

*Original Research Paper*

## **An ethnobotanical survey on hormozgan province, Iran**

Omid Safa<sup>1</sup>, Mohammad Amin Soltanipoor<sup>2</sup>, Soheil Rastegar<sup>1</sup>, Mahnaz Kazemi<sup>3</sup>, Khadijeh Nourbakhsh Dehkordi<sup>4</sup>, Alireza Ghannadi<sup>5\*</sup>

### **Abstract**

**Objective:** The present study is based on an ethnobotanical research project conducted in Hormozgan province that is located in south of Iran, bordering waters of the Persian Gulf and Oman Sea. This survey was carried out in order to recover the ethnobotanical and ethnomedicinal knowledge of the residents of this province. They are using medicinal and functional plants for treating or preventing several diseases.

**Materials and Methods:** Ethnobotanical data sheets were run with the native inhabitants and people of the province by arranging frequent field trips to different parts of the province and direct interviews with them especially those who were more familiar with the plants and their usage.

**Results:** A total of 150 plant species belonging to 53 families were recorded for their ethnobotanical and ethnomedicinal uses among the people of province. The records were developed by scientific names, family names, local names, medicinal parts used, different ways of their application, and traditional uses of the plants. There was high compliance in the use of plants in painful disorders, gastrointestinal, and dermatological diseases.

**Conclusion:** This study revealed that the people of Hormozgan province have a rich knowledge of natural resources. The use and consumption of medicinal plants are still important parts of their life. Rational use of native medicinal plants may benefit and improve their living standards and quality of life. The results of this study can be used as a basis for selecting herbs for further pharmacological, phytochemical, and pharmacognostical studies.

**Keywords:** Ethnobotany, Hormozgan, Iran, Medicinal Plants, Persian Gulf

---

1- Bandar Abbas School of Medicine, Hormozgan University of Medical Sciences, Bandar Abbas, I. R. Iran

2- Hormozgan Agricultural and Natural Resource Research Center, Bandar Abbas, I. R. Iran

3- School of Pharmacy, Isfahan University of Medical Sciences, Isfahan, I. R. Iran

4- District One Education Department, Isfahan Education Administration, Isfahan, I. R. Iran

5- Pharmaceutical Sciences Research Center, Isfahan University of Medical Sciences, Isfahan, I. R. Iran

\*Corresponding Author: Tel: +983117922643; Fax: +983116680011

E-mail: ghannadi@pharm.mui.ac.ir

## Ethnobotany of Hormozgan Province

### Introduction

Ethnobotany, understanding of knowledge systems through using anthropological methods, and ethnomedicine, as its branch are as old as man himself. Ethnobotany and ethnomedicine consider the collection of useful medicinal plants by a group of people and describing different uses of them. Utilizing plants for medicinal purposes has been done since the dawn of man (Namsa et al., 2011; Oliveira et al., 2011). Little by little people observed special interesting effects from each plant. Some of these people became experts in treating several ailments and illnesses using efficient plants and then they passed their knowledge to others verbally or by personal experiences (Kunwar et al., 2010; Zolfaghari et al., 2012). During this processes some information may be lost, vanished, or forgotten due to the society modernization so in this study we decided to collect these valuable documents and traditional knowledge in one of the southern provinces of Iran, Hormozgan. As a result, we can improve the quality of life and living standards of the native people by rational and standard using of medicinal plants along with effective synthetic drugs (Namsa et al., 2011; Oliveira et al., 2011).

Nowadays, almost 80% of world population uses medicinal plants for their primary healthcare needs because they are effective, cheap, and available (WHO, 2007). About 70,000 plant species are used in traditional medicine and nearly a tenth part of them are used in Asia. Iran which is located in southwest Asia, in the northern hemisphere, contains rich ecosystems and biodiversity due to the various climatic conditions and geographical characteristics (Bhattarai et al., 2010; Mirdeilami et al., 2011; Naghibi et al., 2005). Iran is surrounded by three seas and a passage toward the oceans. The flora of the country contains more than 8000 species and several of them are used in traditional Iranian

medicine (Ghahreman, 1973; Namsa et al., 2011; Sabzian, 2008). A few ethnobotanical researches have been done in Iran and there is no previous published records on ethnobotanical knowledge from the Hormozgan province (Amin, 1991; Ghassemi Dehkordi et al., 2012; Gholassi Mood, 2008; Ghorbani, 2005; Ghorbani et al., 2006; Mazandarani, 2006; Miraldi et al., 2001; Mirdeilami et al., 2011; Mosaddegh et al., 2012; Naghibi et al., 2005; Shams Ardekani et al., 2011; Sharififar et al., 2010; Shokri and Safaian, 1993; Soltanipoor, 2005; Zolfaghari et al., 2012).

### Geographical and historical overviews

Hormozgan province district is situated in the southeast of Iran (Figure 1). More than 70% of the province is covered by mountains and hills thus it is a mountainous region (IGA, 1983; Zaeifi, 2001). The district is bounded by Kerman province in the north and northeast, Fars and Bushehr provinces in the west and northwest and Sistan and Baluchestan province in the east. The southern parts of this province which is surrounded by warm waters of the Persian Gulf and Oman Sea is approximately 900 km. This province is located between northern latitude 25° 24' to 28° 57' and eastern longitude 53° 41' to 59° 15'. It occupies an area of 70697 km<sup>2</sup> (IGA, 1983; Sabzian, 2008; Mozaffarian, 1991; Soltanipoor, 2005; Zaeifi, 2001).

The history of Hormozgan province is mixed with the history and geography of the Persian Gulf. Hormoz straight, one of the today's most sensitive and vital waterways, is situated in political territory of this province. Bandar-Abbas, Bandar Lengeh, Minab, Bandar Charak, Bandar Jask, Roudan, Khamir, Parsian, Sirik, Hadji-Abad, Kish, Hormoz, Abu-Moosa, and Gheshm islands constitute the famous townships and areas of the province. Bandar Abbas is the capital of Hormozgan province and Gheshm is the

largest island of the Persian Gulf (Soltanipoor, 2006; Sabzian, 2008; Attar et al., 2004; Shahi et al., 2011).



Figure 1. Map of the study area (Hormozgan province, south of Iran, bordering waters of the Persian Gulf and Oman Sea) (Zaeifi, 2001; Sabzian, 2008).

### Climate and vegetation types

Three types of climate exist in this province. The natural vegetation is forest, rangeland, and desert. Relatively high humidity, irregular, and little rainfalls with hot weather result in growing some special and native plants. Several of these plants are being used for medical purposes by indigenous people (IGA, 1983; Soltanipoor, 2005; Zaeifi, 2001). The average temperature affected by humidity is moderate and rarely

gets higher than 45 °C in summers. In the deserts, the temperature is about 0 °C but there is no frigid weather in winters. The annual rainfall is less than 250 mm and relative humidity is more than 80% (IGA, 1983; Morid et al., 2001; Sabzian, 2008; Zaeifi, 2001).

There are 900 plant species in the province that too many of them are medicinal. Different climate conditions result in growing of specific plants such as special marine plants and mangrove (*Avicennia marina*) forests which are very rare (Mozaffarian, 1991; Soltanipoor, 2005; Zaeifi, 2001). Iranian Mangrove forests as unique and highly productive ecosystems of the world were recorded in the Persian Gulf and Oman Sea by Eratosthenes, who was a great geographer about 2300 years ago. Iran has the highest acreage of natural mangrove forest (Ghasemi et al., 2010; Sabzian, 2008).

### Materials and Methods

Data collection and field trips were arranged in order to collect information about traditional and folk knowledge of medicinal plants by the local inhabitants, native practitioners, and old people for the treatment or prevention of several ailments. Direct interviews with local people especially those who were more familiar with the herbs and their usage, were the main method. Ethnobotanical data sheets were used to document the medicinal knowledge by holding the direct interviews with people and gathered information was checked again with the people of other neighboring areas (Bhattarai et al., 2010; Mosaddegh et al., 2012; Shariffar et al., 2010; Zolfaghari et al., 2012).

All collected plant specimens were dried, pressed and authenticated with the help of available literature and flora (Ghahreman, 1973; Rechinger, 1982). After the scientific name identification of the plants, the

## Ethnobotany of Hormozgan Province

specimens were deposited in the herbarium of Hormozgan Agricultural and Natural Resource Research Center, Bandar Abbas. The popular names of plants as well as their pronunciations were recorded.

### Results

In this paper information of 150 medicinal plant species were collected. This

information contains scientific names, family names, local names, medicinal parts used, ways of their application, and traditional uses of them. A part of therapeutic properties of the mentioned plants were found in scientific resources and literature. This could be valuable since people use these plants because of their local useful effects. The information was sorted in Table 1 alphabetically.

No.	Scientific name	Family name	Local or official name	Part(s) used	Ways of application	Uses/ Ailments treated
1.	<i>Abutilon fruticosum</i> Guill. & Perr.	Malvaceae	Garshem	Flower, leaves, seed	Decoction fresh organ	Wound, acne, pustule, cold, emollient, bronchitis
2.	<i>Abutilon hirtum</i> (Lam.) Sweet	Malvaceae	Sherbejan	Flower, leaves, seed	Decoction fresh organ	Cold, bronchitis, emollient, acne, wound, pustule, wound healing
3.	<i>Abutilon muticum</i> (Delile ex DC.) Sweet	Malvaceae	Kharmalchook	Seed, flower, leaves	Decoction fresh organ	Wound healing, acne, pustule, cold, bronchitis, emollient
4.	<i>Acanthophyllum</i> <i>bracteatum</i> Boiss.	Caryophyllaceae	Chubake bargdar	Root	Brew poultice powder	Decongestant, diuretic, wound healing, joint pain, sciatica, emmenagogue
5.	<i>Acanthophyllum</i> <i>squarrosum</i> Boiss.	Caryophyllaceae	Chubakeriz	Root	Brew poultice powder	Cold, joint pain, sciatica, gluteus pain, wound healing, diuretic, kidney stones
6.	<i>Achillea eriophora</i> DC.	Compositae	Benjerashk, berenjasf, sarzatdu	Flower, leaves	Poultice powder	Antipyretic, insects bite, bee bite, snake bite, scorpions bite, wound healing, bleeding
7.	<i>Achillea wilhelmsii</i> C. Koch	Compositae	Gol sarbarze, Sarbarze, sarbarde, sarzard	Aerial parts esp. flower	Decoction powder	Diarrhea, stomachache, fever, bile, anti-parasite, snake bite, scorpions bite, muscle tonic, fatigue in newly delivered ladies, headache, cold
8.	<i>Aerva persica</i> Merr.	Amaranthaceae	Porzu, ethag, gormenaku	Leaves	Powder	Wound

9.	<i>Alyssum homalocarpum</i> Boiss.	Cruciferae	Ghodume	Seed	decoction	Intestine emollient
10.	<i>Ammi majus</i> L.	Umbelliferae	-	Seed	Brew powder	Flatulency, diuretic, carminative, tonic, digestant, dyspepsia
11.	<i>Amygdalus lycoides</i> Spach	Rosaceae	Kutur, kulem	Aerial parts	Decoction fresh organ	Headache, burning wounds
12.	<i>Amygdalus scoparia</i> Spach	Rosaceae	Badam talkh	Twigs, resin	Decoction fresh organ	Pain of different parts, back pain, foot pain, pertussis
13.	<i>Anagalis arvensis</i> L.	Primulaceae	Gol nili, naem, golbadami, mash koshu, chehm kagu	Aerial parts	Brew poultice decoction	Nephritis, insect bites, jaundices, diuretic, painful wounds, bile wound healing, expectorant, chest & urination disease
14.	<i>Anchusa italica</i> Retz.	Boraginaceae	Gavzaban, gavzabane koohi	Leaves	Decoction	Cold, sore throat, chest pain
15.	<i>Andrachne aspera</i> Spreng.	Euphorbiaceae	Darmamaron	Stem	Fresh organ	Pterygium
16.	<i>Artemisia Aucheri</i> Boiss.	Compositae	Deraym koohi	Leaves	Fresh organ powder	Stomachache
17.	<i>Artemisia scoparia</i> Waldst. & Kit	Compositae	Salbaku, muleng, omeabid	Leaves	Decoction fresh organ	Flatulency in children, joint pain & rheumatism, hydrocele
18.	<i>Arundo Donax</i> L.	Gramineae	Ghamish	Root rhisome	Decoction	Alopecia , diuretic
19.	<i>Astragalus fasciculifolius</i>	Papilionaceae	Gonza, chetat, genjar	Resin	Powder	Cold, fatigue, tightening bone fractures
20.	<i>Astragalus mucronifolius</i> Boiss.	Papilionaceae	Genjarekhari	Root	Decoction	Back pain, bone fracture
21.	<i>Avicennia marina</i> (Forssk.) Vierh.	Avicenniaceae	Harra	Fruit Root resin	Poultice fresh organ	Snakebite, contraception, sexual stimulant, sexual enhancing, abscess, blotch & wound
22.	<i>Bienteria cycloptera</i> Bunge	Chenopodiaceae	Andere, samsil, samsul	Leaves	Decoction	Hyperlipidemia, hyperglycemia
23.	<i>Blepharis persica</i> (Burm.) O. Kuntze	Acanthaceae	Joojadoo, kisedokhtan	Leaves, seed, root	Fresh organ	Appetizing, astringent, energizer, tonic, mental discomforts, diuretic, styptic, anti-inflammatory, antitussive, hepatic and splenic discomforts

## Ethnobotany of Hormozgan Province

24.	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Shabrangeiafshan	Leaves, root	Fresh organ	Joint pain, appetizing, tonic, expectorant, carminative, diuretic, jaundice, internal inflammation, edema
25.	<i>Brassica Tournefortii</i> Gouan	Cruciferaea	Kalam	Aerial parts	Fresh organ	Food additive, appetizing
26.	<i>Bunium persicum</i> (Boiss.)	Umbelliferae	Zireh	Seed	Decoction powder	Toxicity, antitussive, decongestant, children earache, newly delivered ladies recovery
27.	<i>Capparis cartilaginea</i> Decne	Capparidaceae	Kavarzeh barg pahn, naloostak	Leaves, fruit	Fresh organ	Rheumatism, joint pain, wounds
28.	<i>Capparis deciduas</i> (Forssk.) Edgew.	Capparidaceae	Kalir	Leaves, twig	Powder	Antipyretic
29.	<i>Capparis spinosa</i> L.	Capparidaceae	Konar eshkal, karaveng, kavarzah	Leaves, fruit	Fresh organ	Joint pain, rheumatism, abdominal pain
30.	<i>Capsella bursa- pastoris</i> (L.)	Cruciferae	Looseroo, loosiroo	Leaves, stem, latex	Poultice fresh organ	Bleeding, superficial inflammations, wound healing
31.	<i>Caralluma edulis</i> Benth.	Asclepiadaceae	Doghabis, howraghu	Stem, succulent stem	Fresh organ	Parasitic diseases, used as vegetable
32.	<i>Caralluma oxyacantha</i>	Compositae	Karajusk, hesk, karala, kharkala	Leaves	Decoction	Kidney pain
33.	<i>Caralluma tuberculata</i>	Asclepiadaceae	Moghmaar, maarangoosh	Succulent stem	Fresh organ	Parasite repellent
34.	<i>Cassia italica</i> (Miller) F.W. Andrews	Caesalpinaceae	Setaap,hashi, kowsen,kowchen, gush ahu , setaag,	Leaves	Powder	Laxative, cathartic
35.	<i>Centaurea Bruguierana</i> (DC.)	Compositae	Balehbord, badavard, badavardeh, kharkharangoo	Leaves, flower	Decoction	Headache, antipyretic, anti- scorpions bite
36.	<i>Centaurium tenuifolium</i> (Hoffm. & Link) Fritsch	Gentianaceae	Ghontorion	Flower, leaves	Brew fresh organ	Wound healing, hepatic and nephritic distress, jaundice, young girls anemia, diabetes, eczema
37.	<i>Cleome brachycarpa</i> Vahl. ex DC.	Capparidaceae	Glepar, ruzgardesh	Aerial parts esp. leaves & stems	Decoction powder	Toxicity of snake bite & scorpions bite
38.	<i>Cocculus pendulus</i> (J.R. & G. Forst.) Diels	Menispermaceae	Zamoor, zamer	Root	Decoction	Antipyretic

39.	<i>Convolvulus glomeratus</i> Choisy	Convolvulaceae	Pichak	All parts	Fresh organ	Cathartic
40.	<i>Convolvulus leptocladus</i> Boiss.	Convolvulaceae	Rontazg	Root	Powder	Cathartic
41.	<i>Convolvulus spinosus</i> Burm.	Convolvulaceae	Pichak khari	Flower	Fresh organ	Cathartic, antiparasite
42.	<i>Conyza Canadensis</i> (L.) Cronq.	Compositae	Pirbaharakebagh	Whole plant esp. leaves	Brew	Wound healing, kidney stones, bleeding during menstruation, elimination of female secretions
43.	<i>Corchorus tricularis</i>	Tiliaceae	Katan	All aerial parts	Decoction fresh organ	Emollient
44.	<i>Cornulaca monocantha</i>	Chenopodiaceae	Javen, sekhar, kharune	Leaves	Fresh organ	Snake bite, scorpion bite, bee bite, wound healing
45.	<i>Cotoneaster kotschyi</i> Klotz	Rosaceae	Shirkhesht	Fruit	Decoction	Jaundice, cooling
46.	<i>Cymbopogon Olivieri</i> (Boiss.) Bor	Gramineae	Paashaam, nagerd, zeghbar, maade	Green leaves	Decoction	Cooling, stomachache, bone pain, fever lowering, measles, cold
47.	<i>Cyperus rotundus</i> L.	Cyperaceae	Pizg	Rhizome, root	Decoction fresh organ	Dysentery, diuretic, gastric ailments, diarrhea, menstruation inducer, sweating inducer, parasite repellent, wound healing, pruritus, appetizing
48.	<i>Dalbergia sisso</i> Roxb.	Papilionaceae	Jak	Stem bark	Decoction	Tonic, appetizing, abortion, emollient, indigestion, dysentery, antiparasite
49.	<i>Daphne oleoides</i> Schreb.	Thymelaeaceae	Terbid, terbit	Peel, stem, leaf	Decoction fresh organ	Antipyretic, elimination of the pruritus & pain of a kind of insect bite called sisko
50.	<i>Datura innoxia</i> Miller	Solanaceae	Megena, permengenas, kopakemengenas	Leaves, flower, seed	Decoction brew	Demulcent in asthmatic patients, cutaneous disease, washing swelling feet, antitussive
51.	<i>Demostachia bipinnata</i> L.	Graminae	Kertaki, kertah	Root	Fresh organ	Jaundice, peptic discomforts, emesis, nephritic disease, rash, kidney stones
52.	<i>Dionysia revolutea</i> Boiss.	Primulaceae	Esfande mohammadi, gazir, gurzi	Aerial parts	Decoction Fresh organ powder	Antiseptic, wound healing, gastric distress, stomachache, joint pain, insect bite, emollient in cold, ecchymosis, fatigue
53.	<i>Dodonaea viscosa</i> (L.) Jacq.	Sapindaceae	Shahaf, mordang, nader, naterak	Leaves	Fecoction fresh organ	Headache, bone pain, foot pain, papule & blotch healer

## Ethnobotany of Hormozgan Province

54.	<i>Echinops Aucheri</i> Boiss.	Compositae	Shekar kooch	Resin	Decoction	Emollient in cold & pectoralgia, laxative
55.	<i>Eclipta prostrate</i> (L.) L.	Compositae	Masture khabideh	Aerial parts	Decoction fresh organ	blood purifier
56.	<i>Ephedra major</i> Host	Ephedraceae	Houm	Stem, root, fruit	Decoction	Rheumatism, syphilis, respiratory ailments
57.	<i>Erodium cicutarium</i> (L.) L'Her.	Geraniaceae	Sikh shabgard	Root	Decoction	Toothache
58.	<i>Euphorbia larica</i> Boiss.	Euphorbaceae	Paah, paragh	Latex	Fresh organ	Wound healing
59.	<i>Euphorbia osyridea</i> Boiss.	Euphorbiaceae	Rutazgh	Root	Fresh organ	Constipation
60.	<i>Euphorbia turcomanica</i> Boiss.	Euphorbiaceae	-	Leaves	Fresh organ	Cold
61.	<i>Ferula assa-foetida</i> L.	Umbelliferae	Heng, anghuzeh, angosht gande, engez	Resin or latex, root	Powder	Insect repellent, wound healing, ear ache, antiseptic, parasite repellent
62.	<i>Fortuynia bungei</i> Boiss.	Cruciferae	-	Seed, twig	Fresh organ	Bone pain, joint aches, flatuosity
63.	<i>Francoeuria undulate</i> (L.) Lack	Compositae	Porz, tahre	Leaves	Fresh organ	Children complaints
64.	<i>Fumaria parviflora</i> Lam.	Fumariaceae	Shahtareh, shatareh	Leaves, stem	Decoction	Pain relief, back cramps, infected wound, skin disease, stomachache
65.	<i>Gailonia Aucheri</i> Jaub. Spach	Rubiaceae	Toosoo, boogandoo, titisko, khargol, kartos	Leaves, twig, flower	Fresh organ brew	Toothache, rheumatism, flatuosity, diarrhea, gonalgia, gnathitis
66.	<i>Geranium rotundifolium</i> L.	Geraniaceae	Suzanuk	Root	Fresh organ	Diarrhea, diuretic, astringent
67.	<i>Gisekia pharnaceoides</i> L.	Molluginaceae	-	All parts	Fresh organ Powder	Digestant, anti-parasite, wound healing, appetizing, bronchitis, cutaneous discomforts, edema of nose mucous, anti parasite
68.	<i>Glaucium flavum</i> Crantz	Papaveraceae	Shaghayegh shakhdarezard	seed	Powder	Laxative
69.	<i>Glossonema variance</i> Decne	Asclepiadaceae	-	Fruit	Fresh organ	Cooling, digestant
70.	<i>Glycyrrhiza glabra</i> L.	Papilioceae	Shirinbayan, choobshirin, mahak, marah	Leaves, stem, root	Fresh organ decoction	Joint pain, measles, gastric ulcer, duodenum ulcer, cold

71.	<i>Grantia Aucheri</i> Boiss.	Compositae	Halamook, halamooogh, kalmir, talpik nar, kalmuru	Leaves	Fresh organ	Pain
72.	<i>Grewia tenax</i> (Forssk.) Fiori	Tiliaceae	Pootooroo, pootroo	Stem	Decoction	Cough, flank pain
73.	<i>Hammada saliocornica</i> (Moq.) Lijin.	Chenopodiaceae	Zaaz, jar, terat, peshker, rems, jaru	Leaves	Fresh organ decoction	Antipyretic, sensitivity of bees bite, wound healing
74.	<i>Heliotropium bacciferum</i> Forssk.	Boraginaceae	Aftabparast, ramram, defrak, rafetork, debrak, mispara	Aerial parts	Fresh organ	Wound bleeding, wound healing
75.	<i>Heliotropium europaeum</i> L.	Boraginaceae	Kolohmu, balghandu	Leaves, flower, seed, twigs	Brew fresh organ	Gout, cardiac tonic, headache, kidney stone, worm repellent
76.	<i>Herniaria hirsuta</i> L.	Paranychiaceae	Alafe fatgh kork alud	Aerial parts	Decoction brew	Washing wound & eye, kidney stone, almost all of kidney & bladder diseases, jaundice, female secretion
77.	<i>Hippocrepis unisilliquosa</i> L.	Papilionaceae	Naal asbi	Aerial parts	Fresh organ	Wound healing
78.	<i>Hymenocarpus circinnatus</i> (L.) Savi	Papilionaceae	-	Aerial parts	Fresh organ	Abscess
79.	<i>Hyoscyamus muticus</i> Bornm.	Solanaceae	Bazrollbanj	Seed	Smokes fumes	Toothache
80.	<i>Juniperus excelsa</i> M.B.	Cupressaceae	Ouras, abras, aras, hooras, gazkooh	Leaves, fruit	Decoction fresh organ	Rheumatism, dermal allergies, joint pain, back pain, foot pain, earache, diarrhea
81.	<i>Lagoecia cuminoides</i> L.	Umbelliferae	-	Aerial parts	Fresh organ	Bile stone repellent
82.	<i>Lallemantia royleana</i> Benth.	Lamiaceae	Balangu	Seed	Powder	Gum bleeding, psychotic disease, tonic
83.	<i>Launaea nudicaulis</i> (L.) Hook. f.	Compositae	Kahusa	Leaves	Fresh organ	Fever in children
84.	<i>Launaea procumbens</i> (Roxb.)	Compositae	Bonmoghi, nonak	Leaves	Fresh organ	Urination difficulty in children
85.	<i>Lavandula stricta</i> Del.	Lamiaceae	Ostokhodoos, ghadaar	Aerial parts	Fresh organ decoction	Rheumatism, cold, bone pain, carminative, abdominal cramps
86.	<i>Leptadenia pyrotechnica</i> (Forssk.)	Asclepiadaceae	Shahm nar, shahm oshtori, garishahk	Aerial parts	Powder	Carminative, wart, cutaneous fungal disease

## Ethnobotany of Hormozgan Province

87.	<i>Lycium Shawii</i> Roemer & Schult	Solanaceae	Dehir, zirok, dish	Twigs, leaves, fruit	Decoction	Gastric ailments, wound healing
88.	<i>Malva parviflora</i> L.	Malvaceae	Zazagh, sholaki	Seed	Decoction	Cold
89.	<i>Mentha longifolia</i> (L.) Hudson	Lamiaceae	Poden, pishe	Leaves, root	Decoction fresh organ brew	Carminative, diarrhea, cold, gastric ailments, stomachache, headache, antipyretic
90.	<i>Mentha mozaaffariani</i> Jamzad	Lamiaceae	Poden kuhi	Leaves, twigs	Brew fresh organ	Cooling, diarrhea, stomachache, headache, carminative
91.	<i>Mesembryanthemum</i> <i>nodiflorum</i> L.	Aizoaceae	Hooshalang, ria, kheizaran,	Aerial parts	Decoction	Hives
92.	<i>Micromeria persica</i> Boiss.	Lamiaceae	Ovshen estaku	Leaves	Decoction	Acute fever, cold, stomachache, bone pain, carminative, abdominal discomforts
93.	<i>Myriophyllum</i> <i>verticallatum</i> L.	Haloragaceae	Partavoosi	Leaves	Fresh organ	Antipyretic, chronic dysentery, children cold
94.	<i>Nannorhops</i> <i>Ritchieana</i> H. Wendl.	Palmae	Daaz	Young leaves	Fresh organ	Diarrhea
95.	<i>Nerium indicum</i> Miller	Apocynaceae	Gish, kharzahreh	Leaves, latex	Fresh organ	Joint pain, gonalgia, foot pain, foot & hand edema remedy
96.	<i>Ochradenus Aucheri</i> Boiss.	Resedaceae	Shahm	Twigs, fruits	Brew decoction fresh organ	Stomachache, neck pain, pectoralgia
97.	<i>Otostegia Aucheri</i> Boiss.	Lamiaceae	Mesvake joojeh tighi	Root	Brew decoction fresh organ	Hair tonic, strengthening gums, dental cleaning & brightness, prevention of hair loss
98.	<i>Otostegia persica</i> (Burm.) Boiss.	Lamiaceae	Golgoder, gol khari, khoransh, golder	Leaves, flower, thistle	Brew decoction fresh organ	Cardiac distress, reducing palpitation, regulating blood pressure, laxative, carminative, antipyretic, cough, headache, gastric discomfort, parasite repellent
99.	<i>Pentatropis spiralis</i> (Forssk.) Decne.	Asclepiadaceae	Shahm	Roots	Decoction	Astringent, tonic, cooling, gonorrhoea
100.	<i>Pergularia tomentosa</i> L.	Asclepiadaceae	Keshtu, helayah, labashir	Leaves	Powder fresh organ	Remedy for wounds in scorpions bite, wound healing
101.	<i>Perovskia</i> <i>artemisioides</i> Boiss.	Lamiaceae	-	Seed	Fresh organ	Rash, bone pain

102.	<i>Phragmites australis</i> (Cav.) Trin. Ex Steud.	Gramineae	Ney, ghalam	Root	Brew	parasitic disease of stomach & intestine, flatulency
103.	<i>Physalis divaricata</i> D. Don.	Solanaceae	Kank	Leaves	Fresh organ	Abdominal pain in children
104.	<i>Pistacia atlantica</i> Desf.	Anacardiaceae	Sogand, bane, gan	Leaves, flower, resin	Decoction fresh organ powder	Acne, diarrhea, septic sore throat, back pain, old wounds, expectorant, infant GI tonic, children flatulency, anti rash, chest pain
105.	<i>Plantago amplexicaulis</i> Cav.	Plantaginaceae	Sialdaneh, danich, lajane, spioosh	Aerial parts	Powder Decoction syrup	Diarrhea, chest pain, strengthening children skeleton, stomachache, heatstroke, wounds, edema repellent
106.	<i>Platychaete glaucescense</i> (Boiss.) Boiss.	Compositae	Khormakharoo, m angoru, mangolo, kaskekharu	Leaves	Powder decoction	Wound healing, stomachache
107.	<i>Prosopis cineraria</i> (L.) Durce	Mimosaceae	Kahoor	Leaves, flower, resin	Fresh organ powder	Cutaneous fungal disease, wound healing, anemia in pregnant women, diarrhea
108.	<i>Pteropyrum Aucheri</i> Jaub. & Spach	Polygonaceae	Parand, patant, ostaparang, sidaf	Leaves, flower, root, stem	Decoction fresh organ	Bone, hand, leg & Knee pain, toothache, headache, back pain, wound healing, washing wounds
109.	<i>Pycnocycla Aucherana</i> Decne. Ex Boiss.	Umbelliferae	Sagdandan	Leaves, stem	Fresh organ	Back, leg & other part muscles pain
110.	<i>Ranunculus muricatus</i> L.	Ranunculaceae	Alale	Aerial parts	Fresh organ	Antipyretic
111.	<i>Reseda Aucheri</i> Boiss.	Resedaceae	Domroobahi, roogardesh, roozgardesh, gona vak, gararuz, dun eshtoru, gadukh	Leaves	Fresh organ	Remove the toxicity & sensitivity of snake bite, insect bite, scorpions bite
112.	<i>Rhazya stricta</i> Decne.	Apocynaceae	Eshvarak, kheshbarg, isur	Leaves	Decoction fresh organ	Bone pain, rheumatism, joint pain, toothache, eye pain
113.	<i>Rhizophora mucronata</i> Poir.	Rhizophoraceae	Chandal, chantela	Stem bark	Powder	Wound healing
114.	<i>Rumex dentatus</i> L.	Polygonaceae	Naazdolat	Seed	Decoction	Menstruation regulator, stops bleeding during menstruation
115.	<i>Salvadora persica</i> L.	Salvadoraceae	Chooch, chooj, raak, derakhte mesvak	Leaves, root	Toothpick	Headache, joint pain, cleaning teeth, strengthening gum

## Ethnobotany of Hormozgan Province

116.	<i>Salvia macrosiphon</i> Boiss.	Lamiaceae	Buing	Seed	Powder	Weakness, regulating cardiac action during pregnancy, lethargy after child birth
117.	<i>Salvia Mirzayanii</i> Rech. F. & Esfand.	Lamiaceae	Moortalkh, marve tahl, shir ghanam, mor porzu	Leaves	Powder decoction	Heart burn, diarrhea, emesis, stomachache, abdominal pain, flatulency, cooling, hyperlipidemia, hyperglycemia, jaundice, joint pain, headache, wound healing, scorpions scurry
118.	<i>Salvia Sharifii</i> Rech. F. & Esfand.	Lamiaceae	Borzoi, borooj, babriz, marmarashk	Seeds	Powder Decoction syrup	Emollient, cooling, wounds, diarrhea
119.	<i>Samolus Valerandi</i> L.	Primulaceae	Alaf juibari	All parts	Decoction	Astringent
120.	<i>Scorzonera paradoxa</i> Fisch. & C.A. Mey.	Compositae	komboluh	Bulb	Fresh organ	Laxative
121.	<i>Solanum incanum</i> L.	Solanaceae	Limoo aboojahl, limoo torgi, genj torgi, gelgelengak tourgi	Fruit, seed	Decoction	Wound, blotch, pustule treatment
122.	<i>Sonchus asper</i> (L.) Hill	Compositae	Shirtighak	Leaves, root, stem, flower, fruit	Fresh organ	Earache, asthma, chest discomforts, organ inflammation
123.	<i>Sophora mollis</i> (Royle) Backer	Papilionaceae	Talkhak, kalkhak	Root, seed, leaves	Decoction poultice	Cholera, irregular bile secretion, laxative, cathartic
124.	<i>Stachys inflata</i> Benth	Lamiaceae	Mohrkhari	Leaves	Decoction powder	Stomachache
125.	<i>Suaeda fruticosa</i> (L.)	Chenopodiaceae	Jar, kakol masilela	Leaves	Decoction	Jaundice
126.	<i>Tamarix dioica</i> Roth.	Tamaricaceae	Gaz	Stem bark, gall leafy branches	Poultice	Astringent, diarrhea, dysentery, cough, wound
127.	<i>Tamarix masqatensis</i> Bge.	Tamaricaceae	Gaz, gaze roodkhaneh, gazak	Leaves	Decoction	Joint pain, bone pain, softening muscle
128.	<i>Tanacetum fruticosum</i> Ledeb.	Compositae	Dermene shah	Leaves	Fresh organ	Stomachache, abdominal pain, flatulency
129.	<i>Taverniera spartea</i> (Burm. f.) DC.	Papilionaceae	Laati, horosh nar	Stem	Decoction	Bone fractures
130.	<i>Tecomella undulate</i> (Roxb.) G. Don.	Bignoniaceae	Anare sheytani, anare aboojahl	Whole plant	Fresh organ	liver and gastrointestinal diseases

131.	<i>Tephrosia persica</i> Boiss.	Papilionaceae	Madkinak, bolbolengu	Leaves	Fresh organ	Scorpions bite, snake bite treatment
132.	<i>Teucrium orientale</i> (L.)	Lamiaceae	Golmaash	Leaves, flower	Decoction	Hoarseness
133.	<i>Teucrium pollium</i> L.	Lamiaceae	Kerishk, kalpuru	Flower, leaves, seed	Powder decoction Fresh organ	Stomachache, abdominal pain, flatulency, diarrhea, regulating blood pressure, menstruation in newly born ladies, measles, eye pain, headache, scorpions bite, snake bite, wound healing
134.	<i>Teucrium stocksianum</i> Boiss.	Lamiaceae	Kalpure kuhu, krishk daii	Leaves	Decoction Powder Fresh organ	Stomachache, abdominal pain, flatulency, toxicity, emesis, stomach acidification, regulating blood pressure, lipid lowering, newly born ladies recovery
135.	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Vizakh, gooshe gorbeh	Whole plant	Powder	Cathartic, laxative, anemia, hemorrhoid, polydipsia, inflammation, pain relief, stomach tonic
136.	<i>Tribulus macropterus</i> Boiss.	Zygophyllaceae	Naalook	Leaves, flower, fruit	Decoction	Kidney pain & discomfort
137.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Kharkhasak, naalook, golezarde khaari	Leaves	Decoction	Kidney pain
138.	<i>Trichodesma africanum</i> (L.) R. Br.	Boraginaceae	Charmaahang	Root, leaves	Brew decoction	Cold, tightening bone fracture, abdominal pain, mouth ulcers, measles, scarlet fever, chickenpox, headache, emollient, chest congestion, children constipation
139.	<i>Vitex agnus-castus</i> L.	Verbenaceae	Bangela	Leaves, fruit, flowering twigs	Brew decoction	Cold, carminative, energizer, sedative, anticonvulsant, reducing libido
140.	<i>Vitex Negundo</i> L.	Verbenaceae	Bangela	Leaves, root, stem bark	Fresh organ	Toothache, rheumatism, carminative, anti-worm
141.	<i>Vitex trifolia</i> L.	Verbenaceae	Felfel khari, bamplusakh	Seed	Fresh organ	Ant repellent
142.	<i>Withania coagulans</i> (Stocks) Dun.	Solanaceae	Kheshtbargekaser gkani	Fruit, seed	Fresh organ	Sedative, diuretic, dyspepsia, flatulency, intestine disorders, emetic, antidote
143.	<i>Withania somnifera</i> (L.) Dun.	Solanaceae	Mayepanir	Fruit	Fresh organ	Migraine, digestive disorders, hypnotic

## Ethnobotany of Hormozgan Province

144.	<i>Zataria multiflora</i> Boiss.	Lamiaceae	Oshen, azgand	Leaves	Powder Brew Fresh organ	Cold, diarrhea, stomachache, carminative, chest pain, headache, toothache, wound healing, fatigue, antipyretic, bone pain, earache, measles, reducing blood lipid & glucose
145.	<i>Zhumeria Majdae</i> Rech. F. & Wendelbo	Lamiaceae	Moorkhash, marvkhsh, moorkhosh	Leaves	Powder Decoction fresh organ	Stomachache
146.	<i>Ziziphora tenuir</i> L.	Lamiaceae	Kakooti, golmoshkoo, ostokhodus, mongorush, hard angoshh	Aerial parts	Brew decoction	Gastric discomfort, cold, fever, diarrhea
147.	<i>Ziziphus jujuba</i> Mill.	Rhamnaceae	Annab	Fresh fruit, dried fruit	Decoction	Laxative, sedative, diuretic, emollient, chest disease
148.	<i>Ziziphus nummularia</i> (Burm. F.) Wight & Arn.	Rhamnaceae	Ramalik	Leaves, fruit	Decoction Fresh organ	Acne, sore throat, bleeding gums, joint pain, appetizing, gastric tonic
149.	<i>Zygophyllum</i> <i>qatarense</i> Hadidi	Zygophyllaceae	Shirmerku	Leaves, twigs	Powder Fresh organ	Wound healing, earache
150.	<i>Zygophyllum simplex</i> L.	Zygophyllaceae	Ghich	Seed, leaves	Brew	Eye disorders, worm killing

### Discussion

There are good network and several phytopharmaceutical industries and a technical wealth of botanical and herbal medicine experts available in Iran, however there has been little effort to document the volume and impact of medicinal plants in this country. More successful efforts are in progress about these fields. The Traditional Medicine Chancellery in the Iranian Ministry of Health and Medical Education was established in 2012 and for the first time in Iranian medical history, offering the postgraduate PhD degrees in Persian traditional medicine and traditional pharmacy sciences in Iranian universities of medical sciences were started from six years ago.

Hopes to find more achievements especially in the ethnobotany and ethnomedicine disciplines are flourishing.

By doing this ethnobotanical research and after discussions with the people of Hormozgan province it was learnt that they are very close to the nature like other parts of Iran and the plants listed in the Table 1 are very much used by them for the variety of ailments. The recorded information revealed that the painful ailments, gastrointestinal, and dermatological disorders are in the top list of diseases that are treated by native plants. Plant specimens were belonging to 53 families and the most representative families were Lamiaceae and Compositae with 18 and 17 species, respectively, followed by

Papilionaceae, Solanaceae, Asclepiadaceae and Umbelliferae, each with less than ten species.

The ethnobotanical usage of medicinal plants in this is interesting and monopolizing and leads researchers and other medical and pharmaceutical experts to investigate further ethnopharmacological and pharmacognostical investigations (Attar et al., 2004; Soltanipoor, 2005; Soltanipoor, 2006). In this way, some species may be used in herbal drug preparation after the confirmation of their therapeutic efficacy and extraction of their active natural ingredients. Although the indigenous knowledge about plants is very important and useful, clinical trials and pharmacological studies should be done to prove their definite phytotherapeutic effects (Kazemi et al., 2012; Kunwar et al., 2010; Ghassemi Dehkordi et al., 2012; Zolfaghari et al., 2012).

During this survey, we completed and compared traditional and folk medicines information using phytotherapeutic and medicinal plants books and literature (Amin, 1991; BHP, 1983; Boger et al., 2006; Emami et al., 2010; IHP, 2002; PDR, 2000; WHO, 2007). The uses of several of these plants are consistent with our latest pharmacognostical and pharmacological findings (Asadipour et al., 2003; Ghannadi et al., 2000; Ghannadi et al., 2010; Ghannadi and Davoodi, 2012a; Ghannadi et al., 2012b; Jaffary et al., 2000; Jaffary et al., 2004; Minaiyan et al., 2005; Mohagheghzadeh et al., 2000a; Mohagheghzadeh et al., 2000b; Mohagheghzadeh et al., 2004; Sadraei et al., 2003a; Sadraei et al., 2003b; Shams Ardekani et al., 2005; Soltanipoor et al., 2003).

There has been relatively little basic research on the plants of Hormozgan province, Iran. This paper indicates that indigenous herbal knowledge is still alive in Iran and local people of Hormozgan province

tend to use medicinal herbs and natural health products of their ecosystems for primary healthcare needs.

The ethnobotanical survey of Hormozgan province allowed us to document the persistency of a number of traditional uses of medicinal plants, most of them are unique and original and potentially interesting as a basis for future research works.

### Acknowledgment

This article was obtained from a research thesis and proposal from Hormozgan University of Medical Sciences (Reg. No.: 75/83/50). The authors would like to thank the moral and financial supports by this university and Hormozgan Agricultural and Natural Resource Research Center, Bandar Abbas. We are highly grateful to the warm local inhabitants and practitioners of Hormozgan province for their sincere contribution to this study and sharing their wisdom and great treasures of knowledge with the authors.

### Conflict of interest

There is not any conflict of interest in this study.

### References

- Amin Gh. 1991. Popular medicinal plants of Iran, Tehran, Publications of the Iranian Research Institute of Medicinal Plants.
- Asadipour A, Rezaei Z, Saberi-Amoli S, Amanzadeh Y, Ghannadi A. 2003. Volatile constituents of the aerial parts of *Cymbopogon olivieri* (Boiss.) Bor. from Iran. *J Essent Oil Bear Plant*, 6: 51-54.
- Attar F, Hamzeh'ee B, Ghahreman A. 2004. A contribution to the flora of Qeshm island, Iran. *Iran J Bot*, 10: 199-218.
- Bhattarai Sh, Chaudhary RP, Quave CL, Taylor RSL. 2010. The use of medicinal plants in the trans-Himalayan arid zone of Mustang

## Ethnobotany of Hormozgan Province

- district, Nepal. *J Ethnobiol Ethnomed*, 6: 1-11.
- Bogers RJ, Craker LE, Lange D. 2006. *Medicinal and Aromatic Plants*, pp. 155-170, Dordrecht, Springer.
- British Herbal Medicine Association. 1983. Bournemouth, British Herbal Pharmacopeia Publications.
- Emami SA, Fassihi Sh, Mehregan I, Mohammadpour AH, Taleb AM, Khalili H. 2010. *Medicinal plants, a complete source book*, Vol. 1, Tehran, Andisheh Avar Publications.
- Ghahreman A. 1973. *Flora of Iran in color*, Vol. 1-24, Tehran, Publications of Forests and Rangelands Research Institute.
- Ghannadi A, Ghassemi N, Sohrabi MJ. 2000. Isolation and structural elucidation of Iranian senna flavonoids. *Res Med Sci*, 5: 54-59.
- Ghannadi A, Sajjadi SE, Khayat Kashani M, Khayat Kashani M. 2010. Vinegar processed Zireh- Evaluation of chemical changes before and after treating of "*Bunium persicum*". *J Islam Iran Trad Med*, 1: 217-224.
- Ghannadi A, Davoodi N. 2012a. Miswak tree in Islamic medicine, traditional Iranian medicine and modern medicine. *Quarterly J Med History*, 3: 123-142.
- Ghannadi A, Rabbani M, Ghaemmaghani L, Malekian N. 2012b. Phytochemical screening and essential oil analysis of one of the Persian sedges- *Cyperus rotundus* L. *Int J Pharm Sci Res*, 3: 424-427.
- Ghasemi S, Zakaria M, Abdul-Hamid H, Yusof E, Danehkar A, Rajpar MN. 2010. A review of mangrove value and conservation strategy by local communities in Hormozgan province, Iran. *J American Sci*, 6: 329-338.
- Ghassemi Dehkordi N, Norouzi M, Safaei Aziz A. 2012. Collection and evaluation of the traditional applications of some plants of Jandagh. *J Islam Trad Med*, 3: 105-112.
- Gholassi Mood Sh. 2008. A contribution to some ethnobotanical aspects of Birjand flora (Iran). *Pak J Bot*, 40: 1783-1791.
- Ghorbani A. 2005. Studies on pharmaceutical ethnobotany in the region of Turkmen Sahra, north of Iran (Part 1)- general results. *J Ethnopharm*, 102: 58-68.
- Ghorbani A, Naghibi F, Mosaddegh M. 2006. Ethnobotany, ethnopharmacology and drug discovery. *Iran J Pharm Sci*, 2: 109-118.
- Iranian Geographical Administration. 1983. *Geographical culture of Bandar Abbas villages, Iran*, Vol. 122, Tehran, Iranian Ministry of Defence Publications.
- Iranian Herbal Pharmacopeia Scientific Committee. 2002. *Iranian Herbal Pharmacopeia*, 1st ed. Tehran, Iranian Ministry of Health and Medical Education Publications.
- Jaffary F, Ghannadi A, Siahpoush A. 2000. Anti-inflammatory effects of *Zataria multiflora* Boiss. *Res Med Sci*, 5: 6-9.
- Jaffary F, Ghannadi A, Siahpoush A. 2004. Antinociceptive effects of hydroalcoholic extract and essential oil of *Zataria multiflora*. *Fitoterapia*, 75: 217-220.
- Kazemi M, Eshraghi A, Yegdaneh A, Ghannadi A. 2012. Clinical pharmacognosy- a new interesting era of pharmacy in the third millenium. *Daru J Pharm Sci*, 20: 18.
- Kunwar RM, Shrestha KP, Bussmann RW. 2010. Traditional herbal medicine in far-west Nepal, a pharmacological appraisal. *J Ethnobiol Ethnomed*, 6: 1-18.
- Mazandarani M. 2006. Ethnobotany and folk pharmaceutical knowledge of the major trees and shrubs in north of Iran. *J Plant Sci Res*, 1: 1-7.
- Minaiyan M, Ghannadi A, Salehi E. 2005. Anti-ulcerogenic effect of *Zataria multiflora* Boiss. on cysteamine-induced duodenal ulcer in rats. *Iran J Pharm Sci*, 1: 223-229.
- Miraldi E, Ferri S, Mostaghimi V. 2001. Botanical drugs and preparations in the traditional medicine of West Azerbaijan (Iran). *J Ethnopharmacol*, 75: 77-87.
- Mirdeilami SZ, Barani H, Mazandarani M, Heshmati GA. 2011. Ethnopharmacological survey of medicinal plants in Maraveh Tappe region, north of Iran. *Iran J Plant Physiol*, 2: 327-338.
- Mohagheghzadeh A, Shams Ardekani M, Ghannadi A. 2000a. Linalool-rich essential oil of *Zataria multiflora*. *Flavour Frag J*, 15: 119-122.

- Mohagheghzadeh A, Shams Ardekani M, Ghannadi A. 2000b. Volatile constituents of callus and flower-bearing tops of *Zataria multiflora* Boiss. (Lamiaceae). *Flavour Frag J*, 15: 373-376.
- Mohagheghzadeh A, Shams Ardekani M, Ghannadi A, Minaiyan M. 2004. Rosmarinic acid from *Zataria multiflora* tops and in vitro cultures. *Fitoterapia*, 75: 315-321.
- Morid S, Ghaemi H, Mir Abolghasemi H, Abediny. 2001. Evaluation of the HEC-1 model for flood forecasting and stimulation in the Hormozgan province, Iran. *J Environ Hydrol*, 9: 1-8.
- Mosaddegh M, Naghibi F, Moazzeni H, Pirani A, Esmaili S. 2012. Ethnobotanical survey of herbal remedies traditionally used in Kohgiluyeh va Boyer Ahmad province of Iran. *J Ethnopharmacol*, 141: 80-95.
- Mozaffarian V. 1991. A short survey of Hormozgan province vegetation (Iran). *Mitteilungen der Botanischen Staatssammlung München*, 30: 417-429.
- Nadjafi F, Koocheki A, Ghasemi Arian A. 2006. The status of exudate species in Iran and existing challenges in their sustainable utilization. *Med Plant Conserv*, 12: 22-28.
- Naghibi F, Mosaddegh S, Motamed M. 2005. Labiatae family in folk medicine in Iran- from ethnobotany to pharmacology. *Iran J Pharm Res*, 2: 63-79.
- Namsa ND, Mandal M, Tangjang S, Mandal SC. 2011. Ethnobotany of the Monpa ethnic group at Arunachal Pradesh, India. *J Ethnobiol Ethnomed*, 7: 1-14.
- Oliveira AKM, Oliveira NA, Resende UM, Martins PFRB. 2011. Ethnobotany and traditional medicine of the inhabitants of the Pantanal Negro sub-region and the raizeiros of Miranda and Aquidauna, Mato Grosso do Sul, Brazil. *Brazil J Biol*, 71: 283-289.
- PDR for Herbal Medicines. 2000. Montvale, Medical Economic Publications.
- Rechinger KH. 1982. *Flora Iranica*, Vol. 1-176, Graz, Akademische Druck-u. Verlagsanstalt.
- Sabzian M. 2008. *Iran tourism, a complete source book*, pp. 560-581, Tehran, Kamel Publications.
- Sadraei H, Ghannadi A, Malekshahi K. 2003a. Composition of the essential oil of asa-foetida and its spasmolytic action. *Saudi Pharm J*, 11: 136-140.
- Sadraei H, Ghannadi A, Taki-bavani M. 2003b. Effects of *Zataria multiflora* and *Carum carvi* essential oils and hydroalcoholic extracts of *Passiflora incarnata*, *Berberis integerrima* and *Crocus sativus* on rat isolated uterus contractions. *Int J Aromather*, 13: 121-127.
- Shahi M, Hosseini A, Shemshad K, Rafinejad J. 2011. The Occurrence of Red-Black Spider *Latrodectus hasselti* (Araneae: Theridiidae) in Bandar Abbas, Southern Part of Iran. *Iran J Arthropod Borne Dis*, 5: 63-68.
- Shams Ardekani M, Ghannadi A, Badr P, Mohagheghzadeh A. 2005. Biotransformation of terpenes and related compounds by suspension culture of *Glycyrrhiza glabra* L. (Papilionaceae). *Flavour Frag J*, 20: 141-144.
- Shams Ardekani M, Mohebbi A, Shajari E. 2011. *A survey of Iranian ethnomedicine*, Tehran, Sahbaye Danesh Publications.
- Sharififar F, Koohpayeh A, Mehdi Motaghi M, Amirhosravi A, Puormohseni Nasab E, Khodashenas M. 2010. Study the ethnobotany of medicinal plants in Sirjan, Kerman province, Iran. *J Herbal Drug*, 1: 19-28.
- Shokri M, Safaian N. 1993. The study of medicinal plants in Mazandaran (northern Iran). *Acta Horticulturae*, 333: 165-174.
- Soltanipoor MA, Moradshahi A, Rezaei M, Barazandeh MM. 2003. The comparison of constituents of essential oils of *Zhumeria majdae* at different stages. *Pajouhesh and Sazandegi*, 60: 88-92.
- Soltanipoor MA. 2005. Medicinal plants of the Geno protected area. *Pajouhesh and Sazandegi*, 68: 27-37.
- Soltanipoor MA. 2006. Introduction to the Flora, life form and chronology for Hormoz island plants, S. Iran. *Rostaniha*, 7: 19-32.

## **Ethnobotany of Hormozgan Province**

- World Health Organization. 2007. WHO monographs on selected medicinal plants, Geneva, WHO Publications.
- Zaeifi M. 2001. The flora of Hormozgan province, p. 1, Bandar Abbas, Research Center of Agriculture and Natural Resources Publications.
- Zolfaghari B, Sadeghi M, Tiri I, Yousefali Tabar M. 2012. Collection, identification and evaluation of the traditional applications of some plants of Babol. *J Islam Iran Trad Med*, 3: 113-123.