POPULAR USE OF MEDICINAL PLANTS OF CANTON JIPIJAPA, ECUADOR

USO POPULAR DE PLANTAS MEDICINALES DEL CANTON JIPIJAPA, ECUADOR

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ABSTRACT

The medicinal plants of the Canton Jipijapa represent one of the most diverse and valuable resources of the region, by possessing healing and nutritional benefits used in the daily living of man, most are used for therapeutic, aromatic and Medicinal Regulated by the traditional knowledge, habits, customs and life forms typical of the culture, which respond to a complementary relationship between man and nature, which is found in orchards of the peasants and forests of the area. The objective was to make an inventory of uses of the medicinal species existing in the Canton Jipijapa and propose a design of gardens for the conservation and sustainable use of medicinal plants. For this, plant and survey collections were conducted for seventy families, five healers, and the presidents of the 10 communities. The information was processed and documented with herbal visits and bibliographic review. The results show a richness of 117 medicinal plants that are used to cure various malconditions, which are grouped in 51 botanical families in which the herbaceous and arboreal prevail. Mostly the leaves are used in cooking to make the medicines. It is concluded that the knowledge of the use of the plants comes mainly from the peasants and in publications of ethnobotanical studies, show that the medicinal species are recommended to alleviate many diseases of the humanity.

Key words: medicinal species, communities, deforestation, pollution, conditions.

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RESUMEN

Las plantas medicinales del cantón Jipijapa representan uno de los recursos más diversos y valiosos de la región, por poseer bondades curativas y alimenticias utilizadas en el diario vivir del hombre, la mayoría son empleadas con fines terapéuticos, aromáticos y medicinales; regulados por el conocimiento tradicional, hábitos, costumbres y formas de vida propias de la cultura, que responden a una relación complementaria hombre - naturaleza, la misma que se encuentra en huertos de los campesinos y bosques de la zona. El objetivo fue realizar un inventario de usos de las especies medicinales existentes en el cantón Jipijapa y proponer un diseño de jardines para la conservación y uso sostenible de las plantas medicinales. Para esto se realizaron colectas de plantas y encuestas que fueron dirigidas a setenta familias, cinco curanderas, y los presidentes de las 10 comunidades. La información se procesó y se documentó con visitas a herbarios y revisión bibliográficas. Los resultados muestran una riqueza de 117 plantas medicinales que se emplean para curar diversos malestares, que se agrupan en 51 familias botánicas en las que prevalecen las herbáceas y arbóreas. En su mayoría se usan las hojas en cocimientos para elaborar los medicamentos. Se concluye que el conocimiento del uso de las plantas proviene principalmente de los campesinos y en publicaciones de estudios etnobotánicas, muestran que las especies medicinales son recomendadas para aliviar numerosas afecciones de la humanidad.

Palabras claves: *especies medicinales, comunidades, deforestación, contaminación, afecciones*

INTRODUCTION

Plants have been a fundamental resource for the peasant and indigenous communities of our country. It is estimated that 80% of the Ecuadorian population depends on the traditional medicine and therefore of the plants or natural products, for the primary care of the health and well-being (Buitrón, 1999). Many people in the field still depend directly or indirectly on the plants to meet their food, medicine and housing needs.

In the cities the direct use of medicinal plants is less and mainly relegated to people living in urban-marginal areas and low socioeconomic status. However, the use and trade of medicinal plants is maintained as an active practice in the markets of Ecuadorian cities and particularly in the towns of the inter-Andean alley, where at least 273 species of herbs are expended m Edicinales, same that are used to treat more than 70 ailments (Cerón, 2006).

In rural communities, medicinal plants are used for the cure of different dispossessions, a use that is associated with the presence of healers, many of whom have a deep knowledge of herbal (Casas et al., 2001). Today, medicinal plants are threatened by the deterioration of the

environment caused by factors such as: deforestation, pollution, expansion of the agricultural frontier, among others, which exacerbate the ecological conditions where thousands of Species with medicinal potential (Hernández, 2008). . In Latin America, countries such as Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela have been defined as mega-diverse, as they gather approximately 25% of the world's biodiversity in their territories. This represents a significant set of raw materials for the discovery of new pharmaceutical products (Baquero *et al*., 2009).

In Ecuador, it was determined the existence of 5 172 useful plants of which 3 118 are used medicinally (de la Torre et al., 2008). The plants of the Sierra are the best known and demanded; an example of this is the Ambato market where 245 medicinal plants that correspond to native species of the South American Andes are collected, distributed and marketed. (Buitrón, 1999).

The study of medicinal plants used in the Canton Jipijapa is essential, the information will allow to know that symptoms and malconditions are treated, which plants are used, how to prepare and use them. The information collected will serve to provide alternatives in the cure or treatment of diseases to a greater number of people.

There are currently many types of gardens of aromatic and medicinal plants, the shape, size, location, quantity of plants, the association of the same, the colors, aromas, in short, the design that is proposed of the orchard, depends on delights, creativity and NE Needs or preferences. Consequently, the objectives of this research were to make a ethnobotanical inventory of the medicinal species cultivated in the gardens of the Canton Jipijapa; b) To know the use of medicinal plants of a sample of population C) propose a garden design of medicinal species for sustainable use, conservation and decorative.

MATERIALS AND METHODS

STUDY AREA

This research was carried out in the Jipijapa canton in the gardens and/or orchards of the urban parishes: San Lorenzo de Jipijapa, Dr. Miguel Morán Lucio and Manuel I. Parrales and Guale. Rural: America, El flooded, Julcuy, La Unión, Membrillal, Pedro Pablo Gómez and Puerto Cayo.

METHODOLOGY USED

The study population was chosen through the random number method (Mendenhall and Sincich 1979). For this method it was necessary to count the number of houses in each of the parishes, as well as a location scheme.

Seventy families, five healers and the presidents of the ten parishes were surveyed, a questionnaire was used (general data), the agreements and commitments to carry out the investigation, the gardens and/or orchards that made parts of the sample Chosen.
In conducting the research was necessary to consult bibliographic material related to traditional medicine, ethno botanical studies, to achieve good documentation, libraries were visited universities including State University Of the south of Manabí, botanical Garden of the Technical University of Manabí, visited the orchards and/or gardens of the houses that were selected, during each visit the objectives and scope of the investigation were exposed, the survey was carried out and they were made Botanical collections. These collections included data, common name of species, applications, plant uses, and physiological form among others.

This research describes the plants that the informants stated used to cure ailments, long in the area. After the collection of botanical specimens, medicinal species were determined and identified and supplemented with bibliographic review of the uses of these plants (in books and databases), including (Suatunce y Torres, 1998) (Lojones, 2006) In order to obtain methodologies used for the realization of the same ones.
Upon completion of surveys in each garden and/or orchards and identified botanical specimens collected, information was processed. A list of medicinal plant species cultivated in the gardens and/or orchards of the parishes of the Jipijapa Canton was prepared, which includes data from the botanical family to which it belongs, scientific name, common name and biological form. Subsequently, the conditions of the participating communities were evaluated, defining the following specific criteria for the correct choice of the place where the botanical garden design will be established: a) the availability of the owners of the property , to designate the necessary surface for the establishment of the garden and to ensure that there will be no change in the use of this terrain, B) the availability of water, c) internal organization and D) potential economic utilization of plants in the community.

RESULTS AND DISCUSSION

In tables 1, 2, 3 and 4, the medical plants registered through collections and surveys are presented, as well as the botanical description of the same. We found 117 species grouped in 51 botanical families, among which they Excel: Asteraceae : (10), Lamiaceae (13), Fabaceae (3), Malvaceae (4), Rutaceae (4), Piperaceae (5), and Solanaceae (7), Apiaceae (4), Labiatae (4) which varied between three and thirteen species per family. They follow it, in descending order, with two species per family Euphorbiaceae, Apocynaceae, Amaranthaceae, Begoniaceae, Bignoniácea. The remaining families are represented with only one species. According to the interviews, these species are attributed curative properties for a large number of diseases such as: digestive, diuretic, diarrhea, biliary colic, anemia, cholesterol,

arthritis, menstrual cramps, snake bite, malaria, Kidneys, varicose veins, liver diseases, heal wounds, ulcers, nerves, tonic seat baths, fever, diabetes, anti-inflammatory, antirheumatic, analgesic, obesity, cough, amebic dysentery, sedative, bad air, eye, dermatological, earache , toothache, antiparasitic, Burn, among others.

Table 1: Common names, scientists, families and biological form of medicinal plants found in the urban and rural parishes of the Jipijapa Canton, Manabí.

ID	Family	Scientific name	Common name in Spanish	Biological form in Spanish
1	Apiaceae	*Apium sp*	Apio	Herbácea
2	Apiaceae	*Coriandrum sativum*	Cilantro	Herbácea
3	Apiaceae	*Foeniculum vulgare Mill*	Hinojo	Herbácea
4	Apiaceae	*Eryngium foetidum L.*	Perejil	Herbácea
5	Araceae	*XanthoPsoma sanguitifolia*	Camacho	Herbácea
6	Amaryllidaceae	*Polianthes tuberosa*	Vara de la justicia	Herbácea
7	Asteraceae	*Ambrossia cumanensis H.B.K*	Altamisa	Herbácea
8	Asteraceae	*Artemisia absinthium L*	Ajenjo	Herbácea
9	Asteraceae	*Calendula officinalis L*	Caléndula	Herbácea
10	Asteraceae	*Matricaria chamomilla L.*	Manzanilla	Herbácea
11	Asteraceae	*Taraxacum officinale Weber*	Diente de León	Herbácea
12	Asteraceae	*Baccharis latifolia*	Chirca o chilca	Herbácea
13	Asteraceae	*Heterotheaca inuloides*	Árnica.	Herbácea
14	Asteraceae	*Dahlia spp*	Dahlia	Herbácea
15	Apocynaceae	*Hoya carnosa*	Flor de porcelana	Herbácea
16	Apocynaceae	*Vallesia glabra*	Perlillo	Arbusto
17	Acanthaceae	*Thumbergia alata Bojer*	Hierba de espanto	Herbácea
18	Amaranthaceae	*Aerva sanguitifolia*	Discancel	Herbácea
19	Acrostichaceae	*Adiantum sp*	Envidia	Herbácea
20	Aristolochiaceae	*Aristolochia pilosa*	Zaragoza	Trepadora
21	Annonaceae	*Annona muricata*	Anona	Arbusto
22	Begoniáceae	*Begonia semerflorens*	Begonia	Herbácea
23	Begoniaceae	*Begonia cucullata*	Periquito	Herbácea
24	Bignoniaceae	*Jacaranda mimosifolia*	Jacaranda	Arbusto

25	Bignoniaceae	*Tabebuia rosea Sw*	Guayacán rosado	Árbol
26	Burseraceae	*Bursera graveolens*	Palo santo	Arbusto
27	Bixaceae	*Bixa orellana*	Achiote	Arbusto
28	Chenopodiaceae	*Chenopodium ambrosioides L*	Paico	Herbácea
29	Cactaceae	*Hylocereus undatus*	Pitahaya	Arbusto
30	Caricaceae	*Carica Pubescens*	Papaya de mico	Arbusto
31	Crassulaceae	*Kalanchoe pinnata*	Siempre viva	Herbácea
32	Crassulaceae	*Bryophyllum pinnatum*	Espíritu santo	Herbácea
33	Cucurbitaceae	*Momordica charantia L*	Achochilla	Trepadora
34	Cucurbitaceae	*Luffa cylindrica M. Roem*	Estropajo	Trepadora
35	Compositae	*Vernonia baccharoides*	Chilca	Arbusto
36	Compositae	*Tagetes sp*	Flor amarilla	Herbácea
37	Compositae	*Tagetes Patula L*	Ruda de gallinazo	Herbácea
38	Euphorbiaceae	*Jatropha curcas*	Piñón	Arbusto
39	Euphorbiaceae	*Euphorbia leucocephala*	Flor de niño	Arbusto
40	Euphorbiaceae	*Higuera Ricinus communis L*	Higuerilla	Árbol
41	Fabaceae	*Cassia fístula L*	Caña fístula	Árbol
42	Fabaceae	*Tamarindus indica L*	Tamarindo	Árbol
43	Fabaceae	*Miroxilum balsamum*	Bálsamo	Árbol
44	Geraniáceae	*Geranium*	Geranio	Herbácea
45	Geraniaceae	*Pelargonium sp*	Geranio	Herbácea
46	Gramineas	*Zea mays*	Maíz	Herbácea
47	Labiadas	*Mentha sativa*	Hierba buena	Herbácea
48	Labiatae	*Rosmarinus offcinalis*	Romero.	Herbácea
49	Labiatae	*Thymus vulgaris thymoliferum*	Tomillo.	Herbácea
50	Labiatae	*Menta viridis*	Menta de palo	Herbácea
51	Lamiaceae	*Mentha pipperita L.*	Hierbabuena	Herbácea
52	Lamiaceae	*Menthas s*	Menta	Herbácea
53	Lamiaceae	*Origanum vulgare L*	Orégano	Herbácea
54	Lamiaceae	*Salvia palaefolia H.B K*	Mastranto	Herbácea
55	Lamiaceae	*Mellisa officinalis, L*	Toronjil	Herbácea
56	Lamiaceae	*Cymbopogon citratos (DC) Staff*	Hierba luisa	Herbácea
57	Lamiaceae	*Mentha suaveolens*	El mastranto	Herbácea
59	Lamiaceace	*Verbena litorales L*	Verbena	Herbácea

60	Lamiaceae	*Mentha spicata*	Hierbabuena	Herbácea
61	Lamiaceae	*Mentha rotundifolia*	Menta blanca	Herbácea
62	Lamiaceae	*Ocimum basilicum*	Albahaca	Herbácea
63	Lamiaceae	*Ocimun tenuiflorum*	Albahaca morada	Herbácea
64	Liliaceae	*Aloe de vera*	Sábila	Herbácea
65	Liliaceae	*Schoenorasum L*	Cebollín	Bulbo
66	Liliaceae	*Allium cepa*	Cebolla	Bulbo
67	Lauraceae	*Persea americana mILL*	Aguacate	Árbol
68	Lythraceae	*Púnica granatum L*	Granada	Arbusto
69	Leguminosae	*Vigna sp*	Chupa chupa	Herbácea
70	Leguminosae	*Cajanus cajan*	Frejol palo	Arbusto
71	Malvaceae	*Malva silvestri L*	Malva	Herbácea
72	Malvaceae	*Theobroma cacao*	Cacao	Arbusto
73	Malvaceae	*Hibiscus rosasinensis*	Crespón	Arbusto
74	Malvaceae	*Hobiscus rosa sinensis L.*	Tulipán	Arbusto
75	Myrtaceae	*Psidium guayaba*	Guayaba	Arbusto
76	Myrtaceae	*Pimenta racemosa*	Bayrum	Árbol
77	Mimosaceae	*Inga feuilleei*	Guaba	Arbusto
78	Monimiaceae	*Peamus boldus*	Boldo	Herbácea
79	Nyctaginaceae	*Bougainvillea glabra*	Flor de verano	Arbusto
80	Oleáceae	*Jasminum officinale*	Jazmín.	Arbusto
81	Plantaginácea	*Plantago major L*	Llantén	Herbácea
82	Papaveraceae	*Argemone mexicana L*	Cardo santo	Herbácea
83	Poligonáceas	*Rumex acetosa L*	Lengua de vaca	Herbácea
84	Polipodaceas	*Adiantum capillus*	Cilantro de pozo	Herbácea
85	Piperaceae	*Piperomia sp*	Congona	Herbácea
86	Piperáceae	*Piper adumcum*	Matico	Herbácea
87	Piperaceae	*Piper peltata*	Santa maría	Herbácea
88	Piperaceae	*Piper sp*	Cordoncillo	Herbácea
89	Piperaceae	*Peperomia pellucida (L)*	Espanto de agua	Herbácea
90	Phytolaceae	*Petiveria alliaceae*	Zorilla	Herbácea
91	Portulacaceae	*Portulca oloraceae L*	Verdolaga	Herbácea
92	Rutaceae	*Ruta graveolens L*	Ruda	Herbácea
93	Rutaceae	*Citrus paradisii*	Toronja	Árbol
94	Rutaceae	*Citrus limón*	Limón	Árbol
95	Rutaceae	*Citrus aurantium L*	Naranja agria	Árbol
96	Rosaceae	*Rosa damascena*	Rosa	Herbácea

97	Solanaceae	*Solanum melogena*	Berenjena	Herbácea
98	Solanaceae	*Acnistrus arborescens*	Cojojo	Arbusto
100	Solanaceae	*Capsicum annuum*	Ají	Arbusto
101	Solanaceae	*Atropa belladonna*	Belladona	Herbácea
102	Salonaceae	*Nicotiana tabacum L*	Tabaco	Arbusto
103	Solonaceae	*Solanum quitoense*	Naranjilla (lulo)	Herbácea
104	Urticaceae	*Urtica urens L*	Ortiga	Herbácea
105	Urticaceae	*Urtica dioica*	Ortiga mayor.	Herbácea
106	Urticaceae	*Parietatia officinalis*	Buscapina	Herbácea
107	Umbeliferas	*Foeniculum vulgare*	Hinojo.	Herbácea
108	Umbeliferas	*Coriandrum sativum*	Culantro	Herbácea
109	Violaceae	*Hybanthus arviflorus*	Teatina	Herbácea
110	Violaceae	*Viola odorata*	Violeta morada	Herbácea
111	Valerianaceae	*Valeriana officinalis*	Valeriana	Herbácea
112	Verbenaceae	*Lippia graveolens Kunt*	Orégano	Herbácea
113	Verbenaceae	*Stachytarpheta jamaicensis (L)*	Verbena	Herbácea
114	Zingiberaceaes	*Costus spicatus*	Caña agria	Herbácea
115	Zingiberaceaes	*Zingiber officinalis*	Jengibre	Bulbo
116	Zingiberaceaes	*Renealmia lucida*	San Juanito	Herbácea
117	Zingiberaceaes	*Costus sp*	Caña agria	Herbácea

The survey conducted showed the use of 117 plants with medicinal properties, these are located in 51 families, of them, Apiaceae, Labiatae, Liliaceae Acanthaceae Lamiaceae, Rutaceae and Asteraceae, are the most represented with three and thirteen species each;; (Scull *et al.*, 1998) y (Toscano, 2006) Similar results were observed in Cuba. These species were attributed therapeutic properties plus 40 for different conditions, these results agree with those obtained by (Burgos and Morales 2010), with respect to the use or application of medicinal plants; especially in digestive or gastrointestinal, dermatological and respiratory conditions.

The most used species are Apiaceae, Labiatae, Liliaceae Acanthaceae, Lamiaceae, Rutaceae, Asteraceae, Rutaceae and Asteraceae. Most of the people surveyed obtain medicinal plants in the community and use them, usually to cure their mild ailment, coincided with (Gómez, 2012) Who observed, in a similar study conducted in Tabasco, Mexico, that 91% of the population of the locality resolves their ailments with medicinal plant recipes, but only go to the doctor when the affectation is very serious, or cannot control. It was found that women know more about the properties and uses of medicinal plants than men, 85.2% do not know the contraindications, toxicity, risks, as well as possible interactions with conventional

drugs, these results Coincide with studies carried out by (Almaguer, 2015), Which alleged the use of 38 species of medicinal plants, grouped in 25 families, 71% of the plants reported were cultivated in the vicinity of the houses, 65.9% of the people know a significant number of the properties and uses of medicinal plants , 56.8% exhibited at least one form or type of preparation of the plants identified. It was observed in the respondents the forms of preparation of the plants used to treat various types of diseases and symptoms, not all plants are prepared in the same way and the same plant can be prepared in several ways, 7 forms were identified Different preparation: Poultice and poultice, cooking, compress, salad, gargle or rinsing, infusion, juice, washing and vapors.

Of the species reported seven (7) are used to treat snake bites, and fourteen (14) for fright, scare, evil eye, which are the main causes of health losses in the area. The distance between the communities or parishes (Jipijapa) and the fact that there is still an area not accessible by land due to the lack of stable road, surely caused the healers to devote their main effort to seek and test the largest number of plants with virtues to treat poisonous bites. Eighteen (18) plants are also reported to treat the effects of shocks, inflammations, grains and skin conditions, sixteen (16) for curing digestive system ailments, ten (10) for respiratory system diseases, nine (9) for pains of Head and twelve (12) for nerves there are smaller groups for liver diseases, kidneys, intestinal parasites, external parasites, menstrual disorders and others. The ailments that are most present in this medium are bad air, water scare, fright, evil eye, and snake bites, inflammation of the kidneys, parasites, nerves, and digestive system and skin diseases.

80% of the population of the canton Jipijapa solves their ailments with medicinal plant recipes, although they only go to the doctor when the affectation is very serious, or they cannot control it. Women presented a more solid knowledge about medicinal plants, which coincides with (Rodríguez, et al. 2009), which suggested that women are the most active participants in the preparation and application of natural medicine and Traditional.

It is important the number of respondents who do not know the contraindications, risks or interactions with conventional medicines for the use of plants, for the treatment of a condition or ailment. It has been argued that although in recent years, the consumption of medicinal plants has undergone a notable increase and has been demonstrated its efficacy in the treatment of certain pathologies, there is by the population the erroneous perception of the safety of these products.(Tres, 2006). In addition, it has been pointed out that in developed countries such as the United States of America, more than 60% of the elderly who consume herbal products or naturists do not inform their physicians of their consumption as harmless, which constitutes a Health-Relevant risk (Hoblyn et al., 2005) It is very likely that this problem is also present in Ecuador

It was considered that the inhabitants of the parishes of the Canton Jipijapa, have empirical knowledge of the use of plants with medicinal properties. Despite this, it is necessary to disseminate and educate the population regarding the properties of medicinal plants, forms of preparation, contraindications, toxicity or interactions with conventional drugs that can have an impact Positive perception and management that they could make of them, which coincides with (Vargas et al, 2011). To promote the cultivation of medicinal plants in the communities ' patios, contributes to the sustainable development of the community itself, and to the awareness and awareness of the population by the protection of the environment, which coincides with (Escalona et al, 2015).

The design that is formulated constitutes an alternative applicable to the community and takes the expectation of production of medicinal plants. This design is released for free modification or adaptation according to the conditions of the reality of the orchards and/or garden, varying its shape, size or distribution. This spiral-shaped design is constructed by selecting a space of approximately 2 m in diameter and making spiral quarries that are delimited by stones or area material and filled with fertilized soil until reaching approximately 4 levels or floors that reach a total height of about 1 m high. In these spirals are sown almost all the plants that are needed. The plants are located according to the botanical configuration of each one of them, taking into consideration their height, which provide shade on the other and other characteristics.

CONCLUSIONS

- The estimated richness in the garden and/or orchard of the parishes of the Canton Jipijapa Manabí is of 51 families, 117 species medicinal plants, the vulgar names helped in the identification of the plants in the studied communities, because the population does not know the scientific name of the plants.
- The most representative species per family were: Asteraceae (10), Lamiaceae (13), Fabaceae (3), Malvaceae (4), Rutaceae (4), Piperaceae (5), Solanaceae (7), Apiaceae (4), Labiatae (4). They follow it, in descending order, with two species per family Euphorbiaceae, Apocynaceae, Amaranthaceae, Begoniaceae, Bignoniácea. The remaining families are represented with only one species. By biological type 75% are herbaceous, 12% shrubs, 8% tree, 2% climbers and 3% bulb.
- Ancestral knowledge comes from the older adult with 47%, followed by parents with 20%, children and neighbors 27%, and the rest of other sources. Most plants grow in the community itself.
- 80% of the plants identified, were cultivated in the orchards, courtyards of the houses, sown in pots or gardens, the remainder were distributed in the farm or around the house with spontaneous evolution.

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