The Potential of Cow's Paw (*Bauhinia Forficata*) as a Food and Therapeutic Alternative: A Scientific Investigation

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***Abstract* — *Bauhinia forficata*, commonly known as cow's paw, is among the species most used for this purpose. Among the representatives of Bauhinia, the one with the largest number of studies regarding hypoglycemic and antidiabetic activity is the species mentioned. This is because, due to its pharmacological activities, several studies report its botanical aspects, chemical composition and effectiveness. This constant interest in itsstudy is imperative for its safe and effective use. Therefore, the objective of this work is to provide information botany of these plants, which constitute a importance for the differentiation of species aiming at their correct use. Furthermore, given the medicinal and ornamental of the genre, aspects will be covered extremely pertinent agronomic criteria, since these promote studies of propagation strategies for species and their cultivation; whether they are intended for urban afforestation or planting in areas outside crops medicinal products as "windbreaks".**

Keywords*—:*Food, Bauhinia forficata, PANC, Therapy.

Introduction

The use of plants to treat diseases human remains from the beginnings of civilization. You knowledge was, in primitive tribes, being obtained through perceptions of the effects of certain plants and transmissions from generation to generation. No ancient Egypt, several manuscripts are found on papyrus that recorded the use of flora species for medicinal purposes. In Mesopotamia, it was recorded in cuneiform writing, on clay tablets by the Sumerians, the use of herbs such as thyme (*Thymus vulgaris* L.) and opium (*Papaver somniferum*L.). In Brazil, inturn, when here Europeans arrived, they found several medicinal species being widely used by indigenous peoples, knowledge held by shamans and which were transmitted and improved with each generation (Bevilacqua, 2010).[1]

Due to the great plant diversity of the territory Brazilian, there are many medicinal species discovered, such as plants of the genus Bauhinia, belonging to the Fabaceae family, where they are grouped the different species popularly known as pata-de-vaca, or even, in some regions, a cow's claw, bull's claw or *Bauínia*.

*Bauhinia forficata*is the species that presents the largest number of studies regarding hypoglycemic activity *in vivo*, and is widely used in the form of teas and other preparations herbal medicines (Silva & Cechinel Filho, 2002)[10]. The first reports about the activity antidiabetic properties of B. forficata were demonstrated by Juliane (1929; 1931)[7], through tests carried out with diabetic patients (Lima, 2009)[8]. Since then, aqueous extracts of its leaves, as well as roots and stems, have been widely used over time in diabetes treatment in several countries, including Brazil (Silva et al., 2012b)[9] and due to this fact, included in the List of Medicinal Plants ofInterest to the SUS – RENISUS.

Thus, it is considered as pieces with the potential to advance in the stages of the chain productive and to generate products of interest to the SUS. Despite the vast use of B. *for ficata* by population, there are no products with valid registration with ANVISA, although preparations using this species are widely commercialized in Brazil under the most diverse pharmaceutical forms–tea, tincture, extract, capsule, always with all egedactivity antidiabetic.

Trojan-Rodrigues et al. (2012)[11], in an analysis of ethnobotanical studies, highlighted that *B. forficata* is among the plants popularly mentioned to treat diabetes mellitus in the State of Rio Grande do Sul. Furthermore, this species stands out among the plants medicinal products widely sold in Brazil (Franco et al., 2011)[6]. Extracts of cow's paw (B. *forficata*) have been explored both in relation to their chemical composition and in relation to its pharmacological potential.

From the point of view chemical, a wide range of compounds have been isolated and identified, including as main components of the leaves of this species lactones, O-glycosylated flavonoids derivativesofkaempferolandquercetin,terpenoids,glycolipids,tanninsandquinines. Kamferitrin is recommended as the indicated marker for quality control of pharmaceutical preparations from *B.forficata*, including validated methodologies already written. Regarding the pharmacological properties for this species, preclinical studies confirmed the hypoglycemic and antidiabetic effect of the hydroalcoholic extract of *B. forficata*(Da Cunha et al., 2010)[2].

The existing data in the literature allow us to observe that there are controversies regarding the results obtained, however these may be due to several aspects such as: types of soil, climate,

conditions under which the plant was cultivated and stored and seasonal variations. The different forms, fractions and routes of administration used in the trials (Silva et al., 2002; Da Silva et al., 2002; De Sousa et al., 2004)[10].

MATERIALANDMETHODS

Research was applied with quantitative and qualitative approaches regarding unconventionalfood plants or PANCs. The questionnaire was prepared on the *Google Forms* platform and was available for receiving responses during the period from October 1st to December 15th, 2023. The survey was sent randomly to participants through online communication media. The same was applied to 68 people from all regions of Brazil, of all ages and all levels of education.

In addition to questions to identify the participants' profile, the questionnaire presented a list of ten questions about PANC Pata-de-Vaca (*Bauhinia Forficata*).

Those who agreed to participate in the research were informed about the academic objectives of the study. The questions were formulated based on scientific articles consulted in the Google Scholar, PubMed and Lilacs databases and by the research participants themselves.

RESULTSAND DISCUSSION

This review aimed to analyze the benefits of the plant's phytotherapeutic properties Bauhinia *forficata*on the quality of life of individuals. For achieve a certain objective of the study and its respective result, it was necessary to evaluate and investigate the results and positions of the relevant authors in the present study.

The present study interviewed 68 candidates on the topic, of which 61.8% were in the age group between 31 and 50 years old and 70.6% identified as female. Fortunately, 76.5% of candidates already knew the plant, and, on the other hand, 44.8% did not know the best way to consume it.

As expected and reflected in the literature, 39.7% said that B. *fortificata* helps to combatdiabetes, followed by healing, analgesic effects and finally, with 10.3% indicating diuretic properties.

Like many other plants, candidates are interested in knowing how to consume and use them in the best possible way. The doubts are specific and general. Other studies must be applied for better understanding.

The activities of *Bauhinia forficate* are antioxidant, anti-inflammatory, diuretic, healing, digestive, expectorant, analgesic and hypoglycemic, associated with the fight against diabetes mellitus. This, in turn, is a disease that is related to increased blood glucose levels. It can be divided into 2 main types: type I diabetes, hereditary and less recurrent, more aggressive, and type II diabetes, more common and related to behaviors; both have no cure and need appropriate treatment, otherwise it can lead to the corroboration of other problems and thus lead to the individual with the disease having a poor quality of life or even death (Da Cunha et al., 2010)[2].

Plantssuchas flavonoids, steroids andterpenes have antioxidantsthathelpinthe prevention and treatment of diabetes and its complications that generate secondary diseases such as coronary artery disease. Studies report a reduction in cholesterol, with a consequent reduction in theincidenceof arterial diseases, a reduction in lipid activity and serumlipid concentration, as well as a contribution by diuretic, antimicrobial and antiproliferative properties (Da Cunha et al., 2010)[2].

Currently, several studies show the potential of functional foods/nutraceuticals in reducing the risk of chronic diseases. Therefore, medicinal plants are recognized as an excellent source of bioactive compounds that are not nutrients with potential health benefits.

CONCLUSION

The work also makes it clear that there is a growing need for studies related to PANCs, so that a solid database can be created on the enormous diversity of plants and their benefits, so that the population can decide on the inclusion of these foods in their diets.

In conclusion, considering the premisethat medicinal plants demonstrate efficacy in treatment of chronic diseases, it is essential to promote greater investment and incentives for professionalscan carry out scientific research in this area.

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