

Ethnobotany and Folk Pharmaceutical Properties of Major Trees or Shrubs in Northeast of Iran

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An ethnopharmacognostic survey on the traditional pharmaceutical knowledge of old and newly introduced natural remedies used for healing humans in two small mountainous area in Semnan province of 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. It is found that all these plants used by the rural people in traditional uses and food consumption that the mainly 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 germanica*, *Tilia platyphyllos*, *Paliurus spina Christi*, *Prunus spinosa*, *Quercus castaneaefolia*, *Rosa canina*, *Hypericum androsaemum*, *Rubus fruticosus*, *Salix alba*, *Smilax excels*, *Taxus baccata*, *Viscum album*, *Cerasus spp*, *Mespilus sp* and *Pyrus spinosa*. The common use of the aerial parts of *Hypericum* and *Rosamum* and the leaves of *Morus alba* against cough, migraine and healing wounds. Fleshy female cone of *Juniperus communis* against urinary tract infection. *Crataegus* for heart tonic and *Salix alba* against rheumatic pain. The studies presented here could suggest new inputs for further photochemical and pharmacological studies among Iranian folk pharmacopoeia and also for sustaining environmentally integrated projects focuses on of the maintenance of traditional pharmaceutical knowledge *via* breeding or controlled gathering activities of local medicinal species.

Key Words: Ethnobotany, Trees, Shrub, Folk pharmaceutical knowledge, Semnan province, Iran.

INTRODUCTION

From ancient time, people using plants as parts of food or medicine with varying success to cure and prevent diseases throughout. Written records about medicinal trees or shrubs date back at least 5000 years to the Sumerians, archeological records

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suggest even earlier uses medicinal plants. The major variation of climate in different region of Semnan province has resulted in a very rich flora and a long history of medicinal 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. The seasonal climatic changes provide an abundance of medicinal plants diversity. Semnan province makes it an excellent area to study ethno medicine. Traditional healers and pharmacists tend to all their dried plant material (flower, leaves, stem or root bark). Trees or shrubs in Semnan province are very important considering their medicinal properties.

In present studies, we report the ethno botany and traditional pharmaceutical knowledge of two small autochthonous North Iranian communities, which are isolated in the inland part of the region semnan 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 ethno pharmaceutical means and food-medicines recorded in the two communities has been the primary topic of the other papers¹. Most studies on current Mediterranean folk pharmacopoeias, not being limited to historical literature-based perspectives², have focused on the role of natural remedies, mainly medicinal plants within a single cultural context³ while only one work has recently tried a cross cultural comparison among the traditional phototherapeutic data gathered from bibliographic resources of Italy and Bulgaria⁴. On the other hand, detailed medical-anthropological surveys on ritual magic- healing practices in this area have been rarely conducted⁵.

In addition, medical literature on this subject has rarely considered the 'remedies' (Pharmaceutical means) as a paradigm for understanding cultural differences in healing systems¹.

Two areas, located in southern semnan province from northern Iran, having similar socio characteristic, but different high (500-1200 m in Ziarat and 1800-2250 m 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 gather the knowledge of the use of traditional natural remedies and healing practices in two small rural communities located in the Semnan province of Northern Iran.

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

EXPERIMENTAL

The present study was carried out in the region of Semnan province 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 levels with varying topography, climate and rainfall that produces different habitate of many trees or shrubs.

Most of the candidates participated in present studies are females of age groups 60-70 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 identified⁶⁻⁸ according to the standard botanical work given in *Flora Iranica*.

Traditional knowledge of trees or shrubs was investigated using the more traditional means of the ethno biological analysis⁹⁻¹¹. First by using of various scientific resource, the list of them were prepared 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 Semnan branch.

RESULTS AND DISCUSSION

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 and 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. Traditionally used plants for medical or ritual medical purposes have also been included in the territories of Ziarat and Charbagh.

It is apparent that knowledge on traditional natural remedies for healing human diseases is quickly disappearing in Semnan 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

TABLE-1
LIST OF THE MEDICINAL PLANTS OF THE FOLK PHARMACOPOEIAS OF
THE ZIARAT AND CHARBAGH IN SEMNAN PROVINCE IRAN

| Specimen | Part (s) used | Uses in the local popular medicine |
|-------------------------------|-------------------------|--|
| <i>Punica granatum</i> | Fruit | Tapeworm infestation, laxative, purgative, estrogens, diarrhea |
| <i>Quercus castaneaefolia</i> | Bark, Gall | Hemorrhoid, diarrhea, dysentery, nasal polyps, eczema astringent |
| <i>Rosa canina</i> | Hip | Diarrhea, diuretic, gastric inflammation |
| <i>Rubus fruticosus</i> | Leaves, Berries | Sore throats, wounds, astringent, diarrhea, hemorrhoids |
| <i>Ruscus aculeatus</i> | Aerial parts, Root bark | Menstrual bleeding, bladder stone, jaundice, headache, diuretic, laxative |
| <i>Taxus baccata</i> | Leaves | Rheumatic, urinary, anti cancer |
| <i>Tillia begonifolia</i> | Flowers | Antispasmodic, sedative, tension, sinus, Headache, stress, cold, flu, fever, high blood pressure arteriosclerosis, itchy skin |
| <i>Viscum album</i> | Leaves | Lower, blood pressure and heart rate, anxiety headache, epilepsy hyperactivity in children, anticancer, history |
| <i>Sarbus torminalis</i> | Fruit | Coughs, diarrhea, fever, diuretic, kidney stone, bronchitis |
| <i>Betula pendula</i> | Leaves, Bark, Stem | Bladder and kidney complains, kidney stone, Diuretic, eczema, psoriasis, Chronic skin, relief rheumatism, dysentery, hemorrhages |
| <i>Castanea sativa</i> | Leaves, Bark | Whooping cough, bronchitis, catarrh, diarrhea, sore throats, relive rheumatic |
| <i>Celtis mistralis</i> | Leaves, Fruit | Astringent, heavy menstrual, inter menstrual uterine bleeding, peptic ulcers, diarrhea, dysentery |
| <i>Cornus up</i> | Fruit | Heavy menstrual bleeding, tonic, detoxify |
| <i>Ficus carica</i> | Fruit, Latex | Laxative, constipation, pain, inflammation, tumors. Expectorant, dry cough, bronchitis, warts, insect bites |
| <i>Ilex aquifolium</i> | Leaves, Berries | Fever, diuretic, laxative, jaundice, rheumatism, vomiting |
| <i>Juniperus communis</i> | Fruit, Essential oil | Tonic diuretic, antiseptic, gout rheumatic, stimulates menstruation |
| <i>Morus alba</i> | Leaves, Twigs, Fruit | Expectorant, cough, catarrh, fever, sore throats, headache, dizziness, tonic, toothache, laxative, diabetic, insomnia |
| <i>Phytolacca americana</i> | Root, Fruit | Sore. Ulcer, tumors, vomiting, pain, rheumatic, arthritics. Respiratory infection |
| <i>Crataegus monogyna</i> | Aerial parts, Fruit | Cardio tonic, dilate blood vessel, relaxant, antioxidant, heart remedy, blood pressure |
| <i>Ephedra sp</i> | Stem | Increase sweating, dilates the bronchioles, diuretic, stimulant |
| <i>Humulus lupulus</i> | Stribikes | Sedative, soporific, antispasmodic, aromatic bitter a sachet placed inside a bed pillow, anxiety, tension, headache, period pain, aid to digestion |

| Specimen | Part (s) used | Uses in the local popular medicine |
|----------------------------|------------------------|--|
| <i>Satix alba</i> | Dried bark | Anti inflammatory, analgesic, fever few, anti rheumatic, astringent, joint, remedy, reduce sweating, back pain, night sweats |
| <i>Sambucus nigra</i> | Aerial parts | Increase sweating, diuretic, antiinflammatory, hay fever, earache, catarrh, flu, Candida sis |
| <i>Ulmus rubra</i> | Inner bark | Demulcent, emollient, nutritive, laxative acidity, indigestion, acne, boils, constipation in children, hemorrhoids |
| <i>Ailanthus altissima</i> | Bark, Root bark | Diarrhea, dysentery, worms, asthma, cardiac depressant |
| <i>Berberis vulgaris</i> | Stem, Fruit | Antibacterial, stimulate bile secretion, cancer, inhibiting, ant diabetic, peptic ulcers, gallstones jaundice, antiseptic, gastro-intestinal' infection, |
| <i>Lonicera caprifolia</i> | Flowers, Leaves, Bark | Asthma, chest condition, heart diuretic, gout, kidney stone, liver problem, ulcer-sore throat, coughs, anti spasmodic |
| <i>Ricinus communis</i> | Seed oil seed | Strongly, laxative, promoting bowel movement, anti constipation |
| <i>Prunus spinosa</i> | Fruit | Diuretic, cystitis, nephritis, arthritis gout, diarrhea, stop bleeding, expel of worm |
| <i>Smilax excelsa</i> | Root | Skin problems anti-inflammatory, arthritis, gouts menopausal problems, pre- menstrual problems, tonic |
| <i>Vitis vinifera</i> | Leaves, Fruit | Astringent, antiinflammatory, diarrhea, heavy menstrual bleeding, uterine hemorrhage, vaginal discharge, varicose vein, gastro-intestinal tract, expectorant |
| <i>Ziziphus jujube</i> | Fruit | Tonic, sedative, anti-allergenic, promote immune-system |
| <i>Alnus glutinosa</i> | Leaves | Fever few, cooling, antiseptics |
| <i>Carpinus betulus</i> | Leaves | Astringents, sore throat, tonic, fever few |
| <i>Mespilus sp</i> | Fruit | Cardio tonic, reduce blood pressure |
| <i>Diospyros lotus</i> | Fruit | Antiseptic, feverfew, flu, cold, diarrhea |
| <i>Ficus carica</i> | Sap | To heal sore, bronchitis, intestinal depurative, insect bites |
| <i>Malus domestica</i> | Fruit | Laxative, dysmenorrheal, sore throat bronchitis, intestinal depurative |
| <i>Morus nigra</i> | Leaves, Stem | Heal sore throat, bronchitis and diabetic. |
| <i>Olea europea</i> | Leaves, Fruit | Diabetics, aphtha, stomachaches |
| <i>Pyrus communis</i> | Fruit | Laxative, antiseptic and UTI |
| <i>Pyrus dimestiea</i> | Fruit | Depurative, mild laxative |
| <i>Rosa canina</i> | Leaves, Fruit, Flowers | Stomach ache, anti-depressive diuretic, insect bit, evil eye |
| <i>Rubus froticosus</i> | Leaves, Fruit | Diuretic, anti scorbutic, tonic |
| <i>Ruscus aculeatus</i> | Shoot | Liver depurative |
| <i>Dyospirus koki</i> | Fruit | Tonic, purgative |
| <i>Sambucus ebulus</i> | Fruit-Flowers | Tonic, sore throat, diaphoretic, antiseptic |

| Specimen | Part (s) used | Uses in the local popular medicine |
|---------------------------------|----------------|------------------------------------|
| <i>Sorbus domestica</i> | Fruit | Anti diarrhea |
| <i>Cornus australis</i> | Fruit, Flowers | Anti rheumatism |
| <i>Tillia platiphyllus</i> | Flowers | To heal body tumors |
| <i>Alnus subcordata</i> | Fruit, Leaves | Fever few, astringent and sweating |
| <i>Ulmus sp</i> | Bark | Anti-bruises, muscular pain |
| <i>Celtis ustralis</i> | Fruit | Tonic |
| <i>Quercus castaneaefolia</i> | Fruit | Tonic, antirheumatic |
| <i>Paliorus spina-Christina</i> | Fruit-Flowers | Heal sore throat or cough |
| <i>Corylus avelana</i> | Fruit | Contirheumatic |

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 elderly 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. Similar studies was described by the Italian anthropologist³⁻⁵. Considering the traditional plant remedies reports¹²⁻¹⁶ that the major remedies by trees product belong to respiratory, gastro-intestinal, fever, inflammation, rheumatic pain, cardio tonic, blood pressure, tonic, sedative, urological, dermatological, diuretic, headache, antioxidant, laxative, etc.

The yellow latex of *Hypericum androsaerum* 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 antibacterial activity.

The other species are gathered during the summer dried and stored for winter. the bark of stem the *Salix alba* as antineuropathic pain.

Decoction of *Crataegus mongyna* and *Mespilus* as enhancing blood circulation and cardiogenic, Dried fruit of *Ficus carica* and *Morus*. spp for heal sore throats, intestinal depurative and constipation, leaves of *Alnus sithcorclatu*.

The species of prunus genus as laxative, for head ache, antidiarrhea, stomach ache, tooth ache and expel worm. Decoction of punic grananml tonic for women disorders and remove worm. The leaves and fruits of Rubus species for tonic, carbuncles and heal purulent skin abscesses. Barberries as antibacterial, anticancer, antiseptic, intestinal infection and anti diabetic. Vulgar decoction of fleshy female cone of *Juniperus communis* as tonic diuretic and anti urinary tract infection.

Table-1 reports the major traditional plant derived remedies uses until recently in the studies area and represent the traditional heritage of the ethno pharmacopoeia 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 Semnan province, in northern Iran. *Rosa caning* (Rosaceae) is claimed to have antibacterial and antiinflammatory effects, *Taxus haccata* (Taxaceae), is claimed to have anticancer effects and *Juniperus communis* with anti urinary traces infection effects. It is concluded the variation in climate in different regions of Semnan 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 diseases¹²⁻¹⁶.

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