

Ethnobotany and folk pharmaceutical knowledge of the major trees or shrubs in North of Iran

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Abstract

An ethnopharmacognostic survey on the traditional pharmaceutical knowledge (TPhk) of old and newly introduced natural remedies used for healing humans in two small mountainous area in Goleston province, Northern Iran. Approximately 56 medicine species of trees or shrubs belongs to 27 families were recorded. The objectives of this study were to introduce important useful parts and their medicinal characteristic them in two indigenous region. We found all these plants in which used by the rural people in traditional uses and food consumption that the main of them included:

Juniperus communis, *Berberis vulgaris*, *Alnus glutinosa*, *Carpinus betulus*, *Alnus subcordata*, *Cornus australis*, *Corylus avelana*, *Crataegus oxycantha*, *Rhamnus palassi*, *Ilex aquifolium*, *Lonicera caprifolia*, *Mespilus germaniac*, *Tillia platyphllus*, *Paliurus spina christi*, *Prunus spinosa*, *Quercus castaneafolia*, *Rosa canina*, *Hypericum androsaemum*, *Rubus fruticosus*, *Salix alba*, *Smilax excelsa*, *Taxus baccata*, *Viscum album*, *Cerasus spp*, *Mespilus sp* and *Pyrus spinosa*. Among these remedies, the common use of the aerial parts of *Hypericum androsaemum* and the leaves of *Morus alba* against cough, migraine and healing wounds. Fleshy female cone of *Juniperus communis* against Urinary Trace Infection. *Crataegus* for heart tonic and *Salix alba* against rheumatic pain. The data that we present here could suggest new inputs for further phytochemical and pharmacological studies among Iranian folk pharmacopoeia, and also for sustaining environmentally integrated projects focuses on of the maintenance of TPhk via breeding or controlled gathering activities of local medicinal species.

Key word: Ethnobotany, trees, shrub, folk pharmaceutical knowledge, Golestsn province, Iran

Introduction

For centuries people have used palnts for healing. As parts of food or medicine have been used with varying succes to cure and provent diseases throughout history, written records about medicinal trees or shrubs date back at least 5000 years to the Sumerians, archeological records suggest even earlier uses medicinal plants. The major variation of climate in different region of Golestan province has resulted in a very rich flora and a long history of medicine plants. It has an extraordinarily rich flora and knowledge of their indigenous medicinal trees or shrubs.

In local region over 90% of population depends on traditional remedies which vary from hills,

forest and mountains. Together with the seasonal climatic changes provide an abundance of medicinal plants diversity. Golestan province makes it an excellent area to study ethnomedicine. Traditional healers and pharmacists tend to all their dried plant material (flower, leaves, stem or root bark). Trees or shrubs in Golestan province are very important considering their medicinal properties.

In the present paper, we will analyze the ethno botany and traditional pharmaceutical knowledge (TPhK) of two small autochthonous North Iranian communities, which are isolated in the inland part of the region Golestan, Northern Iran. The focus of this study is on identification of medicine trees

or shrubs, their part used, medical practices, material of plant and ethno pharmacological.

Thus, distinguishing the medicinal trees and shrubs has an important role for their management in those regions (Ziarat and Charbagh). A detailed survey of the traditional ethnopharmaceutical means and food-medicines recorded in the two communities has been the primary topic of the other papers (Giusti et al. 2004). Most studies on current mediteranean folk pharmacopoeias, not being limited to historical literature-based perspectives (Hieinrich and pieroni, 2001), have focused on the role of natural remedies, mainly medicinal plants within a single cultural context (Pieroni et al. 2001; Quare et al. 2003) while only one work has recently tried a cross cultural comparison among the traditional phytotherapeutic data gathered from bibliographic resources of Italy and Bulgaria (Quare and pieroni et al. 2002a). On the other hand, detailed medical-anthropological surveys on ritual magic- healing practices in this area have been very rarely conducted (Pieroni et al. 2002b).

In addition, medical literature on this subject has rarely considered the " remedies" (Pharmaceuticel means) as a paradigm for understanding cultural differerces in healing systems (Pieroni et al. 2004).

Two areas, located in southern Golestan province from northern Iran, having similar socio characteristic, but different high (500-1200m in Ziarat and 1800-2250m in Charbach) were selected to this study, that moreover, the two communities are separated by about 100 km distance and different ethnic origins.

The aim of this paper is to obtained the use of traditional natural remedies and healing practices in two small rural communities located in the Golestan Province of Northern Iran.

These plants have been used in different preparation methods for the relief of headaches, stomachaches, abdominal pain, rheumatism, indigestion, heart disorders, kidney and gall bladder stones, colds, coughs, flu, antimicrobial, antipatogenous, antidiabetic, sore throats, constipation, fever, diarrhae and urinary trace infection.

Field methods

The present study was carried out in the region of Golestan province form covering an area of 430,000 hectares of woodland region, with several climate and mountain ranges, forest and rangeland reaching 10-3500 meter above sea levele with varing topography, climate and rainfall that produces different habitate of many trees or shrubs.

The objectives of this study were to introduce important useful parts and their medicinal characteristic them in Charbagh and Ziarat region in Gorgan, Charbagh is located 70 Km SE of Gorgan city, in latitude and longitude of 36 37' to 36 34' and 54 35' to 54 24', espectivevely. Its average height is 1800-3500 meter from sea level. Ziarat Mountain is located 6 km SE of Gorgan, its average height is 600- 1500m form sea levels (Fig.1). There are varieties of vegetation in Golestan province. Field observation was conducted over a period two years from April 2001 to September 2003. In this study, ethno botanical information was collected using participant observation in with three persons chosen at random among the elderly population. Who still retain the major portion of traditional knowledge in their respective communities about medicine plants.

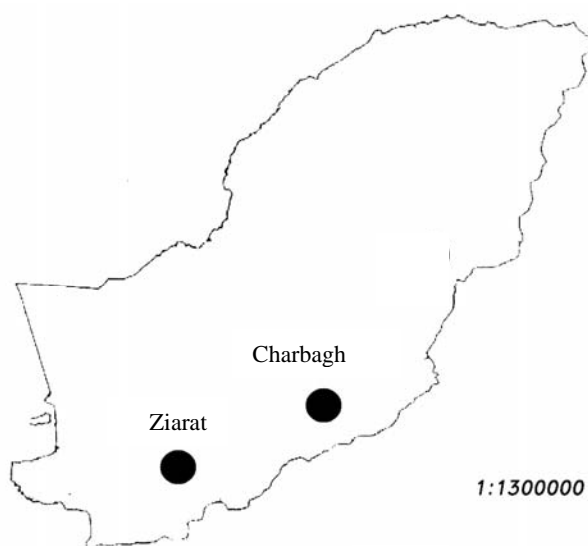


Fig 1. The locations of the studied

Most of the interviewees belonged to the female group coverage: 67 years, which still retains the most information concerning the heritage of domestic remedies. Information was gathered through observation of the present use of traditional plant pharmaceutical or uses that are at least still alive in the remembrances of the oldest population. A botanical specimen was identified followed the standard botanical work by "Flora Iranica," (Akhani, 1994, Frey et al. 1999, Rechinger, 1963).

Traditional knowledge of trees or shrubs was researched using the more traditional means of the ethnobiological analysis (Agelet, 2001; Agelet and Valles, 2003a; Amico, et al. 1997). First by using of various scientific resource, the list of them were prepared that they used in local traditional medicine with local villagers in this province then by using the photography map and field observation the places of their distribution were determined, but the major important of them were listed in Table-1, to based on the traditional medicinal uses of them by the local healers of those villages and they were identified at the

herbarium of Islamic Azad University of Gorgan branch.

Results

Table-1 reported the "traditional" plant derived remedies used until recently in these studied area and represent the traditional heritage of the ethnopharmacopoeia of this small mountainous zone. In this table, around 56 species of trees and shrubs belonging to 27 families were recorded, that used for food and medicine or other purposes internal and external uses in both cases that the infusion or decoction of them (inflorescence, bark, root, stem and leaves), were the main preparation from used. Most uses in local traditional medicine of this region were related to treatment of *Rosaceae*, *Betulaceae*, *Cupressaceae*, *Ulmaceae*, *Salicaceae*, *Caprifoliaceae* and *Hypericaceae*. we reported for each biological taxon or remedy its folk names, the use parts, the means of preparation, the claimed medical use, what was indicated in the aforementioned methodology, and the observation of an eventual use for each drug during the field study. We included traditionally used for medical or ritual medical purposes in the territories of Ziarat and Charbagh.

Table-1. List of the medicinal plants of the folk pharmacopias of the Ziarat and Charbagh in Golestan province, Iran

Specimen	Part (s) used	Uses in the local popular medicine
<i>Punica granatum</i>	Fr	Tapeworm infestation, laxative, purgative, astringent, diarrhoe
<i>Quercus castaneafolia</i>	Ba, Ga	haemorrhoids, diarrhoea, dysentery, rectal bleeding, nasal polyps, eczema, astringent
<i>Rosa canina</i>	Hi	Diarrhoea, diuretic, gastric inflammation
<i>Rubus fruticosus</i>	Le, Be	Sore throats, wounds, astringent, diarrhea, haemorrhoids
<i>Ruscus aculeatus</i>	Ap, Rh	Menstrual bleeding, bladder stone, Jaundice, headache, diuretic, laxative
<i>Taxus baccata</i>	Le	Rheumatic, urinary, anti cancer
<i>Tillia begonifolia</i>	Fl	Antispasmodic, sedative, tension, sinus, headache, stress, cold, flu, fever, high blood pressure arteriosclerosis, itchy skin
<i>Viscum album</i>	Le	Lower, blood pressure and heart rate, anxiety, headach, epilepsy, hyperactivity in children, anticancers, history
<i>Sorbus torminalis</i>	Fr	Coughs, diarrhoea, fever, diuretic, kidney stone, bronchitis
<i>Betula pendula</i>	Le, ba, sa	Bladder and kidney complains, kidney stone. Diuretic, eczema, psoriasis, chronic skin, relief rheumatism, dysentery, haemorrhages.
<i>Castanea sativa</i>	Le, ba	Whooping cough, bronchitis, catarrh, diarrhoea, sore throats, relieve rheumatic, stiff joint of muscles
<i>Celtis australis</i>	Le, fr	Astringent, heavy menstrual, intermenstrual uterine bleeding, peptic ulcers diarrhoea, dysentery
<i>Cornus sp</i>	Fr	Heavy menstrual bleeding, tonic, detoxify
<i>Ficus carica</i>	Fr, la	Laxative, constipation, pain, inflammation, tumours, expectorant, dry cough, bronchitis, warts, insect bites
<i>Ilex aquifolium</i>	Le, be	Fever, diuretic, laxative, jaundice, rheumatism, vomitings
<i>Juniperus communis</i>	Fr, eo,	Tonic diuretic, antiseptic, gout rheumatic, stimulates menstruation
<i>Morus alba</i>	Le, tw, fr	Expectorant, cough, catarrh, fever, sore throats, headach, dizziness, tonic, toothache, laxative, diabetic, insomnia
<i>Phytolacca americana</i>	Ro, fr	Sore, ulcer, tumours, vomiting, pain, rheumatic, arthritica, respiratory infection
<i>Crataegus monogyna</i>	Ap, fr	Cardiotonic, dilate blood vessels, relaxant, antioxidant, heart remedy, blood pressure
<i>Ephedra sp</i>	St	Increase sweating, dilates the bronchioles, diuretic, stimulant
<i>Humulus lupulus</i>	Str	Sedative, sporic, antispasmodic, aromatic bitter a sachet placed inside a bed pillow, anxiety, tension, headache, period pain, aid to digestion
<i>Salix alba</i>	Db	Anti inflammatory, analgesic, fever few, anti rheumatic, astringent, joint remedy, reduce sweating, back pain, night sweats
<i>Sambucus nigra</i>	Ap	Increase sweating, diuretic, anti inflammatory, hay fever, earache, catarrh, flu, candidiasis
<i>Ulmus rubra</i>	Ib	Demulcent, emollient, nutritive, laxative acidity, indigestion, acne, boils, constipation in children, haemorrhoids
<i>Ailanthus altissima</i>	Ba, Rb	Diarrhoea, dysentery, worms, asthma, cardiac depressant

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<i>Berberis vulgaris</i>	St, Fr	Antibacterial, amoebicidal, stimulate bile secretion, cancer, inhibiting, antidiabetic, peptic ulcers, gallstones jaundice, antiseptic, gastro-intestinal infection.
<i>Lonicera caprifolia</i>	Fl, le, ba	Asthma, chest condition, heart diuretic, gout, kidney stone, liver problem, ulcer-sore throat, coughs, anti spasmotic
<i>Ricinus communis</i>	Se	Strongly, laxative, promoting bowel movement, anti constipation
<i>Prunus spinosa</i>	Fr	Diuretic, cystitis, nephritis, arthritis gout, diarrhea, stop bleeding, expel of worm
<i>Smilax excelsa</i>	Ro	Skin problems anti-inflammatory, arthritis, gout, menopausal problems, premenstrual problems, tonic
<i>Vitis vinifera</i>	Le, fr	Astringent, anti-inflammatory, diarrhea, heavy menstrual bleeding, uterine hemorrhage, vaginal discharge, varicose vein, gastro-intestinal tract, expectorant
<i>Ziziphus jujube</i>	Fr	Tonic, sedative, anti-allergenic, promote immune-system
<i>Alnus glutinosa</i>	Le	Fever few, cooling, antiseptics
<i>Carpinus betulus</i>	Le	Astringents, sore throat, tonic, fever few
<i>Mespilus sp</i>	Fr	Cardiotonic, reduce blood pressure
<i>Diospyros lotus</i>	Fr	Antiseptic, feverfew, flu, cold, diarrhoea
<i>Ficus carica</i>	Sap	To heal sore, bronchitis, intestinal depurative, insect bites, anti warts
<i>Malus domestica</i>	Fr	Laxative, dysmenorrhoea, sore throat bronchitis, intestinal depurative
<i>Morus nigra</i>	Le, St	Heal sore throat, bronchitis and diabetic
<i>Olea europea</i>	Le, Fr	Diabetics Apathic stomach – aches
<i>Prunus domestica</i>	Fr	Laxative, antiseptic and UTI
<i>Pyrus communis</i>	Fr	Depurative, mild laxative
<i>Rosa Canina</i>	Le, Fr, Fl	Stomach-anti-depressive diuretic, insect bite, evil eye
<i>Rubus fruticosus</i>	Le, Fr	Diuretic, antiscorbutic, tonic
<i>Ruscus aculeatus</i>	Sh	Liver depurative
<i>Diospyros kaki</i>	Fr	Tonic, purgative
<i>Sambucus ebulus</i>	Fr, Fl	Tonic, sore throat, diaphoretic, antiseptic
<i>Sorbus domestica</i>	Fr	Anti diarrhea
<i>Cornus australis</i>	Fr, Fl	Anti rheumatism
<i>Tillia platiphyllus</i>	Fl	To heal body tumors
<i>Alnus subcordata</i>	Fr, Le	Fever few, astringent and sweating
<i>Ulmus sp</i>	Ba	Anti – bruises, muscular pain
<i>Celtis australis</i>	Fr	Tonic
<i>Quercus castaneifolia</i>	Fr	Tonic, antirheumatic
<i>Paliorus spina – Christi</i>	Fr – Fl	Heal sore throat or cough
<i>Corylus avelana</i>	Fr	Contireumatic

Le:Leaves, Fr:Fruit, Ap:Aerial parts, Str:Strobiles, Ba:Bark, Ro:Root, Rb: Root bark, Ib: Inner bark, Se:Seed oil seed, St: Stem, Eo: Essential oil, La: Latex, Tw: Twigs, Be: Berries, Fl: Flowers, Sh: Shoot, Db:Dried bark, Ga:Gall, Hi:Hip

Discussion

It is apparent that knowledge on traditional natural remedies for healing human diseases is quickly disappearing in Golestan province. Modern pharmaceuticals have substituted many natural remedies and real healers no longer exist in these area. Nevertheless, many people still remember the most famous "healer" of Northern Iran. A great heritage in the field of folk "domestic medicine" still remains in these regions. Most of the remedies quoted in this survey have been abandoned, or are rarely in use at present, but a few of them are still at hand in the primary health care of the family, normally dispensed by the oldest women of the family. Around 56 species of trees and shrubs belonging to 27 families were recorded, that used for food and medicine or other purposes internal and external uses in both cases that the infusion or decoction of them (inflorescence, bark, root, stem and leaves), were the main preparation from used. Most uses in local traditional medicine of this region were related to treatment of *Rosaceae*, *Betulaceae*, *Cupressaceae*, *Ulmaceae*, *Salicaceae*, *Caprifoliaceae* and *Hypericaceae*. The similar my paper well described by the Italian anthropologist (Quave, and Pieroni, 2002; Raja et al. 1997; Raimondo and Lentini, 1990).

Considering the traditional plant remedies reports that the major remedies by trees product belong to respiratory, gastro-intestinal, fever, inflammation, rheumatic pain, cardiotoxic, blood pressure, tonic, sedative, urological, dermatological, diuretic, headache, antioxidant, laxative and etc. Which similar my papers that work by the Italian and Nepali anthropologist during in 1999-2004 (Cappaso et al. 1982; De Feo and Senatore, 1993; De Feo et al. 1992).

The yellow latex of *Hypericum androsaemum* is very widely used in the two region for treating of healing wounds, skin inflammation and it is mainly used in the fall or winter, together with other local herbal drugs, to heal or prevent sore throats, cold, anti-tussive and anti bacterial activity. The other species are gathered during the

summer, dried and stored for winter. The bark of stem the *salix alba* as antirheumatic pain. Decoction of *Crataegus mongyna* and *Mespilus* as enhancing blood circulation and cardiotoxic, Dried fruit of *Ficus carica* and *Morus spp* for heal sore throats, intestinal depurative and constipation, Leaves of *Alnus subcordata* as fever few.

The species of *prunus genus* as laxative, for anti headache, anti diarrhoea, stomachache, toothache and expel worm. Decoction of *punica granatum* tonic for women disorders and expel worm, leaves and fruits of *Rubus species* for tonic, carbuncles, and heal purulent skin abscesses. *Berberis vulgaris* as antibacterial, anti cancer, anti septic, intestinal infection and antidiabetic. Decoction of fleshy female cone of *Juniperus communis* as tonic diuretic and anti Urinary tract infection (UTI).

In table 1 we reported the major "traditional" plant derived remedies uses until recently in the studies area and represent the traditional heritage of the ethnopharmacopoeia of this small mountainous and woodlands zones. In this table, for each biological taxon of remedy its folk names, the used part and traditional uses of them that used for medical or natural medical purposes in the Golestan province, in northern Iran.

Rosa canina (*Rosaceae*) is claimed to have antibacterial and anti inflammatory effects, *Taxus baccata* (*Taxaceae*), is claimed to have anticancer effects and *Juniperus communis* with anti UTI effects.

We concluded the variation in climate in different regions of Golestan province has resulted in a very rich flora and along history of many medicine plants, specially Trees and shrubs medicine. Much number of them has also very important and effective for remedies of many local diseases.

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اتنوبوتانی و اتنوفارماکولوژی درختان و درختچه‌های داروئی استان گلستان

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چکیده

این تحقیق با هدف مطالعه اتنوبوتانی گیاهان دارویی که اغلب توسط درمانگرهای محلی استان گلستان در درمان بیماری‌های مردم روستاهای کوهستانی شمال ایران استفاده می‌کنند، انجام گرفت. تعداد ۵۶ گونه از درختان و درختچه‌های بومی متعلق به ۲۷ تیره گیاهی شناسایی گردید که اغلب به روش‌های متنوع، اندام‌های مختلف آنها در مصارف غذایی و دارویی مورد استفاده قرار می‌گیرند و مهمترین آنها شامل:

Juniperus communis, Berberis vulgaris, Alnus glutinosa, Carpinus betulus, Alnus subcordata, Cornus australis, Corylus avelana, Crataegus oxycantha, Rhamnus palassi, Ilex aquifolium, Lonicera caprifolia, Mespilus germaniac, Tilia platyphillus, Paliurus spina christi, Prunus spinosa, Quercus castaneafolia, Rosa canina, Hypericum androsaemum, Rubus fruticosus, Salix alba, Smilax excelsa, Taxus baccata, Viscum album, Cerasus spp, Mespilus sp and Pyrus spinosa.

می‌باشد. درختچه دارویی، بومی و انحصاری *Hypericum androsaemum* به صورت مخلوط با برگ‌های توت سفید و داوودی وحشی در درمان سرفه، میگرن و التیام زخم، از مخروط‌های گوشتی درخت سرو کوهی علیه بیماری عفونت ادراری و مثانه، از سر شاخه‌های گلدار درخت و ولیک در تقویت قلب و تنظیم ضربان آن و از پوست درخت بید در درمان تب داروهای روماتیسمی استفاده می‌کنند. اتنوبوتانی و مشاوره با درمانگرهای محلی و با تجربه در دو روستای چهارباغ و زیارت منجر به کسب اطلاعات کلی در مورد نام محلی، رویشگاه اندام مورد استفاده و مصارف درمانی آن گونه‌ها گردید. رویکرد جهان امروز در توجه به داروهای طبیعی و موثر مستخرج از گیاهان دارویی و بومی، انجام تحقیقات اتنوبوتانیکی از مورد تجربیات ارزنده طب سنتی، شناسایی آن گونه‌ها نیازهای اکولوژیک، استخراج مواد موثره و فرآوری آن مواد در رفع چالش‌های بهداشتی بسیار موثر است.

کلمات کلیدی: اتنوبوتانی - اتنوفارماکولوژی درختان - درختچه‌های داروئی - استان گلستان