KNOWLEDGE ON MEDICAL PLANTS BETWEEN STUDENTS OF THE FEDERAL UNIVERSITY OF MATO GROSSO. CUIABÁ, MT, BRAZIL

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ABSTRACT: (KNOWLEDGE ON MEDICAL PLANTS BETWEEN STUDENTS OF THE FEDERAL UNIVERSITY OF MATO GROSSO. CUIABÁ, MT, BRAZIL). The recovery of popular knowledge about the use of medicinal plants, for the most diverse purposes, contributes in a relevant way to the dissemination of therapeutic potential as well as subsidies to research in different areas. The work was carried out with 25 students of the Forest Engineering course during the mini-course "Ethnobotany: Multiple uses of vegetal resources". The objective of the present study was to evaluate students' perception regarding the use of medicinal plants through semi-structured interviews. Of the interviewees, 88% use plants for the most frequent health problems. The leaf is the most used part and the main mode of preparation is the tea. Medicinal plants were distributed in 22 families and 34 species. The botanical families with the highest number of species were Asteraceae (5 spp.) and Lamiaceae (4 spp). The *Plectranthus barbatus* (boldo) and the *Mentha Villosa* (mint) were the species that received the highest Percentage of Use Agreement (Pcup) with 59% and 46%, respectively, which shows that these species are widely used by deponents. The research showed that students have a certain degree of knowledge about the use of medicinal plants and that it is disseminated in the family environment.

Keywords: Traditional Medicine, Ethnobotany, Popular knowledge

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INTRODUCTION

The use of plant species for the purpose of treatment and cure of diseases has been known since ancient civilizations (CARVALHO; SARTI, 2004). Among the items that make up the natural environment, plants constitute the main element for the manufacture of herbal medicines and other conventional medicines and are used as home remedies in popular practices. This fact is due to ethno-pharmacological and ethnobotanical studies, which in their practice aggregates the values of empirical use of plant species with the scientific support that seek to legitimize the pharmacological effects in them (GONÇALVES & PASA, 2015).

The recovery of popular knowledge about the use of medicinal plants, for the most diverse purposes, contributes in a relevant way for the dissemination of therapeutic potential as well as subsidies for research in different areas (DA VILA-PEREIRA). Of the economic value of world biodiversity, the World Health Organization estimates that about 30% of the drugs available today are derived from natural sources (WHO 2005).

Although there are several studies on the use, efficacy and toxicity of medicinal plants, the scientific literature is still scarce in the sense of knowing what people think about it, the level of knowledge that they hold the belief and the treatments made with the home remedies (SANTOS et al., 1995). 79% of the students reported that they had used medicinal plants, but only 35% of the students in this institution were aware that many plants can cause harm to human health when used improperly, compared with 56% who do not believe this statement (FRANÇA et al., 2007). In view of the above, the objective of the present study was to evaluate the knowledge about the medicinal flora, as well as the form of use.

MATERIAL AND METHODS

The work was carried out at the Federal University of Mato Grosso (UFMT), located in the Municipality of Cuiabá, Mato Grosso, with 25 students from Forestry Engineering, among which 17 were female and 8 were male.

The methodology used was qualitative through semi-structured interviews during the mini-course "Ethnobotany: Multiple uses of plant resources". The identification of the species was made and by the classification system APG IV the names were conferred according to the database of Flora of Brazil (List of Brazilian Flora Species, 2015) and Missouri Botanical Garden (Angiosperm Phylogeny Group 2016) by means of bibliography (LORENZI and MATOS 2008).

For the quantitative analysis were used: Loyalty Level (NF), Correction Factor (FC) and Percentage of Agreement on Main Use (Pcup). The Fidelity Level is calculated by the number of informants who indicated the main use for each species (Fid) by the total number of informants who quoted the plant for some use (Fsp), NF = (Fid / Fsp) x100. The Correction Factor becomes necessary due to the difference in the number of informants who cited uses for each species, FC = Fsp / ICEMC, ICEMC being the number of citations of the most cited species. The final calculation consists of the relative frequency, that is, the multiplication of NF and FC results to indicate the expressive popularity of the plant, according to Friedman (1986).

RESULTS AND DISCUSSION

The use of plants for the treatment of health problems is frequent in 88% of the students and only 12% never used medicinal plants (Figure 1).

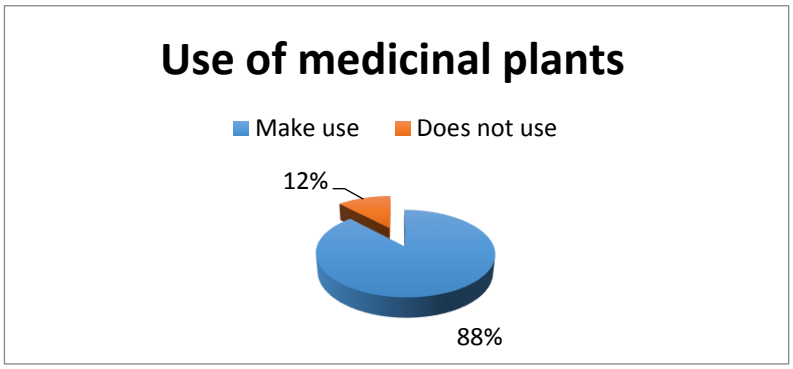

Figure1: Use of medicinal plants reported by students.

This demonstrates the close relationship of students with medicinal plants and even being in the gym, they recognize popular knowledge as useful and valid. The leaf is the most used part and the main mode of preparation is the tea. Medicinal plants were distributed in 22 families and 34 species (Table 1).

Table 1. Relationship of species of medicinal use reported by students and relative value of agreement for main uses, Cuiabá, MT, 2018

Scientific Name / Family	Vernacular name	NC	Use indication	Part of the plant	Form of preparation	Fsp	Fid	NF	FC	Pcup(%)
Amaryllidaceae										
Allium sativum L.	Alho	3	Bug	Bulb	Tea	3	2	67	0,23	15
Amaranthaceae										
Alternanthera brasiliana (L.) Kuntze	Terramicina	1	Cicatrization	Leaves	Tea	1	1	100	0,08	8
Anacardiaceae				Leaves	Tea					
Anacardium occidentale L.	Caju	1	Cicatrization	Bark	Tea	1	1	100	0,08	8
Apiaceae										
Pimpinella anisum L.	Erva doce	1	Calmative and tranquilizing	Leaves	Infusion	1	1	100	0,08	8
Asteraceae										
Matricaria reticulita L.	Camomila	1	Calmative, headache	Inflorescence	Tea	1	1	100	0,08	8
Acmella oleracea (L.) RK Jansen	Jambú	1	Anemia	Leaves		1	1	100	0,08	8
Piptocarpha rotundifolia (Less.)	Paratudo	1	Cicatrization	Bark	Tea	1	1	100	0,08	8
Solidago chilensis Meyen	Arnica	1	Diuretic	Inflorescence, leaves	Tea	1	1	100	0,08	8
Annonaceae										
Annona squamosa L.	Fruta do conde	1	Laxative	Rhizome	Tea	1	1	100	0,08	8
Fabaceae										
Medicago sativa L.	Alfava	1	Anxiety	Inflorescence, leaves	Infusion	1	1	100	0,08	8
Lamiaceae										
Melissa officinalis L.	Erva-cidreira	4	Calmative	Leaves	Tea	6	6	100	0,15	15
Mentha villosa Huds	Hortelã	6	Digestion	Leaves	Tea	6	6	100	0,46	46
Ocimum basilicum L.	Manjericão	2	Sore throat	Leaves	Tea	2	2	100	0,15	15
Plectranthus barbatus Andrews	Boldo	13	Digestive problems, headache	Leaves	Tea	13	9	69	1,00	59
Rosmarinus officinalis L.	Alecrim	2	Cough, flu, sore throat	Leaves	Tea	2	1	50	0,15	8
Loganiaceae										
Strychnos pseudoquina A. St. -Hil.	Quina	1	Anti-inflammatory	Bark	Tea	1	1	100	0,08	8
Malvaceae										
Hibiscus sabdariffa **L.**	Hibisco	1	Diuretic	Inflorescence	Tea	1	1	100	0,08	8

Malva sylvestris L.	Malva Branca	1	Mouth ulcers	Leaves	Tea	1	1	100	0,08	8
Gossypium hirsutum L.	Algodão	2	Urinary infection	Leaves	Tea	2	1	50	0,15	8
Malpighiaceae										
Malpighia glabra L.	Acerola	1	Weight loss	Leaves	Tea	1	1	100	0,08	8
Melastomataceae										
Miconia albicans (Sw.) Steud.	Canela de Velho	1	Arthrosis	Leaves	Tea	1	1	100	0,08	8
Moraceae										
Dorstenia arifolia Lam.	Carapia	1	Bronchitis	Bark	Tea	1	1	100	0,08	8
Morus nigra L	Amora	2	Hormonal control	Leaves	Tea	2	2	100	0,15	15
Myrtaceae										
Psidium guajava L.	Goiaba	2	Dysentery	Leaves	Tea	2	2	100	0,15	15
Plantaginaceae										
Plantago major L.	Tansagem	1	Anti-inflammatory	Leaves	Tea	1	1	100	0,08	8
Poaceae										
Cymbopogon citratus (DC.) Stapf	Capim Cidreira	6	Diuretic	Leaves	Tea	6	4	67	0,46	31
Lythraceae										
Punica granatum L.	Romã	1	Sore throat	Fruit bark	Tea	1	1	100	0,08	8
Rutaceae			Anxiety	Leaves	Tea					
Citrus sinensis L. Osbeck	Laranja	2	Calmative, sore throat	Leaves	Tea	2	2	100	0,15	15
Citrus limon (L.) Osbeck	Limão	1	Calmative, sore throat	Leaves, fruit bark	Tea	1	1	100	0,08	8
Simaroubaceae										
Quassia amara L	Pau de Tenente	1	Infections and inflammations	Leaves	Tea	1	1	100	0,08	8
Adoxaceae										
Sambucus nigra L.	Sabugueiro	1	Flu	Leaves	Tea	1	1	100	0,08	8
Asphodelaceae										
Alloe vera (L.) Burm f.	Babosa	7	Gastritis	Leaves	Juice	7	3	43	0,54	23
Zingiberaceae										
Zingiber officinale Roscoe	Gengibre	4	Sore throat	Rhyzome	Tea	4	2	50	0,31	15

NC: Citation number; Fsp = Absolute frequency; Fid = Number of informants who use a species for a higher purpose; NF = Loyalty level; FC = correction factor; Pcup (%) = Relative frequency of agreement for main uses; NI = No use reference / use / non-informed citation.

The *Plectranthus barbatus* (Boldo) and the *Mentha Villosa* (Mint), were the species that received the highest Percentage of Use Agreement (Pcup) with 59% and 46%, which shows that these species are widely used by deponents.

The species *Plectranthus barbatus* belonging to the family Lamiaceae popularly known as boldo-common or boldo-do-brasil, is originally from India being widely cultivated throughout Brazil, with utilities in folk medicine and as a herbal remedy, for its analgesic and anti-dyspeptic properties (CARRICONDE et al., 1996). Costa (2006) reports that *P. barbatus* is one of the most cited plants in ethnobotanical surveys of medicinal plants in Brazil, for which many studies aimed at detecting pharmacological actions were developed. The use of boldo for treating liver diseases and digestion problems has its effect proven by experimental tests, but the chemical constituents identified in the essential oil have not been thoroughly studied because they are commercially infeasible and are very difficult to extract in reasonable quantities for pharmacological tests (PILLA et al., 2001). In the present study, boldo tea is indicated against digestive problems and headache. The phytochemical analysis records the presence of barbatusine, cyclobarbatusine, carocal, as well as tripertenoids and steroids. It can be used to treat gastritis, dyspepsia, heartburn, gastric discomfort (LORENZI and MATOS, 2002).

Ethnopharmacological studies have reported that plants of the genus *Mentha* L. (Lamiaceae) have antiparasitic activity, including *Mentha villosa* Huds., Popularly known as common mint, peppermint, leafminer or mentrasto (RADÜNZ, 2004). It has been reported the use of this species against amebiasis, giardiasis, urogenital trichomoniasis and schistosomiasis, among other pharmacological activities (SOUSA et al., 1997, MONTE & OLIVEIRA, 2001, LAHLOU et al., 2002). The addition of milk to the crushed leaves of *M. villosa* is used for the treatment of verminoses in children (MEDEIROS et al., 2004). Some authors have detected the presence of piperitenone oxide (rotundifolone) as a major constituent in the essential oil of *M. villosa*. However, it was not possible to determine if this would be the component that acts as its antiparasitic active ingredient (RADÜNZ, 2004; ARRUDA et al., 2006; MARTINS et al., 2007).

The botanical families that presented the highest number of species were Asteraceae (5 spp.) And Lamiaceae (4 spp) (Figure 2). Similar results were found in the paper entitled "Medicinal plants in the Passage of Conception community, Mato Grosso, Brazil (FIEBIG; PASA, 2018). DA VILA-PEREIRA (2016) also carried out a study on the use of medicinal plants used in Horto Florestal de Cuiabá - MT, where it obtained the same results.

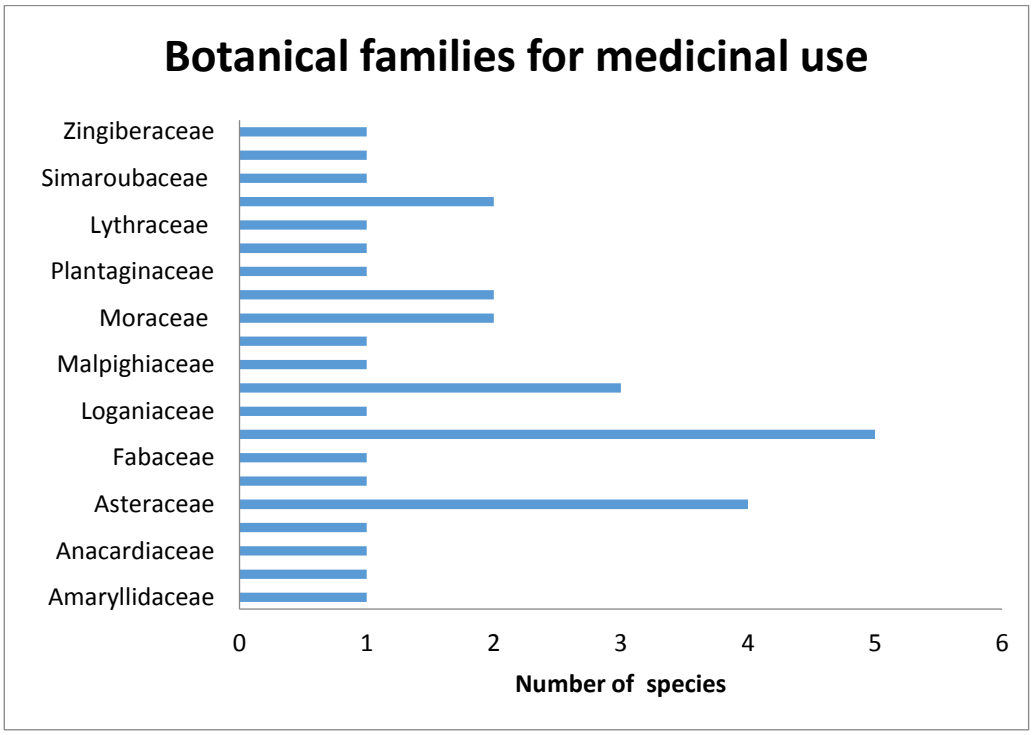

Figure 2- Families and number of species of medicinal use cited by UFMT students.

According to Paulino *et al*. (2011), by using the natural resources normally grown in property backyards, students save and at the same time contribute to the conservation of genetic resources by making the yard a laboratory for their experiments.

In the gym they learn the safe forms of administration and the preventive measures one should take with medicinal plants.

FINAL CONSIDERATION

The research showed that students have a certain degree of knowledge about the use of medicinal plants and that it is disseminated in the family environment.

The students' problematization of popular knowledge and scientific knowledge is of great importance and can also be done through discussions based on literary revision of the species that are used by them.

This would place the student in the face of academic knowledge about the active principles, uses, management, as well as other issues raised by the amplitude within the ethnobotanical context and its multiple uses.

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