNIOR, GDG. A política de plantas medicinais e fitoterápicos: construção, perspectivas e desafios. **Physis Revista de Saúde Coletiva**, 2014, v.24, n.2, p.381-400.

FREITAS, AVL; COELHO, MFB; AZEVEDO, RAB; MAIA, SSS. Os raizeiros e a comercialização de plantas medicinais em São Miguel, Rio Grande do Norte, Brasil. **Revista Brasileira de Biociências**, 2012, v.10, n.2, p.147-156.

GUILHERMINO, JF; QUENTAL, C; BOMTEMPO, JV. Sistema de inovação em fitomedicamentos: os desafios da gestão para o desenvolvimento de fitomedicamentos a partir da biodiversidade brasileira. **Fitos**, 2012, v.7, n.3, p.169-184.

HASENCLEVER, L; PARANHOS, J; COSTA, CR; CUNHA, G; VIEIRA, D. A indústria de fitoterápicos brasileira: desafios e oportunidades. **Ciência & Saúde Coletiva**, 2017, v.22, n.8, p.2559-2569.

MONTELES, R; PINHEIRO, CUB. Plantas medicinais em um quilombo maranhense: uma perspectiva etnobotânica. **Bioterra**, 2007, v.7, n.2, p.38-48.

RAMOS, ES; DAMASCENA RS. Avaliação do uso de plantas medicinais na academia da saúde do município de Rio de Contas/BA. Id on Line **Revista Multidisciplinar e de Psicologia**, 2018, v.12, n.42, p.75-84.

ROCHA, FAG; ARAÚJO, MFF; COSTA, NDL; SILVA, RP; QUEIROGA, PVDM; MARCIANO, LA; PONTES, EDM; SOUZA, JAB. Características socioeconômicas dos comerciantes de plantas medicinais de Currais Novos/RN. **Holos**, 2013, v.29, n.4, p.87-100.

SOUZA, MRM; PEREIRA, RGF; FONSECA, MCM. Comercialização de plantas medicinais no contexto da cadeia produtiva em Minas Gerais. **Revista Brasileira de Plantas Medicinais**, 2012, v.14, n.especial, p.242-245.

SOUZA-MOREIRA, TM; SALGADO, HRN; PIETRO, RCLR. O Brasil no contexto de controle de qualidade de plantas medicinais. **Revista Brasileira de Farmacognosia**, 2010, v.20, n.3, p.435-440.

VINUTO, J. Amostragem em bola de neve na pesquisa qualitativa: um debate em aberto. **Temáticas**, 2014, v.22, n.44, p.203-220.