



Ethnobotanical study of medicinal plants of Sardasht, Western Azerbaijan, northwestern Iran

Hejraneh Azizi*¹, Maryam Keshavarzi²

¹Faculty of Biological sciences, Shahid Beheshti University, Tehran, Iran;

²Faculty of Biological sciences, Alzahra University, Tehran, Iran;

*Email: hejraneh.azizi@yahoo.com

ARTICLE INFO

Type: Original Research

Topic: Ethnobotany

Received March 30th 2014

Accepted July 20th 2014

Key words:

- ✓ Medicinal plants
- ✓ Ethnobotany
- ✓ Traditional medicine
- ✓ Sardasht
- ✓ Iran

ABSTRACT

Background & Aim: The traditional knowledge about medicinal plants is the basic step in many drug productions. Traditional medicine and herbal drug have absorbed attraction of many world authorities. Using medicinal plants has developed in many countries even those with a vast use of chemical drugs. Ethno-botanical studies result in documentation of many useful plants. In these studies the main aim is to identify such plants and introduce their active and biologic ingredients. Iran is a proper case of ethno-botanical studies due to its different habitats and rich plant vegetation types. Nowadays using new medicinal plants components and optimized usage of rich natural resources is a necessity.

Experimental: In present project medicinal plants of Sardasht with local importance have been collected and identified during 2011 & 2012 growth seasons. Careful uses of medicinal herbs were determined by interview with native people. Scientific names and local medicinal uses are mentioned.

Results & Discussion: There were totally recognized 70 medicinal species of 29 families. Results of present study showed that local people mainly used Asteraceae and Apiaceae then Lamiaceae, Rosaceae and Fabaceae medicinal taxa. Medical plants in this region are mainly used to treat circulatory system problems such as Diabetics and blood lipid.

Industrial and practical recommendations: According to results of this study, the preservation and conservation of some herbs species is essential. This document can play a role in preserving the indigenous knowledge of using these plants.

1. Introduction

From the early days of human history he tried to recognize the plants in order to use them as food, shelter and medicine or avoid from toxic ones. Plants are always considered as an eternal source of human needs. Science development provides a new insight to use natural products as food and medicine. World plant vegetation comprises more than tens of thousands of species but

only a minority of these has been considered by researchers in biological pharmacological and phyto-chemical studies (Qureshi *et al.*, 2006). One of the most effective and proper methods to select plants for such studies is the use of people traditional knowledge in different parts of the world. Such kind of native knowledge and experience is inherited generation by

generation and nowadays is used to improve scientific and practical researches. Ethnobotany as a practical field of study is trying to link human culture and ecosystem (Jorjani, 2001). With the findings of these studies, plant usage in different societies are gathered and studied in order to conserve the thousand years of human experience about plants properties and their implications in treatments and to improve botany in the other hand (Goleniowski *et al.*, 2006). Medicinal extracts as taxol, Curcumin, Cochicine, Aspirine, Digoxin, ephedrine, quinine, quinidine etc. are some of these approaches. The more ancient the history and culture of a nation the more it reaches the aims of such studies. Iran community with a history of several thousand years of cultural and ethnic diversity, climate and weather diversity and a richness of more than 8000 species is a proper case of ethnobotanical study. Phytotrapy is initiated from early medieval in Western countries although it was not tangible progress at first but after appearance of Salerne doctrine it was improved rapidly. They used not only their native plants but also plants of Persian and Arabic celebrity doctors (Omid beige, 2000; Safizadeh, 1982; Razi, 1990). Chemical drugs are used extensively nowadays but medicinal plants are used increasingly and its production and composed a significant value. Prolonged use of chemical substances may have side effects, sometimes as severe as disease itself, while using medicinal plants component has not such side effects. Thalidomide in Europe is best sample for this bad effects (Daryaie, 2006).

Sardasht is a borderline city of West Azerbaijan province, Iran with a vast Kurdish settlement. This city is situated between 36°9' latitude and 45° 32' longitude. Sardasht is located at the southwest of the Orumiyeh Lake, 1500 meters above sea level. Sardasht area is about 1411 km² which is about 7% of the province area (Fig. 1). People language of Sardasht is Kurdish (Soorani, mikeriani accent). Neighboring cities are Piranshahr and Mahabad (at N and NE), Bookan (at E) and Baneh (at SE). The studied area is near Rania and Dize at west (Arbil, Iraqi Kurdistan) and soleymaniyeh (at south) and Gir and out (at east). The population of the Sardasht is about 111590 based on 2010 Census. Its geographical position and the annual rainfall prepare the proper situation to have plant vegetation richness. There is an important forest region of the province in Sardasht over than 80000 hectares. One third of these forest zone is very dense, one third is sparse and remaining part is

of disturbed and destroyed forests. The main forest type of this region is Oak, quince, pear and wild grapes. The economic importance of these forests is based on oak and its accessories as gall nut, manna, turpentine and medicinal materials. Due to the ancient culture of this region, and the historical interest of Kurdish people to use medicinal plants, the aim of present study is to collect and identify the medicinal plant of the Sardasht region.

2. Materials and methods

Samples were collected from the entire studied region during two growth seasons of 2011 & 2012 from April to September. For each plant complete parts were gathered and dried to make herbarium specimens. Studied and sampled specimens are deposited at Herbarium of Alzahra University. Plants were identified by use of local and other floras (Rechinger, 1988; Mozaffarian, 2009; Parsa, 1948-1960; Ghahreman, 1975-2000). Traditional medicinal and local implications of plants were achieved by interviews with old local people.

3. Results and discussion

Totally 70 species were identified in studied region. Details of samples and their scientific name are indicated in Tab. 1. In order to study the ethnobotany of a region one should live with them to know the perfect implication of herbal materials. Ethnobotanist not only deals with medicinal but also with edible, coloring agent, toxic and ornamental plants. Based on field study in Sardasht region with all its villages, there were totally recognized 70 medicinal species of 29 families. Results of present study showed that local people mainly used Asteraceae and Apiaceae then Lamiaceae, Rosaceae and Fabaceae medicinal taxa (Fig. 2). According to the conducted studies on the medicinal plants in other provinces of Iran, these families were also in the first or second rank in terms of medicinal plants (Akbarinia *et al.*, 2006; Mirdavodi & Babakhanlo, 2007). Due to the diversity and spread of this family in the flora of Iran, this is not unexpected (Asadi *et al.*, 1998-2008).

These plants are mainly used to treat circulatory system problems such as Diabetics and blood lipid with frequency of 22.85 percent and the reason can be

considered and investigated. At the next step studied plants are used in medical treatment of digestive problems and as analgesic with frequency of 20 percent. The frequency application of medicinal plants for treating Soothing was 17%, as Skin and hair was about 11%, Anti infection, Respiratory system, Menstruation and fertility was 10%, as an Kidney and urinary tract was 8%, for Teeth and Gums was 5.75%, for was Vision 4%, for anti-Cancer was 1%. (Fig. 3).

Due to the vegetation richness of Sardasht region in Iran, and the presence of medicinal plants special attention should be paid on collection, identification and cultivation of local medicinal plants to prepare the proper and standard form of drugs. Plants provide a great comfort and shelter for human being with a vast genetic diversity and medicinal properties. Only 5000 plants out of 250 – 300 thousands specie have been studied as medicinal ones.

Table. 1. List of medicinal plant species and their uses

Scientific name	Family	Local name	Used parts	Medicinal application
<i>Achillea eriophora</i> DC.	Asteraceae	Bozhana	Leaves	Anti-diarrheal
<i>Allium sativum</i> L.	Aliaceae	Sire	Shoots	Anti-hypertensive
<i>Allium affine</i> Ledeb.	Aliaceae	Pivaz	Shoots	Strengthen the teeth and gums
<i>Allium Akaka</i> Gmel.	Aliaceae	Losha	Shoots	Anti-infection and kidney stones
<i>Althaea officinalis</i> L.	Malvaceae	Hero	Flowers, roots and leaves	Regulate menstruation, , anti-migraine headache and Diabetes
<i>Amygdalus scoparia</i> L	Rosaceae	Bayam	Fruit & leaves	Strengthen hair
<i>Anethum graveolens</i> L.(dill)	Apiaceae	Toragh	Leaves	Treatment of Diabetes
<i>Arctium lappa</i> L.	Asteraceae	Chaghl	Root	Strengthen hair and Blood Purifier
<i>Artemisia aucheri</i> Boiss.	Asteraceae	Dermana kevi	Leaves	Anti-Cough
<i>Bunium spp.</i>	Apiaceae	Zirah	Shoots	Strengthen the stomach
<i>Berberis spp.</i>	Berberidaceae	Zrishk	Fruit	Blood thinners
<i>Beta vulgaris</i> L.	Chenopodiaceae	Chavandar	Leaves	Anti-hemorrhoids and constipation
<i>Brassica Napus</i> L.	Brassicaceae	Kolza	Leaves	Anti-Cough, Diabetes and night blindness
<i>Cardaria draba</i> (L.) Desv.	Brassicaceae	Tef ba sar	Leaves	Diuretic
<i>Caryophyllium aromaticus</i>	Caryophyllaceae	Mikhak	Fruit	Toothache pain and strengthen the vision
<i>Cerasus vulgaris</i> Mill.	Rosaceae	Belalok	Fruit	Blood purification
<i>Chamaemelum nobile</i> (L.) All.	Asteraceae	Gola hajiana	Flower	Menstrual pain
<i>Cirsium arvense</i> (L.) Scop.	Asteraceae	Kengeri vahshi	Root	Strengthen the stomach
<i>Coriandrum sativum</i> L.	Apiaceae	Geshniz	Fruit	Avar rule and Painkiller
<i>Corylus avellana</i> L.	Betulaceae	Fandogh	Leaves	Strengthen hair
<i>Cratagus monogyna</i> Jacq.	Rosaceae	Goizh	Fruit	Anti-Blood lipid
<i>Cydonia vulgaris</i> L.	Rosaceae		Fruit	Antihypertensive

<i>Cynara scolymus</i> L.	Asteraceae	Kenger	Leaves	Strengthen the digestive system
<i>Daucus carota</i> L.	Apiaceae	Gezar	Root	Vision amplifiers
<i>Descurainia Sophia</i> L.	Brassicaceae	Khak shir	Fruit sand seed	Laxatives and strengthen the stomach
<i>Dianthus spp.</i>	Caryophyllaceae	Mikhak	Seed	Tooth Pain Relief
<i>Echium amenum</i> <i>Fisch. & Mey</i>	Boraginaceae	Gozervan	Leaves	Burning pain relief
<i>Euphorbia helioscopia</i> L.	Euphorbiaceae	Gia kala	Shoots	Anti-arthritic and rheumatic
<i>Vicia faba</i> L.	Fabaceae	Baghla	Fruit and seed	Tooth Pain Relief
<i>Ficus carica</i> L.	Moraceae	Hanjir	leaves	Agglutination
<i>Foeniculum vulgare</i> Mill.	Apiaceae	Razianah	Leaves, Fruit	Relieve abdominal pain in children and increase breast milk
<i>Fumaria officinalis</i> L.	Fumariaceae	Shatarah	Shoots	Anti-parasite and fever
<i>Fumaria parvifora</i> Lam.	Fumariaceae	Shatarah	Shoots	Anti-Acne
<i>Glycyrrhiza glabra</i> L.	Fabaceae	Giah balak	Root	Treatment of Ulcer
<i>Heliotropium ramosissimum</i> (Lehm.) DC.	Boraginaceae	Tav parast	Leaves	Treatment of snake bites
<i>Hordeum vulgare</i> L.	Poaceae	Jou	Fruit	Anti-Diabetes
<i>Juglans regia</i> L.	Juglandaceae	Gveze	Leaves and fruit	Anti-headaches, high blood pressure, anti-worm
<i>Lamium album</i> L.	Lamiaceae	Gaz gaz spi	Leaves	Anti-Diabetes
<i>Lawsonia inermis</i> L.	Lathyraceae	Khana	Leaves	Anti-headaches, migraines and strengthening hair follicles
<i>Lepidium sativum</i> L.	Apiaceae	Taratizah	Leaves	Arthritis pain reliever
<i>Lens culinaris</i> L.	Fabaceae	Nisk	Fruit	Increasing breast and colon strengthen
<i>Malva sylvestris</i> L.	Malvaceae	Tolaka	Leaves	Anti-abdominal pain in infants
<i>Medicago sativa</i> L.	Fabaceae	Venja	Leaves	Vision amplifiers
<i>Mentha longifolia</i> (L.) Huds.	Lamiaceae	Naana	Leaves	Asthma and respiratory tract
<i>Morus alba</i> L.	Moraceae	Tou	Fruit	Refrigerant
<i>Morus nigra</i> L.	Moraceae	Toua gaya	Fruit	Hematopoietic
<i>Nymphaea alba</i> L.	Nymphaeaceae	Nilufar	Leaves	Anti-Cough
<i>Ocimum basilicum</i> L.	Lamiaceae	Rehana	Leaves	Anticonvulsant and to increase breast milk
<i>Ornithogalum sintenisii</i> L.	Liliaceae	Shir morgh	Leaves	Soothing
<i>Phasaelous vulgaris</i> L.	Fabaceae	Lubia	Fruit	Strengthening the heart
<i>Pirus communis</i> L.	Rosaceae	Harmeh	Fruit	Anti-kidney stones and fever
<i>Pistacia atlantica</i> Desf.	Anacardiaceae	Ghazvan	Fruit	Stomach ulcers and stomach pain
<i>Pistacia khinjuk</i> L.	Anacardiaceae	Khinjuk	Leaves	Hemorrhoid Treatment
<i>Plantago major</i> L.	Plantaginaceae	Baza rishi	Leaves and roots	Wound healing and anti-infection
<i>Plantago lanceolata</i> L.	Plantaginaceae	Baza risha barik	Leaves	Anti-diarrheal
<i>Portulaca oleracea</i> L.	Portulacaceae	Perperah	Shoots	Blood purification and cleansing the skin
<i>Prangos ferulacea</i> Lindl.	Apiaceae	Marzah	Shoots	Anti-parasitic and anti-cancer
<i>Ricinuscommunis</i> L.	Euphorbiaceae	Karchak	Seed	Skin Booster
<i>Rosa canina</i> L.	Rosaceae	Shilan	Flower	Anti-Infections and kidney stones

<i>Rumex thyrsiflorus</i> Fingerth.	Polygonaceae	Tershoka	Leaves	Strengthen the digestive system
<i>Salvia spp.</i>	Lamiaceae	Maryam goli	Flower	Anti-infection
<i>Scilla sibirica</i> Haw.	Liliaceae	Najm abi	Leaves	Soothing
<i>Scrophularia spp.</i>	Scropholariaceae	Gol mimoni	Flower	Anti-asthma
<i>Tanacetum spp.</i>	Asteraceae	Babone gavi	Flowers and leaves	Strengthen the digestive system
<i>Thymus vulgaris</i> L.	Lamiaceae	Jatrah	Leaves	Anti-itch and anti-abdominal pain
<i>Trifolium pretense</i> L.	Fabaceae	Shavar	Leaves	Increase Fertility
<i>Urtica dioica</i> L.	Urticaceae	Gaz gaz	Leaves	Soothing Foot Pain and anti-Kidney Stones
<i>Vicia sativa</i> L.	Fabaceae	Mash	Seed	Refrigerant
<i>Vitis vinifera</i> L.	Vitaceae	Meve	Shoots	Kidney infection treatment and prevention of hair loss
<i>Ziziphora spp</i>	Lmiaceae	Kakoti	Flower	Anti-Cough

Unfortunately many plant species are endangered or become extinct before even a preliminary study. It seems that valuable nature resource is devastating rapidly (Fransworth and Morris, 1976; Fransworth *et al.*, 1985). Two type of medicinal plants are used in Iran: first a well identified group with a definite common name and a second group composed of unrecognized plants with empirical usage in different parts. So it seems necessary to study the medicinal plants more seriously (Poyan, 1989).



Fig. 1. Map of Iran, Western Azerbaijan province (gray color), Sardasht.

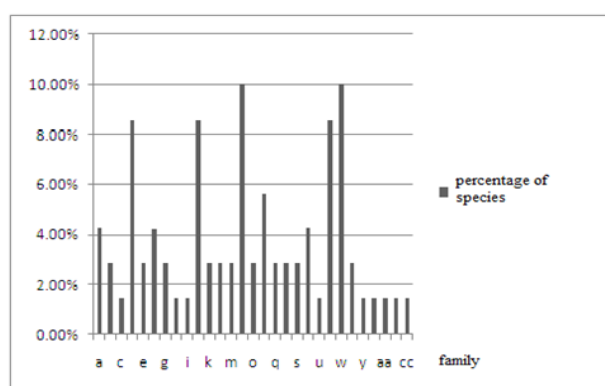


Fig. 2. Families with their medicinal importance (as percentage) in studied area. a. Aliaceae, b. Malvaceae, c. Chenopodiaceae, d. Rosaceae, e. Ephurbiaceae, f. Moraceae, g. Fumariaceae, h. Juglandaceae, i. Lathyraceae, j. Lamiaceae, k. Liliaceae, l. Anacardiaceae, m. Plantaginaceae, n. Apiaceae, o. Punicaceae, p. Polygonaceae, q. Urticaceae, r. Vitaceae, s. Boraginaceae, t. Brasicaseae, u. Nymphaeaceae, v. Fabaceae, w. Asteraceae, x. Caryophyllaceae, y. Betulaceae, z. Portulaceae, aa. Berberidaceae, bb. Poaceae, cc. Scropholariaceae.

In present study, we have compared our ethnobotanical data with the data present in Iranian Medicinal plant literatures (Afshar, 1990; Amin, 1991; Ayiineh Chii, 1989; Ghahreman 1987-1989; Ghasemi Pirbalouti, 2009 a,b; Ghasemi *et al.*, 2013; Ghorbani, 2005; Hovayzeh *et al.*, 2001; Miraldi *et al.*, 2001; Mir-Heidari, 1993; Rojhan, 1991; Salehi Surmaghi *et al.*, 1992; Zargari, 1989-1992). Most of the plants indicated by the interviewees are reported in Iranian literature, but not in every occasion were the actions attributed to a plant the same. Traditional knowledge

should therefore feature more often in the agendas of nature reserves besides biological richness as a value to preserve for the future. In general, the people of the study area still have a strong belief in the efficiency and success of medicinal plants.

The results of our study reveal that some of the plant species do play an important role in the primary healthcare system of this tribal community.

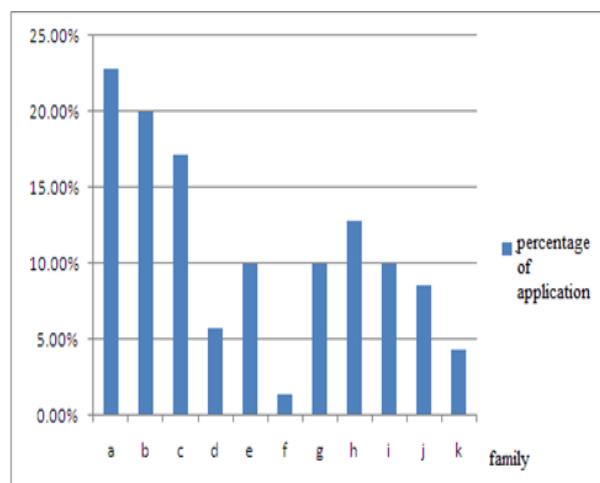


Fig. 3. Medicinal plants application in different human disease treatments (in percentage).

A: Circulatory system, b: Digestive System, c: Soothing, d: Teeth and Gums, e: Anti infection, f: anti-Cancer, g: Respiratory system, h: Skin and hair, i: Menstruation and fertility, j: Kidney and urinary tract, k: Vision.

4. Conclusion

Most of the plants mentioned in Table 1 have been used as medicinal herbs in folkloric medicine in present and past. The dialectical relationship between indigenous knowledge and practices shapes the ecosystem and affects the constituent plant population. By incorporating indigenous knowledge and use in the process of scientific research, new hypotheses for the sustainable conservation of resources can be developed. Indigenous knowledge and use have to be analyzed to develop appropriate management measures that build on both scientific and local knowledge. Due to lack of interest among the younger generation as well as their tendency to migrate to cities for lucrative jobs, there is a possibility of losing the wealth of knowledge in the near future. It thus becomes necessary to acquire and preserve the traditional system of medicine by proper documents and identification of specimens. This first report can play a role in identification and preserving of specimens the indigenous knowledge of using these plants.

5. References

- Afshar, I. 1990. *The Iranians Traditional Medicine*. Homa Press.
- Akbarinia, A., Babakhanlo, P. and Mozafarian, V. 2006. Evaluation of floristic and biological characteristics of medicinal plants Qazvin. *Journal of Pajouhesh va Sazandegi.*, 72: 70-76.
- Amin, G. 1991. *Popular Medicinal Plants of Iran*. Iranian Research Institute of Medicinal Plants press.
- Asadi, M., Masomi, A., Khatam saz, M. and Mozafarian, M. 1998-2008. *Flora of Iran. Research Institute of forests and pastures press*. 1-59 (in Persian).
- Ayiineh Chii, Y. 1989. *Medicinal Plants and Materia Medica*. University press.
- Daryaie, M. 2006. *Miracles of healing herbs in Iranian Medicine*. Creative Visualization press. pp: 31-186.
- Fransworth, N., Morris, R. 1976. Higher plants the sleeping gaint of drug development, *American J ournal of Pharmacy.*, 148: 46-52.
- Fransworth, N.R., Akerel, O., Beingel, A.S., Soejarto, D.D., Guo, Z. 1985. Medicinal plants in thrapy. *Bulletin of the World Health Organization.*, 63: 965-81.
- Gahreman, A. 1987-1989. *Flora of Iran. Department of Botany*. Institute of Forest Sciences press.
- Gahreman, A. 1975-2000. *Colored Flora of Iran*, Vol. 1-20. Research institute of forests and rangelands press.
- Ghasemi Pirbalouti, A. 2009a. Medicinal plants used in Chaharmahal and Bakhtyari districts Iran. *Herba Polonica.*, 55: 69-75.
- Ghasemi Pirbalouti, A. 2009b. *Iranian Medicinal and Aromatic Plants*. Islamic Azad University Press.
- Ghorbani, A. 2005. Studies on pharmaceutical ethnobotany in the region of Turkmen Sahra, north of Iran. *Journal of Ethnopharmacology.*, 102: 58-68.
- Goleniowski, M.E., Bongiovanni, G.A., Palacio, L., Nunez, C.O., Cantero, J.J. 2006. Medicinal plants from the (sierra de comechingones). *Argentina. Journal of Ethnopharmacol.*, 107: 324- 41.
- Hovayzeh, H., Dinarvand, M. and Sahlehi, J. 2001. Ethnobotany of medicinal plants in Khuzestan province. *Pajouhesh va Sazandegi.*, 53: 12-16.
- Jorjani, E. 2001. *Save the kharazmshahi*. Academy of Medical Sciences press. Iran. pp: 10-150.
- Miraldi, E., Ferri, S. and Mostaghimi, V. 2001. Botanical drugs and preparations in the traditional medicine of west Azerbaijan (Iran). *Journal of Ethnopharmacology.*, 75: 77-87.

- Mirdavodi, H. and Babakhanlo, P. 2007. Identification of medicinal plants of central province. *Iranian Journal of Medical and Aromatic Plants.*, 23(4): 554-559.
- Mir-Heidari, H. 1993. *Encyclopedia of Medicinal Plants of Iran*. Islamic Culture Press.
- Mozaffarian, V. 1996. *Encyclopedia of Iranian Plants*. Farhang Moaser Publication, Tehran, Iran.
- Mozaffarian, V. 2008. *Flora of Ilam*. Farhang Moaser Publication, Tehran, Iran.
- Mozaffarian, V. 2009. *Culture names of Iranian plants*. Farhang Moaser press.
- Omid beigi, R. 2000. *Approaches to the production and processing of medicinal plants*. Designers press. pp: 56.
- Parsa , A. 1948-1960. *Flora de L Iran*. Ministre de L education press.
- Poyan, M. 1989. *Medicinal Plants of South Khorasan*. nashre danesh press. pp. 78.
- Qureshi, R., Waheed, A., Arshad, M., Umbreen, T. 2006. Medico- ethnobotanical inventory of tehsil chakwal. *Pakistan Journal of botany.*, 41: 529-53.
- Razi, A. 1990. Alhavi, Vol.10. *Pharmaceutical Institute Alhavi press*. pp: 15.
- Rechinger, KH. 1988. *Flore iranica*, Vol. 1. Graz – Austeria: Akademische Druck- und verlagsanstalt.
- Rojhan, M. S. 1991. *Herbal Drugs and Treatment with Medicinal Plants*. Marshal Press.
- Safizadeh, S. 1982. *Traditional medicine among the Kurds*. attai press. pp: 6.
- Salehi Surmaghi, M. H., Aynehchi, Y., Amin, G. and Mahmoodi, Z. 1992. *Survey of Iranian plants for saponins. alkaloids*.
- Zargari, A. 1982-1992. *Plants*, Vol. 1-6. University press. Iran.

