

Full Length Research Paper

An ethnobotanical survey of medicinal plants used by indigenous people in Zangelanlo district, Northeast Iran

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A survey was conducted to document the ethnobotanical potential of Zangelanlo district during 2009 to 2010. The study was mainly focused on gathering information on traditional uses of plants from local peoples. Local inhabitants are extremely knowledgeable about the utilization of indigenous flora of the study area. The main uses of the herbal drugs were as febrifuge, anthelmintic and in digestive problems, jaundice, respiratory ailments, urinary diseases, skin diseases and diabetes. In this present investigation, 52 plants species belonging to 48 genera and 26 families were included. The major plant families which contributed in folk herbs included Lamiaceae (9 spp.), Asteraceae (8 spp.), Apiaceae (4 spp.) and Fabaceae (3 spp.). For each species, botanical name, vernacular name, used plant part(s) and medicinal uses are provided. The results of this survey indicated that the studied area is rich in medicinal plants to treat a wide spectrum of human ailments. Therefore, this work will also contribute for the search of new drugs and treatments.

Key words: Ethnobotany, medicinal plants, Lamiaceae, Asteraceae, Apiaceae, Fabaceae, Zangelanlo, Iran.

INTRODUCTION

Herbal remedies are the oldest form of health care known by mankind. Prior to the development of modern medicine, traditional medicine systems that have evolved over the centuries among various communities, were still maintained as a great traditional knowledge basis in herbal medicines (Mukherjee and Wahil, 2006). This knowledge has been passed on orally from generation to generation without any written document (Perumal Samy and Ignacimuthu, 2000) and is still retained by various indigenous groups around the world. During the last few decades there has been an increasing in the study of medicinal plants and their traditional use in different parts of the world (Lev, 2006). Today according to the World Health Organization reports, as many as 80% of the world's people depend on traditional medicine for their

primary health care needs. There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal spices for the treatment of various diseases (Azaizeh et al., 2003).

Ethnobotanical survey has been found to be one of the reliable approaches to drug discovery (Fabricant and Farnsworth, 2001). Several active compounds have been discovered from plants on the basis of ethnobotanical information and used directly as patented drugs (Carney et al., 1999). The extent of the knowledge of traditional medicine practice based on medicinal plants should be documented through botanical surveys. Botanical collection and documentation of the associated ethnobotanical knowledge should be carried out before such rich heritages are lost due to various anthropogenic and other natural causes. In addition, the conservation of ethnobotanical knowledge as part of living cultural knowledge and practice between communities and the environment is essential for biodiversity conservation (Martin, 1995). Some of this species are

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Handelia trichophylla (Schrenk) Heimerl is very rare in this area and is known only from one locality and consider being critically endangered (Amiri and Joharchi, 2010). The main focus of the present study is to ascertain the detailed information on the use of plants and their therapeutic practices among indigenous people of Zangelanlo district, Khorassan province, Iran.

MATERIALS AND METHODS

The district of Zangelanlo is situated in the Northeast of Iran between 37°13' to 37°27' north latitude and 59° 8' to 59° 35' east longitude belonging to the Irano-Turanien Plant Geography Region. The present data were collected on a field research carried out as a part of floristic and ethnobotanical studies during 2009 to 2010 (Amiri and Jabbarzadeh, 2010). A questionnaire was administered to the local people, through face to face interviews. About 8 villages around the area were visited and surveyed where interviews of about 27 local informants especially women were made. The questionnaire was administered only to people who had knowledge of medicinal plants. At the end of each interview, the participants were asked to show the researchers these wild plants in the field. Then, specimens of these plants were collected and identified. Specimens were identified by using various Floras (Rechinger, 1963, 2005; Assadi et al., 1988, 2008; Davis, 1965, 1985; Komarov, 1934, 1958) and consulting different herbal literature (Amin, 1991; Ghorbani, 2005; Hooper, 1937; Zargari, 1989, 1992). Data tabulated were plant name, botanical family, local name, used parts and plant uses (Table 1). The family plant names were listed in alphabetic order.

RESULTS AND DISCUSSION

During the survey, 52 herbs belonging to 48 genera and 26 plant families showed to present medicinal uses (Table 1). The families which contributed with species included as folk medicines were: Lamiaceae (9 spp.), Asteraceae (8 spp.), Apiaceae (4 spp.), Brassicaceae, Fabaceae and Malvaceae (3 spp.), Plantaginaceae and Scrophulariaceae (2 spp. each), while the remaining 18 families had only one medicinal species. Different parts of medicinal plant species were used by indigenous people of this area as medicine. For curing ailments, the use of aerial plant parts was higher (85%) than the underground parts (15%). Among the aerial parts, leaf was used in majority of cases (28 species). Leaves were used the most, constituting (25%) of the total uses. This was followed by fruits (19%), flowers (17%), roots (15%), seeds (12%), whole plants (8%), barks (2%) and gums (2%). Maximum use of leaves medicinal purpose indicates either these plants are easily availability or they may have strong medicinal properties. The main remedies used for treating the ailments in the studied area were: febrifuge, anthelmintic, digestive problems, jaundice, respiratory ailments, urinary diseases, skin diseases and diabetes.

Based on Table 1 high numbers of medicinal plant species were used for the treatment of skin diseases (23%) and indigestion (21%). Common health ailments in the studied area were skin problems such as wounds, cuts, dermal allergies and a larger number of remedies were used to treat these ailments. Common medicinal plants such as *Althaea officinalis* L., *Falcaria vulgaris* Bernh., *Fumaria vaillantii* Loisel., *Handelia trichophylla* Heimerl, *Plantago major* L. and *Scutellaria luteo-coerulea* Bornm and Sint. Ex Bornm were used for skin diseases. Most of the reported preparations in the area were drawn from a single plant, mixtures were rarely used. It was observed that 70% among women and 30% among men were knowledgeable about plants. It was noted that elder people had more knowledge about the folk uses of medicinal plants than younger generation. The local inhabitants use 52 species of plants for treating various ailments. Most species had multi uses. The plants were mostly used in their crude form. This data offers basic information to the pharmaceutical industry for further research in the treatment and control of ailments.

Conclusion

The data collected shows that these medicinal plants have been used to cure 43 types of ailments. Generally, the people of the studied area still have a strong belief in the efficacy and success of the herbal medicine. The results of the present study provide evidence that medicinal plants continue to play an important role in the healthcare system of this tribal community. The medicinal -botanical survey revealed that the people from this area have significant herbal drugs knowledge but as the people are in progressive exposure to modernization, their knowledge of traditional uses of plants may be lost in due course. So it is important to study and record the uses of plants by different tribes and sub-tribes for future studies. Ethnobotanical studies enable knowledge transference of plant-based treatments to the future generations. Further pharmacological studies are required before encouraging the use of herbal drugs from Zangelanlo district in the northeast Iran. Finally, to conclude, this research article will attract the attention of ethno botanists, phytochemists and pharmacologists for further critical investigation of medicinal plants present in the districts of Zangelanlo, Iran.

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Table 1. Medicinal plants used to cure various ailments in Zangelanlo district, Iran.

No.	Family	Scientific name	Local name	Part used	Uses
1	Apiaceae	<i>Bunium persicum</i>	Gharah zireh	Fruit	Indigestion, flavoring and carminative
2	Apiaceae	<i>Falcaria vulgaris</i>	Ghaz Yaghi	Leaves	Treat wounds
3	Apiaceae	<i>Ferula gumosa</i>	Ghasni	Root and gum	Stomach problems, appetiser, emmenagogue and anthelmintic
4	Apiaceae	<i>Ferula latisepta</i>	Sasekoma	Leaves	Indigestion and anthelmintic
5	Asteraceae	<i>Achillea Wilhelmsii</i>	Gulechaghgher	Flower	Wounds, cutting, antihemorrhoids and indigestion
6	Asteraceae	<i>Centaurea behen</i>	Bikh-e-Sefid	Root	Aphrodisiac
7	Asteraceae	<i>Cichorium intybus</i>	Kasni	Whole plant	Jaundice, febrifuge, blood cleanser and cooling
9	Asteraceae	<i>Handelia trichophylla</i>	Sarahgool	Aerial parts	Respiratory ailments, skin problems, kidney stone and anti-hemorrhage
10	Asteraceae	<i>Scorzonera pusilla</i>	Tolli	Root	Stomach problems
11	Asteraceae	<i>Silybum marianum</i>	Gharamdolagh	Aerial parts	Kidney stone
12	Asteraceae	<i>Tripleurospermum disciforme</i>	Babuneh	Flower	Sore throat, febrifuge and to treat cold
13	Beberidaceae	<i>Berberis integririma</i>	ZelK	Fruit and root	Analgesic and depurative
14	Brassicaceae	<i>Alyssum campestre</i>	Ghodumeh	Leaves	Laxative and anti-tussive
15	Brassicaceae	<i>Descurainia sophia</i>	Khakshir	Seed	Constipation, Anti-thirst cooling and depurative
16	Brassicaceae	<i>Eruca sativa</i>	Mando	Aerial parts	General weakness and sedative
17	Capparidaceae	<i>Capparis spinosa</i>	Kalir	Fruit	Indigestion and anthelmintic,
18	Caryophyllaceae	<i>Acanthophyllum speciosum</i>	Chubak	Root	Herpes and washing
19	Chenopodiaceae	<i>Chenopodium botrys</i>	Therekh	Whole plant	Antidiarrhea, indigestion, carminative, anthelmintic and respiratory disorders
20	Eleagnaceae	<i>Eleagnus angustifolius</i>	Igdeh	Fruit	Antidiarrhea and rheumatism
21	Fabaceae	<i>Alhagi persarum</i>	Dovatikan	Aerial parts	Antidiarrhea, diuretic and kidney stone
22	Fabaceae	<i>Colutea buhsei</i>	Gadook	Fruit and leaves	Toothache
23	Fabaceae	<i>Glycyrrhiza glabra</i>	Soosook	Root	Stomach problems, general weakness and mouth ulcers
24	Fumariaceae	<i>Fumaria vaillantii</i>	Shatara	Aerial parts	Jaundice, indigestion, antacid, treatment of dermal allergies and depurative
25	Hypericaceae	<i>Hypericum scabrum</i>	Chayoti	Flower	Anti-hemorrhage body heat and analgesic
26	Juglandaceae	<i>Juglans regia</i>	Gouz	Fruit and leaves	Antidiarrhea and hair color
27	Lamiaceae	<i>Hymenocrater elegans</i>	Shonook	Flower and leaves	Respiratory ailments, carminative, hypnotic and nerve tonic
28	Lamiaceae	<i>Lallemantia royleana</i>	Balengoo	Seed	Anti-thirst, constipation, sore throat and cough
29	Lamiaceae	<i>Nepeta bracteata</i>	Zufa	Aerial parts	Carminative and treatment of cold
30	Lamiaceae	<i>Perovskia abrotanoides</i>	Hoosh	Whole plant	Respiratory ailments, sedative, dysentery, rheumatism and toothache

Table 1. Contd.

31	Lamiaceae	<i>Scutellaria luteo-coerulea</i>	Geylan	Aerial parts	Indigestion, carminative and skin problems
32	Lamiaceae	<i>Stachys lavandulifolia</i>	Toklijeh	Flower	Treatment of colic, treatment of cold and nerve tonic
33	Lamiaceae	<i>Teucrium polium</i>	Bayramnokhodi	Aerial parts	Diabetes and stomach problems
34	Lamiaceae	<i>Ziziphora clinopodioides</i>	Annokh	Aerial parts	Respiratory ailments, carminative, indigestion, anthelmintic and dysentery
35	Lamiaceae	<i>Ziziphora tenuior</i>	Kakuti	Aerial parts	Antiseptic and stomach problems
36	Liliaceae	<i>Eremurus olgae</i>	Cherish	Root and leaves	Edible as vegetable, sticking and dermal infection
37	Malvaceae	<i>Malva sylvestris</i>	Panirak	Flower and fruit	Febrifuge, respiratory ailments, depurative and mouth ulcers
38	Malvaceae	<i>Malva neglecta</i>	Hmamchoorieh	Flower and fruit	Sore throat and anti-tussive
39	Malvaceae	<i>Althea officinalis</i>	Charm Giah	Root	Wounds, broken bone, swellings due to wounds and snake bites
40	Nitrariaceae	<i>Peganum harmala</i>	Ispand	Seed	Diabetes and antiseptic
41	Plantaginaceae	<i>Plantago major</i>	Kalghooreh	Seed and leaves	Treatment of dermal allergies, treatment of cold, toothache blood-cleaning and laxative
42	Plantaginaceae	<i>Plantago psyllium</i>	Gharenyarg	Seed	Gastric ulcer, mouth ulcers and antitussive
43	Polygonaceae	<i>Rheum ribes</i>	Rivis	Fruit and petiole	Diuretic, blood-cleaning and jaundice
44	Portulacaceae	<i>Portulaca oleracea</i>	Khorfeh	Seed and leaves	Indigestion, depurative, edible as vegetable and anti-thirst
45	Pteridaceae	<i>Adiantum capillus-veneris</i>	Paresiavash	Aerial parts	Febrifuge, sore throat, antitussive and mouth ulcers
46	Salicaceae	<i>Salix alba</i>	Sooyet	Leaves and bark	Sedative, cooling and fever
47	Scrophulariaceae	<i>Scrophularia striata</i>	Mokhaleseh	Whole plant	Dysentery, treatment of colic, carminative and rheumatism
48	Scrophulariaceae	<i>Verbascum songaricum</i>	Doch	Leaves	Anti-hemorrhage, antidiarrhea and indigestion
49	Solanaceae	<i>Solanum nigrum</i>	Sabok angur	Fruit	Analgesic and expectorant
50	Urticaceae	<i>Urtica dioica</i>	Gazgazonak	Aerial parts	Indigestion and anemia
51	Violaceae	<i>Viola odorata</i>	Banafsheh	Flower	Fever of children and treatment of cold
52	Zygophyllaceae	<i>Tribulus terrestris</i>	Gornook	Fruit and leaves	Increases sexual vigour, Kidney stone and anthelmintic

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