Original Article

Trends in Pharmaceutical Sciences 2015; 1(1): 39-43

Ethnopharmacological review of plants traditionally used in Darab (south of Iran)

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Abstract

Ethnopharmacological and ethnobotanical information have been known as effective tools for drug discovery. Iran is a location with long medical history. Darab is one of the cities in Iran which can be important in regard of ethnopharmacological aspects. Current paper documented the folk medical information by Darab inhabitants. Therefore, field studies on this area were conducted from March to July 2012 and May to July 2013 under supervision of one local person. A questionnaire was utilized in this study and was filled by local inhabitants. In total, 58 species belonging to 27 plant families were documented in management of 53 ailments. The most cited plant family was *Asteraceae* which was followed by *Apiaceae*, *Lamiaceae* and *Papilionaceae*. Herbs were applied for gynecologic and genitourinary, respiratory, central nervous system, infectious and cardiovascular ailments as well as musculoskeletal and skin disorders, respectively. This study can indicate the folk knowledge of a region in south of Iran. Moreover, the effectiveness of unexamined plants can be evaluated according to informants' claims. Therefore, such investigations may be indeed, a useful way to search for drug discovery as well as keeping ethnopharmacological information alive.

Keywords: Ethnopharmacology, Ethnomedicine, Iran, Medicinal plants.

1. Introduction

Throughout the world, ethnopharmacological and ethnobotanical information have been known as an effective tool for drug discovery (1). This fact is due to the importance of plants and medicinal herbs in various human cultures, as they used plants for feeding, sheltering and nursing (2). Actually, plant biodiversity plays an important role in these aspects. In this regard, collection, identification and assessing the diversity of medicinal plants can be beneficial for drug discovery (3).

Having unique situation in ethnopharmacology and ethnomedicine, Iran is often mentioned as a location with long history of medical culture. Scholars such as Rhazes and Avicenna dedicated large information on the application of herbal medicine in concerned disorders (4,5). In addition to the historical background, Iran is known with rich plant resources with various numbers of herbs (6). Up to the time being, investigations have been performed on Persian traditional and folk medicine in some parts of this country (7,8).

However, none of these reports focused on the center and south of Iran specially Fars Province. Providing an area of 122,400 km², Fars is one of the largest provinces of Iran (9). Darab is one of the Fars cities that can be studied regarding the ethnopharmacological aspects. The pure and native ethnomedical knowledge of such areas may be in danger of being lost due to the migration from rural areas to urban origins and lack of data transition from seniors to the younger people. The current paper aimed to collect and document the information about medicinal plants of Darab and those applications by indigenous inhabitants and traditional practitioners.

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Received: 14/02/2014; Accepted: 17/08/2014

2. Material and methods

2.1. An overview of the geographic profile, climate and vegetation of Darab

Two hundred and seventy kilometers far from Shiraz (Capital of Fars Province), Darab county has a total area of 11000 km², cultivable land which is located in the south east of Fars central part (10).

This city is geographically situated between longitude 54' 55° N 53' 55° E and latitude 28' 20° to 29' 10° N. This county has warm days in summer with 38-46°C temperature and moderate winters (15-25°C). Two cities, 3 districts, 12 rural districts and 297 villages are related to Darab (11).

Average of yearly rainfall in Darab is nearly 300 mm (10). Citrus, corn and cotton as well as wheat and barley are known as main products of this city and more than 60% of active inhabitants of this county work in agricultural section (11).

2.2. Plants collection and related information

To gather the information about traditional application of medicinal plants in Darab, field studies on parts of this area were conducted from March to July 2012 and May to July 2013 under supervision of one local person as a native guide in all visits. A suitable questionnaire was also prepared for this study (Appendix 1). Questionnaires were filled by local inhabitants and raw data were collected for further analysis.

On the other side, herbs related to each questionnaire were collected and dried under appropriate conditions and kept in a container to be transferred to Shiraz School of Pharmacy. Each sample was then identified regarding to different floras of Iran (12-15) and deposited in Herbaria of Shiraz School of Pharmacy with a specified voucher number.

3. Results

Taken as a whole, 58 species belonging to 27 plant families were documented in the management of 53 ailments. All the information about vernacular name, diseases/ therapeutic use, part used, preparation method obtained from the respondents are represented in Table 1. In addition, information of scientific names of plants and respective families are also added to the table. According to the reports, the most cited plant families were defined as *Asteraceae* which was followed by *Apiaceae*, *Lamiaceae* and *Papilionaceae*. Plant parts which were used for preparation of the remedies were mainly leaves, fruits, seeds, aerial parts, twigs, flowers, roots and gummy composition. Methods for preparation and application of remedies were decoction, infusion, inhalation, maceration and cooked as well as raw and fresh juices (Figure 1).

4. Discussion

With reference to the geographical and rich plant resources, Iran can be introduced as a region with all necessary properties for ethnopharmacological researches (16). But unfortunately there are scant data about folk medical uses of plants in various points of Iran.

We believe that current study is the first to gather the folk information of natural healers and traditional practitioner in Darab restrict from Fars province (South of Iran). In this investigation, most of the informants were women who personally experienced the use of plants for certain medical approaches. Unfortunately, we did not remark the age of informants in this paper. It is usually considerable that age of traditional practitioners and folk healers is most likely related to the usefulness of obtained information. But, in this respect, large portion of applicable folk information may be disappeared in line with memory of aged informants (6).

Taken together, people in this county apply their herbal medicaments for gastrointestinal complication. Following this medical approach, herbs were applied for gynecologic and genitourinary, respiratory,

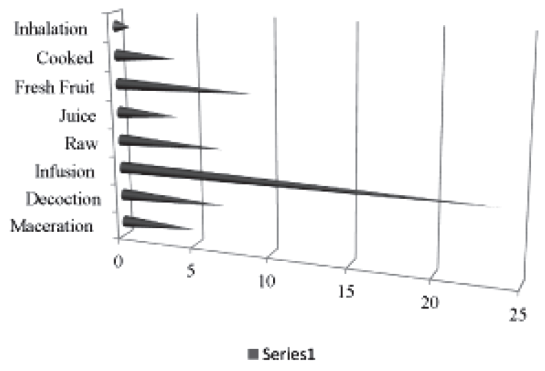

Figure 1. Citation of plants preparations.

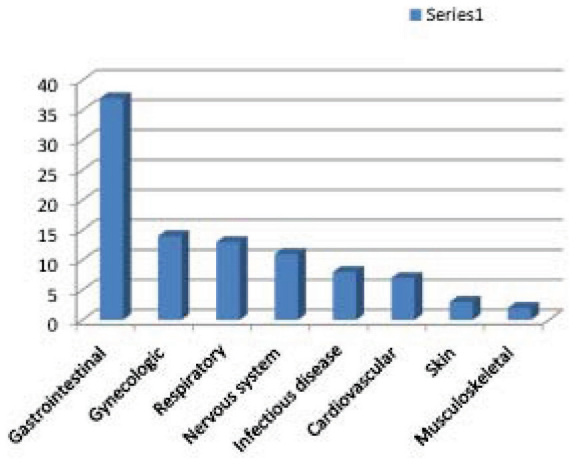

Figure 2. Analysis of folk applications of local herbs.

Table 1. Medicinal plant used in Darab region

No	Plant family	Scientific name	Local name	Voucher no.	Part(s) used	Administration/ Disease(s)	
1	*Adiantaceae*	*Adiantum capillus-veneris* L.	Par siavashan	425	Aerial part	Anti-cough, Expectorant	Maceration
2	*Amaranthaceae*	*Amaranthus* sp.	Taj Khoroos	431	Seed	Hypermenorrhea	Infusion
3	*Anacardiaceae*	*Rhus coriaria* L.	Somagh	444	Fruit	Appetizer, Diuretic/ Diarrhea, Hyperglycemia	Infusion
4	*Apiaceae*	*Petroselinum crispum* (Mill.) Nyman	Jafari	436	Aerial part	Aphrodisiac, Diuretic, Galactagogue, General tonic	Infusion
		Foeniculum vulgare Mill.	Razianeh	441	Leaf, Seed	Tonic for CNS/ Amenorrhea	Infusion
		Bunium persicum (Boiss.) B.Fedtsch.	Zireh	442	Seed	Astringent, Antiemetic, Antiseptic, Carminative, Diuretic	Raw
		Anethum graveolens L.	Shevid	447	Leaf	Carminative, Digestive/ Gastritis, Hiccup	Infusion
		Coriandrum sativum L.	Gheshneez	457	Leaf	Anthelmintic, Anticonvulsant, Appetizer, Carminative, Digestive, Diuretic	Infusion
5	*Arecaceae*	*Phoenix dactylifera* L.	Khorma	440	Fruit	Laxative, Tonic	Fresh fruit
6	*Asteraceae*	*Matricaria aurea* (Loefl.) Sch. Bip.	Babooneh	417	Aerial part	Antispasmodic, Carminative	Infusion
		Achillea eriophora DC.	Boomadaran	422	Leaf, Twig	Antipyretics/ Common cold	Maceration
		Echinops sp.	Shekartighal	445	Gum	Expectorant, Laxative	Infusion
		Cichorium intybus L.	Kasni	451	Aerial part	Laxative, Tonic, Analgesic/ Hyperglycemia	Decoction
		Lactuca sativa L.	Kahoo	453	Leaf	Laxative, Tranquilizer	Raw
		Artemisia dracunculus L.	Tarkhoon	433	Aerial part, Leaf	Analgesic, Appetizer, Tranquilizer	Infusion
7	*Boraginaceae*	*Cordia myxa* L.	Sepestan	443	Fruit	Demulcent, Diuretic, Expectorant, Laxative	Infusion
		Anchusa italica Retz.	Gavzaban	455	Flower	Diaphoretic, Tranquilizer/ Common cold	Infusion
8	*Brassicaceae*	*Raphanus Sativus* L.	Torob	432	Root	Analgesic/ Cough, Arthritis	Raw
		Descurainia sophia (L.) Webb ex Prantl	Khaksheer	438	Seed	Anti-inflammatory, Expectorant, Laxative	Decoction, Maceration
		Brassica oleracea L.	Kalam	454	Leaf	Laxative, Tonic/ Asthma	Cooked, Raw
9	*Chenopodiaceae*	*Spinacia oleracea* L.	Esfenaj	411	Leaf	Anemia	Cooked
		Bassia eriophora (Schrad.) Asch.	Maryam goli	461	Leaf, Twig	Alzheimer, Gingivitis, Hair loss	Infusion
10		*Convolvulus arvensis* L.	Pichake sahraii	430	Leaf	Cholagogue, Laxative	Infusion
11		*Citrullus vulgaris* Schrad.	Hendavaneh	465	Fruit	Anthelmintic, As a cooling agent/ Urolithiasis	Fresh fruit Juice
12		*Zataria multiflora* Boiss	Avishan	409	Leaf	Astringent, Expectorant/ Cough, Toothache	Infusion
		Mentha Longifolia (L.) Huds.	Pooneh	428	Leaf, Twig	Antipyretics/ Common cold	Infusion
		Ziziphora clinopodioides Lam.	Marzanjoosh	459	Leaf, Twig	Antidepressant, Tranquilizer/ Headache, Otitis	Infusion
		Satureja hortensis L.	Marzeh	460	Leaf, Twig	Antiseptic, Carminative, Diuretic, Tonic	Infusion
		Mentha Spicata L.	Na'na	464	Twig	Antiseptic, Carminative/ Cough	Infusion
13		*Aloe barbadensis* Mill.	Aloevera	408	Fruit	Antiseptic, Laxative, Skin proliferating agent in burns, cuts and wounds	Fruit fresh juice
		Allium cepa L.	Piaz	429	Fruit	Antiseptic, Anti-inflammatory, Aphrodisiac, Appetizer	Fresh fruit

14	*Malvaceae*	*Gossypium herbaceum* L.	Panbeh	426	Root, Seed	Demulcent, Expectorant, Laxative	Infusion
		Malva spp.	Panirak	427	Leaf	Skin proliferating agent	Maceration
15	*Moraceae*	*Ficus Carica* L.	Anjeer	415	Fruit	Demulcent, Laxative	Maceration
		Morus alba L.	Toote sefid	435	Fruit	Appetizer, Laxative	Fresh fruit
16	*Myrtaceae*	*Eucalyptus* spp.	Ocaliptus	412	Leaf	Antiseptic/ Common cold	Inhalation
		Myrtus communis L.	Moord	462	Leaf	Antiseptic/ Hyperglycemia	Infusion
17	*Papilionacea*	*Astragalus hamosus* L.	Eklilol malek	413	Twig, Seed	Analgesic, Carminative, Diuretic/ Varicose veins	Infusion
		Faba vulgaris Moench.	Baghela	420	Fruit	Antiseptic, Anti-inflammatory	Dry seeds
		Trigonella foenum – graecum L.	Shanbelileh	446	Leaf	Hypercholesterolemia, Hyperglycemia	Decoction, Infusion
		Glycyrrhiza glabra L.	Shirin bayan	448	Root	Laxative/ Cough, Peptic and duodenal ulcer	Decoction, Infusion
18	*Plantaginaceae*	*Plantago major* L.	Barhang	419	Aerial part, Leaf	Antipyretic, Anthelmintic, Astringent, Demulcent, Diuretic, Laxative	Decoction
19	*Poaceae*	*Zea mays* L.	Balal Zorat	421	Fruit	Tonic/ Hypercholesterolemia	Cooked
		Hordeum vulgare L.	Jow	437	Seed	Diuretic, Laxative, Tonic	Cooked
		Zea mays L.	Kakole Zorat	452	Flower	Antiseptic, Diuretic/ Urolithiasis	Infusion
20	*Portulacaceae*	*Portulaca oleracea* L.	Khorfeh	439	Aerial part	Cholagogue, Diuretic, Laxative/ Hypercholesterolemia	Raw
21	*Punicaceae*	*Punica granatum* L.	Anar	414	Fruit	Astringent, Cholagogue, Digestive, Diuretic	Fruit fresh juice
22	*Rhamnaceae*	*Zizyphus jujuba* Lam.	Onnab	450	Fruit	Antihypertensive, Demulcent, Laxative, Tranquilizer, Tonic	Decoction, Fresh fruit
23	*Rosaceae*	*Eriobotrya japonica* (Thunb.) Lindl.	Azgil	410	Fruit	Laxative	Fresh fruit
		Rosa moschata J. Herman	Nastaran	463	Flower	Astringent, As topical irrigation of wounds and burns	Decoction, Infusion
24	*Rutaceae*	*Citrus aurantium* L.	Bahar naranj	423	Flower	Tranquilizer	Infusion
		Citrus sinensis (L.) Osbeck	Porteghal	424	Fruit	Anticancer, Antipyretic, Tonic	Fruit fresh juice
25	*Solanaceae*	*Solanum melongena* L.	Bademjan	418	Fruit	Antihypertensive, Laxative/ Hypercholesterolemia, Hemorrhoid	Fresh fruit
		Physalis alkekengi L.	Kakanj	449	Fruit	Contraceptive, Diuretic, Laxative	Fresh fruit
		Lycopersicum esculentum Mill.	Goje farangi	458	Fruit	Analgesic, Tonic/ Arthritis, Oral ulcer	Fresh fruit
26	*Urticaceae*	*Urtica dioica* L.	Gazaneh	456	Leaf	Astringent/ Hyperglycemia	Infusion

central nervous system, infectious and cardiovascular ailments as well as musculoskeletal and skin disorders, respectively (Figure 2). The abundance of herbal application in gastrointestinal approach in our study is similar to some previous studies in Iran (6). From all cited medicinal plants, 54 species were reported to be useful for 2-6 ailments or medical aspects. *Coriandrum sativum* L. was remarked as the herb with highest medical approach (Table 1).

Many of the cited applications can be proven by current knowledge. Of those, effect of *Foeniculum vulgare* Mill. as a tonic for CNS (17), diuretic effect of *Coriandrum sativum* L. in animal models (18) and antihypercholesterolemic effect of *Trigonella foenum – graecum* L. (19) can be remarked.

With regard to the reports, following *Asteraceae* as the most cited family, Apiaceae, *Papilionaceae*, *Lamiaceae* were cited in the second degree. Families such as *Vitaceae*, *Convolvulaceae*, *Portulacaceae* and *Arecaceae* were determined as families with least

importance. This fact is generally related to the accessibility of respective families to the inhabitants in that origin.

Concerning the preparation method and part used, it was clarified that most applied preparation in Darab is infusion of herbal related parts in boiled water. This way of preparation is often mentioned as one of the easiest ways of extraction. On the other hand, most useful plant part was leaves of medicinal herbs which may be related to the type of preparation. From all parts used, only one report can be derived for gummy compositions. However, these herbal exudates were clinically applied from long times ago (20).

As a conclusion, the current study can briefly indicate the folk knowledge of a region in south of Iran, the knowledge that can be easily neglected and disappeared during transition from old to new generations. In addition, young people have less information on the harvesting as well as medical application of herb in surrounding locations. Other than the ethnobotanical aspects of this study, the effectiveness of unexamined plants can be evaluated according to the informants' claims to seek for a new drug. Therefore, such investigations may be in deed, a useful way to search for drug discovery as well as keeping the ethnopharmacological information alive.

5. Acknowledgement

This work was derived from Amir Davood Razavi thesis and was financially supported by School of Pharmacy, International Branch, Shiraz University of Medical Science, Shiraz, Iran (Project number: 91.22.B,P).

Conflict of Interest:

None declared.

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Appendix 1

1. Name
2. Age
3. Sex
4. Occupation
5. Degree of education
6. Address
7. Local names of the herb
8. Address of collection place
9. Date of collection
10. Collector's name
11. Collector's occupation
12. Herb's part used
13. Preparation
14. What are the diseases that herb is used for?
15. What are the accompaniment herbs? (If it exists)
16. Where does this knowledge arrive from?
17. What is the best time for collection?