

Overview of Important Medicinal Plants at Fars Province, Iran

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Abstract

Fars province in southern Iran, with an area of 133000 square kilometers is one of the largest provinces of the country. There are different climates in the province that has caused it to be a pioneer at production and use of medicinal plants in the country, as it is the largest exporter of medicinal plants in the country. In this study, an overview of the most important medicinal species in this province has been dealt with. After the source and target data were collected and their accuracy were studied, according to the frequency of data and information contained in this field, the key points were extracted and to facilitate their use, was prepared in tabular form.

Keywords: Herbs; Medicinal plants; Fars province; Iran

Introduction

Herbs are the most important products in natural resources which directly have a positive impact on the lives of people. Many of the drugs we use are directly or indirectly from herbal medicinal products. The importance of plants has been evident to humans since ancient times as Egyptians have been expertise from the sixteenth century BC in the extreme use of these plants [1-3].

As expressed before, Egypt, has a long history in terms of research background in this area. From ancient times, Jewish people used these plants too. India also has a very famous old books on herbs called caraca and Susruta. China's oldest medical book is attributed to one of its emperors called Shinon who lived in 2800 BC from 8 to 10th centuries, famous Iranian scientist Avicenna and Razi were shining in this field [4-7]. In Western countries, progress in this science dates back to the early Middle Ages that continues to date and by scientists such as Constantine, Epitome Matthiol, and Dragendroff and so on has been done [8-10]. In Iran, the most comprehensive investigation in this case was conducted by Ali Zargari and the result has been published in five volumes [5]. In Iran, with respect to special geographic locations and different climatic conditions is habitat of many varieties of medicinal plants and In the meantime, the province of Fars province is the most relevant So that, according to the provincial Department of Natural Resources, there are more than 1600 species of medicinal plants in Fars and more than 100 species of them are massively cultivated on 600 hectares of land in the province, of course, the data is not on tree species and the garden. Medicinal plants export from province abroad in 2015 was 48 tons So that the province has become the first exporter of these products in the country. It should be noted that the province with an area of 133000 square kilometers includes 8.1% area of the country which is located in the southern part of the country and holds Three climate in which The North and North West of the province has mountains with snow and rain and the amount of rainfall is over 400 millimeters a year. Central areas with mild winter and hot and dry summer is with annual precipitation of 200 to 400 millimeters. Also, south and South-East holds mild winter and very

hot summer with annual precipitation of 100 to 200 millimeters [7]. figure shows the situation of Fars province in Iran (Figure 1).

Research Methodology

In this study, following steps were taken to conduct the research.

Gather information and data: Given that there are a lot of resources of medicinal plants, but most of them are a reflection of people's experiences although not certain, but most of them have no formal training in this area and have just inherited and acquired these practices that certainly will be helpful to use the information provided that the information be evaluated with scientific data that has been considered in this study. In addition, the relevant articles and books have also been used. Research is also being conducted by the departments of natural resources, agriculture, the environment and the tribes of Fars province is also considered.

Information and data evaluation: in this regard for other articles, books and academic research there is no problem, but as mentioned before, information about people who have been working on an experimental basis in the field of medicinal plants should be evaluated and just the sort of information that is scientifically acceptable and consistent with their academic issues were used.

Extracting the desired and key data: Due to the large volume of literature on medicinal plants, at this stage, it was launched to extract key data which were useful for getting familiar with province medicinal plants and again to simplify using them, they have been tabulated.

Discussion

Climatic variations in Fars province has caused a wide range of plants from different families to grow and this factor has had the most for the province to turn to the largest medicinal plants of the country.

The Most families of medicinal plants in Fars province include Leguminosae- Rosaceae- Cruciferae and Umbelliferae.

Many medicinal plants in Fars Province like *Crocus sativus*-*Oryza sativa*-*Cerasus arium*, *Citrus limonum* are found only in certain parts and their distribution is limited.

Some of medicinal plants *Peganum harmala*-*Punica granatum*-*Triticum sp.* have been widely distributed and are observed in other places too.

Development of production and utilization of medicinal plants is one of the most important ways of creating jobs for local people and it would only be possible with the cooperation of government efficient machination.



Family name	Species name	Major features of Botany	Usable parts	Effective substance	Health benefits
Anacardiaceae	<i>Rhus coriaria</i>	Bushy tree-Small fruit- Leaves change into red and green in autumn	The whole plant	Tannic acid	Anti diarrhea-Coagulator
Berberidaceae	<i>Berberis vulgaris</i>	Spiny bushy tree-Yellow flower and wood	Root-Flower-Fruit-Skin of stem and root	Berberine-Berbamin-Palmitin-Berberobin	Anti diarrhea and bleeding and gingivitis
Cruciferae	<i>Brassica napus</i>	Herbal-Leaves without trichome –Swollen root	Root	Vitamins-Minerals	Anti scurvy -Diuretic – Treatment of kidney stone
Cruciferae	<i>Brassica oleracea</i>	Grass- Leaf with trichome	Leaf	Sulforaphane	Anti scurvy – Wound healing
Cruciferae	<i>Cheiranthus cheiri</i>	Herbal-Narrow Leaves with lots of hairs- Brown yellow flower	leaf-seed	Quercitin-Quinoline-Glucoquinoline	Headache and stuffy nose curing
Cruciferae	<i>Descurainia sophia</i>	Herbal-Stem Branches at ground level	seed	Protein-Fat	Wound healing-Anti fever and worm
Cruciferae	<i>Nasturtium officinale</i>	Herbal-Fleshy leaves - Growing in clear water	The whole plant	Gluconasturtin-Phenylethyl	Mucus producing- Treatment of gout and rheumatism
Cruciferae	<i>Raphnus sativus</i>	Herbal-Swollen root- White or yellow or violet flower	Root-Juice	Sulforaphane	Whooping cough and rheumatism curing- Treatment of gallbladder stone
Cruciferae	<i>Sinapis alba</i>	Herbal-Covered with trichome-Yellow flower	Seed	Sinalbin	Diuretic - Laxative
Cucurbitaceae	<i>Citrullus vulgaris</i>	Bushy- Yellow flower- Fleshy fruit	Seed-Fruit	Citrullin	Diuretic- Anti fever and infection
Cucurbitaceae	<i>Cucumis melo</i>	Bushy- Yellow flower -Fleshy fruit	Seed-Fruit	Vitamin A-vitamin C- Cellulose	Anti worm - Diuretic
Cucurbitaceae	<i>Cucumis sativus</i>	Bushy-Stem with rough hairs-Big yellow flower	Seed-Fruit	Mucilage-Erepsin	Dialysis-Diuretic- Anti worm-Hygiene of skin
Fumariaceae	<i>Fumaria parviflora</i>	Herbal-Dusty leaves- White flower	The whole plant	Protopine-Fumoficinaline	Sweaty-Appetizer
Geraniaceae	<i>Geranium robertianum</i>	Herbal-Multi parts leaves- Bad smell	The whole plant	Ellagic acid-Geranin	Diuretic-Constipater - Tonic
Hypericaceae	<i>Hypericum perforatum</i>	Herbal-Stem Featured numerous longitudinal lines-Oval leaves	Twig with flower	Hyperin-Hypericin	Tonic-Digestive- Pain killer- Anti Bile
Leguminosae	<i>Albizzia lebbek</i>	Tree without thorns- Flower in white , pink and red	Stem-Skin-Root-	Albizzin	Anti worm - Curing Itching Treatment of Asthma
Leguminosae	<i>Alhagi camelorum</i>	Herbal-Barbed stem	Manna	Melezitose	Laxative- Medications sweetener
Leguminosae	<i>Arachis hypogaea</i>	Herbal-yellow flower	Fruit	Oleic acid-Palmitic acid	Camphor oil supply
Leguminosae	<i>Cercis siliquastrum</i>	Beautiful bushy tree- beautiful and purple flower	Flower-Leaf-Skin		Constipater-Curing Bronchitis
Leguminosae	<i>Faba vulgaris</i>	Herbal-Big and white flower	Flower-Fruit-Seed	Proteoze-Vicilin Legumalin	tonic-Curing Fatigue- Anti paroxysm

Leguminosae	<i>Glycyrrhizia glabra</i>	herbal- yellow and violet flower	Rhizome-Root	Glycyrrhizin-Glycyrrhizic acid	Curing cough and inflammation of stomach
Leguminosae	<i>Lens culinaris</i>	Herbal-White and small flower	Seed	Amidone	Anti inflammation
Leguminosae	<i>Medicago sativa</i>	Herbal-Big blue and violet flower	Twig	Asparagine-Leuzin-Arginin	Curing rickets
Leguminosae	<i>Melilotus officinalis</i>	Herbal-Yellow small and aromatic flower – Trichomeless fruit	Twig with flowers	Coumarin-Melilotic acid	Diuretic – Curing chest pain
Leguminosae	<i>Phasaeolus vulgaris</i>	Herbal-Flower in white and yellow	Skin-Fruit-Seed	Arginine-Fazin	Curing diabetes
Leguminosae	<i>Pisum sativum</i>	Herbal	Seed	Legumolin-Vicilin-Legumin	Diuretic
Leguminosae	<i>Trigonella foenum-graecum</i>	Herbal- Single and yellow flower	Seed- Stem	Trigonellin-Nicotinic acid	Tonic -Softener
Leguminosae	<i>Vicia sativa</i>	Herbal-Violet flower	Seed	Vicin-Legumalin-Legumin	Curing measles and smallpox inflammation and
Magnoliaceae	<i>Chimonanthus fragrans</i>	Bushy tree –Flower herbaceous in lemon-Jar like fruit	Root	Calycanthin	Stomach tonic
Malvaceae	<i>Althaea officinalis</i>	Herbal-Stem with trichome- Long , Spindle like root	Root-Flower-Leaf	Mucilage	Softener -Curing skin irritation
Myrtaceae	<i>Eucalyptus globolus</i>	Tree- firm wood	Leaf	Eucalyptic acid-Eucalyptol	Disinfectant –Constipater-Anti fever
Myrtaceae	<i>Myrtus communis</i>	Evergreen bushy tree - Leather leaves-Big and white flower	Leaf-Fruit-Flower	Myrtidana-Tannin-Linolein	Disinfectant
Papaveraceae	<i>Papaver rhoeas</i>	Herbal-Leaf with trichome- Single and red flower	Petal	Papaveric acid	Curing Insomnia-Laxative
Punicaceae	<i>Punica granatum</i>	Bushy tree- Rugged and firm stem- Multiple Spiny twig	Leaf-Flower-Root	Punicatanic acid-	Curing Loss of appetite and diarrhea and hemorrhage and anemia
Ranunculaceae	<i>Aquilegia vulgaris</i>	Herbal- The upper surface of the leaves dusty- Blue and purpleF flower -	Fruit with seed	Hydrogen cyanide	Sweaty-Diuretic- Anti scurvy
Ranunculaceae	<i>Consolida regalis</i>	Herbal- Beautiful blue and white flower	Seed	Delsoline-Delcozine-kaempferol	Strong aperient- Skin irritative
Ranunculaceae	<i>Nigella sativa</i>	Herbal-Multi parts leaves-Flower in white	Seed	Nigellone-Melantin-Melantigentin	Aperient- Anti worm
Rhamnaceae	<i>Zizyphus jujuba</i>	Bushy tree - Small and yellow green flower	Fruit	Zizyphutanic acid-Zizynic acid	Laxative
Rosaceae	<i>Amygdalus communis</i>	Tree- Plain and oval leaf- Pink flower	Flower-Skin-Fruit-Seed kernel	Albuminoid-Amygdolinozid	Anti-bile Diuretic Curing cough - Aperient
Rosaceae	<i>Armeniaca vulgaris</i>	Tree- Big , white and pink flower	Seed Kernel- -Fruit	Conglotin-pangamic acid	Constipater-Dialysis

Rosaceae	<i>Cerasus arium</i>	Long living tree - Aspheric fruit	Fruit	Folic acid-Choline	Hygiene Skin- Treatment of kidney
Rosaceae	<i>Cerarus vulgaris</i>	Bushy tree-With lots of shoots- Aspheric fruit	Fruit	Folic acid-Choline	Curing Kidney and liver diseases.
Rosaceae	<i>Fragaria vesca</i>	Bushy tree-White flower	Leaf-Rhizome-Fruit	Tannin- Glucoside	Curing Shortness of breath –Dialysis-Curing body hypothermia and diarrhea.
Rosaceae	<i>Malus orientalis</i>	Bushy tree-Upper level leaf with trichome-Big, white and pink flower	Leaf-Fruit-Stem skin	Phlorizin- phloritin	Diuretic- Constipater – Anti fever
Rosaceae	<i>Mespilus germanica</i>	Spiny bushy tree-Big flower in white and pink	Fruit-Leaf	Malic acid-Tannin- Citric acid-Tartaric acid	Constipater-Curing hemorrhage
Rosaceae	<i>Persica vulgaris</i>	Bushy tree-Narrow and long leaf	Fruit-Skin-Flower--Leaf	Amygdalin-Conglotin	Aperient-Skin hygiene- Anti fever
Rosaceae	<i>Prunus sativum</i>	Tree-Big fruit	Fruit	Pyranose	Tonic-Curing gout and rheumatism
Rosaceae	<i>Pyrus communis</i>	Bushy tree- White and pink flower	Stem-Fruit-Leaf-Skin	Arbutin-phlorizin	Constipater-Diuretic- Sedative
Rosaceae	<i>Rose canina</i>	Bushy tree-Flower in white and pink	Leaf-Flower	Tannin-Malic acid-Citric acid	Curing Bloody diarrhea and kidney inflammation – Anti scurvy
Rosaceae	<i>Rose gallica</i>	Spiny bushy tree-flower in red and aromatic	Flower bud	Cyanine	Constipater-Curing Hemorrhage-Skin hygiene
Rutaceae	<i>Citrus bigaradia</i>	Evergreen tree-aromatic and thick and juicy petal	Leaf-Flower_Fruit	Stachydrin-Hesperidin	Digesting - Anti paroxysm
Rutaceae	<i>Citrus limonum</i>	Small tree-Strong root in white-Spiny twig	Fruit	Camphen-Limonen- Geraniol-Citral	Increasing white globules- Anti rheumatism and asthma
Rutaceae	<i>Citrus sinensis</i>	Small tree-White flower with weak smell	Fruit	Diastase-Citric acid-Malic acid	Antiseptic - Mucus producing
Tamaricaceae	<i>Tamarix gallica</i>	Tree-Narrow and dark green leaf-Dark red branch	Manna-Skin	Scoline-Gallic acid	Constipater-Diuretic - Appetizer
Umbelliferae	<i>Anethum graveolens</i>	Herbal-White root-Small and yellow flower	Leaf-Fruit	Limonene-Carvon- phellandren	Anti nausea and stomach ache
Umbelliferae	<i>Apium graveolens</i>	Herbal—Small flower in white green	The whole plant	Apiine-APIose	Diuretic-Anti bloating
Umbelliferae	<i>Carum carvi</i>	Herbal-White pink small flower	Stem-Leaf-Fruit	Wax-Mucilage-Carvon- Dihydrocarveol	Diuretic-Anti bloating and paroxysm
Umbelliferae	<i>Coriandrom sativum</i>	Herbal-Full of leaves in green-Big and white flower	Seed	Phellandren-Coriandrol	Diuretic-Anti bloating and paroxysm
Umbelliferae	<i>Daucus carota</i>	Herbal-Small flower in yellow	Root-Fruit	Limonin	Diuretic-Skin hygiene
Umbelliferae	<i>Foeniculum vulgare</i>	Herbal-Aromatic Yellow flower -	Root-Leaf-Fruit	Anethol-Estragol-phenone- phellandren	Diuretic-Sedation
Umbelliferae	<i>Frula gumosa</i>	Stem- Thick Flower in yellow –Leaf with trichome	Plant juice	Cadinen-Cadinol- Umbelliferon	Anti paroxysm and stomach ache

Umbelliferae	<i>Heracleum persicum</i>	Herbal-Aromatic-flower White	Root-Stem-Flower	Butyrate Methylic-Butyrate ethylic-Acetate	Anti-bloating
Umbelliferae	<i>Petroselinum crispum</i>	Herbal-Small and green flower	Root-Stem-Flower	Apiiosid-APIIOSE-APIINE	Diuretic-Curing Shortness of breath and hepatitis
Umbelliferae	<i>Pimpinella anisum</i>	Herbal-flower Small in white	Fruit	Anisic acid-Methyl chavi	bloating Anti
Violaceae	<i>Viola odorata</i>	Herbal-Heartlike Leaf- Single violet flower- Fruit with trichome	Flower -Leaf-Root- Seed	Violin	Softener-Sweaty_Mucus producing
Vitaceae	<i>Vitis vinifera</i>	Climber tree -Knotted stem	Plant juice-Fruit-Leaf	Succilic acid-Vitin-Glucolic acid	Tonic-Constipater- Diuretic-Anti fever blister
Zygophyllaceae	<i>Peganum harmala</i>	Herbal-Full of green leaves-Big white flower	Seed	Harmin-Harmalin-Harmalol	Sleep causing-Sweaty- Anti worm
Zygophyllaceae	<i>Tribulus terrestris</i>	Herbal-Stem with hairs	Root-Fruit Leaf-Seed	Resin-Polyphenol- Arabinose	Tonic- Appetizer- Bladder and kidney stone exertion- Blood pressure reduction

Table 1: Fars Province important medicinal plants. Spermatophytes Division-Angiosperms. (Subdivision-Dicotyledons Class-Dialypetales Subdivision).

Family name	Species name	Major features of Botany	Usable parts	Effective substance	Health benefits
Labiatae	<i>Melissa officinalis</i>	Herbal-Sharp tip leaf- White flower	Shoot-Leaf	Citronel-Citral	Curing paroxysm and dizziness
Labiatae	<i>Mentha piperata</i>	Herbal-With rhizome and stolon	Flowering shoot- Leaf	Tannin-Menthol-Isomenthol	Anti bloating
Labiatae	<i>Mentha pulegium</i>	Herbal-Cylindrical appearance	Aerial parts of the plant	Pectin-Resin-Pulegium	Anti bloating - Disinfectant
Labiatae	<i>Ocimum basilicum</i>	Herbal-Sharp tip leaf - White flower	Whole of the plant	Estragol-Ocimum	Curing dizziness and nausea and cough
Labiatae	<i>Satureia hortensis</i>	Herbal- stem color darker than leaves	Aerial parts of the plant	Citrosol-Ursolic acid	Diuretic- Anti bloating
Plantaginaceae	<i>Plantago major</i>	Herbal-Nervure Throughout the leaf	Leaf-Root-Seed	mucilage	Dialysis-Curing Diarrhea and asthma
Plumbaginaceae	<i>Plumbago europaea</i>	Herbal-Leaves aspheric at base, other leaves sharp tip and narrow - Light blue flower	Root	Tannin-Amidone-Plumbagin- Gallic acid	Aperient
Valerianaceae	<i>Valeriana officinalis</i>	Herbal-Aromatic white pink flower- With Rhizome- plenty of roots	Root-Rhizome	Tannin-Valerinic acid-Valerin	Curing bloating and epilepsy y and paroxysm

Table 2: Important medicinal plants in Fars province (Spermatophytes Division-Angiosperms Subdivision-Dicotyledons Class-Sympetalaes Subdivision).

Family name	Species name	Major features of Botany	Usable parts	Effective substance	Health benefits
Chenopodiaceae	<i>Spinacia oleracea</i>	Herbal-Triangular leaf	Leaf	Spinacine-Neoxanthin- Violaxanthin	Curing asthma, constipation and rheumatism
Elaeagnaceae	<i>Elaeagnus angostifolia</i>	Tree- Small flower	Leaf-Dried fruit	Amino acids	Constipater-Anti fever

Euphorbiaceae	<i>Euphorbia helioscopia</i>	Herbal- Small red flower	Root- Seed	Euphorbon-Euphorbic acid	Aperient
Fagaceae	<i>Quercus tourn</i>	Tree-Aspheric female flower- hanging male flower	Leaf- Skin- Fruit- Gall	Tannin-Galotanic acid-Digallic acid	Curing tuberculosis and hemorrhage and rickets
Juglandaceae	<i>Juglans regia</i>	Tree-Hanging male flower-Vertical female flower	Wood- - Leaf Fruit	Juglon-Citric acid-Gallic acid-Digallic acid	Curing Diabetes and tuberculosis –Anti worm
Moraceae	<i>Ficus carica</i>	Tree-Rough leaf	Fruit- Leaf- Latex	Vitamin C-Betacarotene	Aperient- Anti parasite
Moraceae	<i>Morus alba</i>	Tree-Light green leaf	Fruit	Resveratrol-Tannin	Laxative - Curing chest pain
Moraceae	<i>Morus nigra</i>	Tree-Dark green leaf	Fruit- Skin- Root	Gallic acid-Ellagic acid-Anthocyanin	Anti worm- Curing sore throat
Platanaceae	<i>Platanus orientalis</i>	Tree-White trunk	Skin- Leaf- Root	Tannin-phenol	Curing skin rash and voice hoarseness
Polygonaceae	<i>Rumex acetosa</i>	Herbal-Sharp tip leaf-Small flower	Leaf- Seed-Root	Remicin	Curing Gingivitis
Salicaceae	<i>Salix alba</i>	Tree- Silver white leaf-Surface of the leaf with white hairs	Skin	Salicid-Helicin-Salicozid	Anti fever-Anti paroxysm

Table 3: Important medicinal plants in Fars province (Spermatophytes Division-Angiosperms Subdivision-Dicotyledons Class-Monochlamideae Subdivision).

Family name	Species name	Major features of Botany	Usable parts	Effective substance	Health benefits
Amarylliaceae	<i>Narcissus tazetta</i>	White flower and aromatic- Narrow and long leaf	Bulb	Narcinin-Tazenin	
Asparagaceae	<i>Asparagus officinalis</i>	Herbal- Squamous leaf –With rhizome	Rhizome-Root	Coniferin-Asparaguse	Curing hepatitis-Diuretic
Graminaceae	<i>Avena sativa</i>	Herbal- Long fruit	Bud-Seed	Vitamin A-E-B - Betaglucan	Diuretic - Laxative – Wound healing
Graminaceae	<i>Hordeum vulgare</i>	Herbal- Rough and intermittent leaf	Bud-Seed	Albuminoid –Diastase-Enzyme-Amylose	Anti fever- Diuretic-Curing Diarrhea and nephritis
Graminaceae	<i>Oryza sativa</i>	Herbal-Annual- Large and narrow leaf	Seed	Amidone-Niacin-Thiamin-Riboflavin	Curing diarrhea and ulcers
Graminaceae	<i>Secale cereale</i>	Herbal- Rough and wide leaf	Bud-seed	Amidone-Secalose	Laxative- Softener
Graminaceae	<i>Triticum sp</i>	H-erbal-Annual	Bud-seed	Gluten-Amidone-Cellulose	Curing asthma and inflammation-Anti poison
Iridaceae	<i>Crocus sativus</i>	Herbal-Hard bulb-violet flower	Stigula -Style	Crocin-Crocetin	Curing toothache

Iridaceae	<i>Iris florentina</i>	Herbal-With rhizome Large , fragrant and white flower	Rhizome	Ascorbic acid-Iridine-Irigenin	Diuretic- Aperient-Curing whooping cough –Anti worm
Liliaceae	<i>Allium capa</i>	Herbal	Bulb	Citric acid-Anthocyanin	Antiseptic- Diuretic-Curing diabetes
Liliaceae	<i>Allium porrum</i>	Herbal- Band and wide leaf	Bulb-Leaf	Hemolysin- Maltase	Curing Indigestion, obesity and joint pain
Liliaceae	<i>Allium sativum</i>	Herbal- White flower	Bulb	Allyl-Allylpropylle	Disinfectant-Anti worm- Decreasing blood pressure
Palmaceae	<i>Phonix dactylifera</i>	Tree-Big trunk- Big leaf	Fruit	Mucilage-Glucose	Curing cough and chest pain

Table 4: Important medicinal plant in Fars province (Spermatophytes Division-Angiosperms Subdivision-Monocotyledons Class).

Family name	Species name	Major features of Botany	Usable parts	Effective material	Health benefits
Cupressaceae	<i>Cupressus sempervirens</i>	Tree-Very small and triangular leaf- Smooth and red grey trunk	Wood-Fruit	Tannin-Essence	Vasoconstrictor -Curing diarrhea and bleeding.
Pinaceae	<i>Pinus silvestris</i>	Tree-Fractured and red Skin trunk	Seed-Bud	Coniferylic acid	Curing cough- Diuretic

Table 5: Important medicinal plants in Fars province (Spermatophytes Division-Gymnosperms Subdivision).

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