

## Ethnobotanical studies of plant resources of Taftan Mountain, Sistan and Baluchestan in southeastern region of Iran

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<sup>1</sup>Department of Biology, Institute of Botany, Faculty of Sciences, Technische Universität Dresden. 01062 Dresden, Germany. Tel.: +49-351-463-39450, Fax.: +49-351-463-37749, \*email: bahram.rigi\_hossein\_abadi@tu-dresden.de

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**Abstract.** Abadi BRH, Neinhuis C, Safaeian R, Lautenschläger T. 2023. Ethnobotanical studies of plant resources of Taftan Mountain, Sistan and Baluchestan in southeastern region of Iran. *Asian J Ethnobiol* 6: 75-114. Due to poverty, lack of proper access to cities, the inadequacy of health services, and the availability of indigenous remedies, plant usage still is an important part of the cultural heritage in Baluchestan, Iran. Our study was conducted between 2018 and 2020 in Taftan Mountain area to report the traditional uses of the endemic plant species. During 40 field trips, 54 informants were interviewed. Totally, 3199 citations and 102 species belonging to 43 families were reported. Medical purposes comprised 75% of citations and 25% were referred to non-medical purposes. Medicinal plants were used against 178 disorders, and decoction was the most commonly applied method of preparation. Leaves were the most frequently used plant parts. Although most recorded species belong to Apiaceae, Asteraceae, and Lamiaceae, most citations belong to Lamiaceae followed by Asteraceae and Apiaceae. Most of the local people in the area still use the plants especially for treating their ailments. Women contributed more than men to the citations. The highest values for the ethnobotanical indices RFC and CI were recorded for *Pistacia atlantica* Desf., while the diseases brucellosis, callus, and eye infection had the highest FIC-value (1). Information regarding traditional knowledge is limited to elders; therefore, it needs to be recorded and saved for future generations.

**Keywords:** Baluchestan, ethnobotany, Iran, medicinal plants, Taftan Mountain

### INTRODUCTION

Nowadays, there is a growing interest in using traditional medicine or in combination with modern medicine. Traditional medicine remains the main source of treatment for health problems for most people in developing countries, as medicinal plants are usually accessible and inexpensive (Motlhanka and Nthoiwa 2013). In addition to community health care, this traditional heritage is linked to cultural practices. Some modern medical research is based on ethnobotanical studies and traditional knowledge, and many medicines have been derived from plants. For example, an estimated 25% of the world's prescribed medicines are derived from plants, and 121 such compounds are currently in use (Sahoo et al. 2010). There are about 35,000 to 70,000 plant species used for medicinal purposes worldwide (Farnsworth and Soejarto 1991), of which 6,500 species are used in Asia (Karki and Williams 1999). Iran comprises ca. 7300 vascular plant species (Akhani 2006) and is the second richest country of plant diversity in SW Asia after Turkey (Davis et al. 1994). The country also has a long history of using medicinal plants. One of the earliest modern ethnobotanical works is a study by Hopper and Field (1973) on useful plants and drugs in Iran and Iraq. Shokri and Safaian (1993) also provided a list of 210 medicinal plants used in Mazandaran Province. Ghorbani (2005) conducted an ethnobotanical survey in the Turkmen Sahra region of northern Iran, documenting 136

species from 51 families. The remarkable use and commercialization of medicinal plants to alleviate and cure health problems and ailments in all regions of the country underline the importance of these natural resources for folk medicine and the culture of the Iranian people (Emami et al. 2012). At the same time, traditional knowledge of medicinal plants is in danger of being lost due to the loss of traditional community life because of urbanization, besides the distinct problems of some species (Mosaddegh et al. 2012). Therefore, there is an urgent need to conduct ethnobotanical studies in Iran to capture all the knowledge about folk medicine practiced by the locals (Naghbi et al. 2005). Baluchestan is in a semi-arid area and part of the Irano-Turanian region and the Sahara-Indian region. Many plant species used for medicinal and other purposes occur in Taftan Mountain area, indicating the rich indigenous knowledge of Baluch tribes living in the area (Maleki and Akhani 2018). Some researchers have studied the traditional pharmacopeia and medicinal plants in different areas of Iran (Rajaei and Mohamadi 2012; Amiri and Joharchi 2013; Dolatkahi et al. 2014; Farouji and Khodayari 2016). Unfortunately, very little attention has been paid to the ethnobotanical aspects of plants in Baluchestan (Moghadam 2018). Recently, two ethnobotanical studies have been published from the region: near Saravan in southern Taftan (Sadeghi et al. 2014) and from some villages around Taftan Mountain (Maleki and Akhani 2018). Local people collect the plants and keep them in their houses to treat themselves and

others against diseases or to use as food. Selling plant material to residents of other villages and towns is an important source of income for local people in the study area. Recently, Maleki and Akhiani (2018) documented the ethnobotanical uses of a number of species in the region but did not include information on other uses of the plants besides their medicinal uses. In addition, they did not mention the medicinal use of plants in treating of gunshot wounds and accidents, which are common in the region.

This study aims to identify the potential of medicinal plants in the flora of this region and focuses on all the uses of the plants not only in Taftan Mountain and the surrounding villages but also in more distant villages and cities that, concerning their demands, rely on resources from the mountain area. Furthermore, we want to know whether the use of the plants is limited to the specific area near Taftan Mountain or is present in other areas in Baluchestan as well. Finally, in our study, we discuss the influence of age, gender, and distance from Taftan Mountain.

## MATERIALS AND METHODS

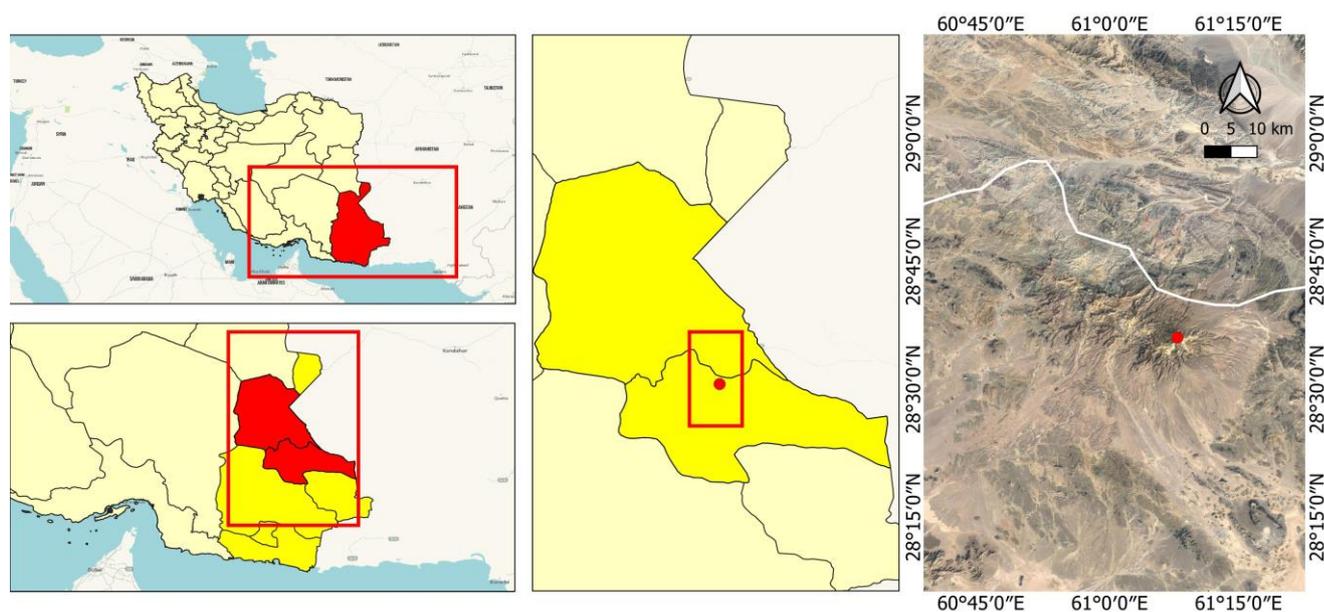
### Study area

Iran is divided into three bioclimatic zones: Caspian, Irano-Turanian, and Baluchi climates (Pabout 1979). Iran is one of the countries in the Middle East with different climates from arid to Mediterranean climates (Kottek et al. 2006). A large part of the country is covered by dry and semi-dry lands mostly located in the eastern half of Iran (Ebrahimi-Khusfi and Sardoo 2021). Taftan Mountain, situated in the Sistan and Baluchestan Province with a height of 3,941 meters above sea level, is the highest mountain in southeastern Iran. The province of Sistan and

Baluchestan is located in the Southeastern part of Iran and has an area of 181,578 km<sup>2</sup>. It is the second-largest province of the country with 1.4 million inhabitants, and it is the only province in which the majority of the population resides in rural areas (Roudi et al. 2017). The capital of Sistan and Baluchestan Province is Zahedan and the nearest city to the study area is Khash (Figure 1). Khash in Baluchi is called "Wash" which means "good weather". Data sampling was carried out between 27° 51' 12" and 29° 27' 06" northern latitude and between 60° 27' 50" and 61° 27' 05" eastern longitude at an altitude between 1633 and 2553 m.

The Taftan area is characterized by typical Irano-Turanian vegetation. The indigenous people of the region are various Baluch tribes, mostly farmers and ranchers. Their language is Balochi and they have their own dress called Balochi. Their religion is Islam and Sunni, and due to the lack of facilities and being far from cities, most are illiterate.

In terms of finance, they are poor but the collection and selling of medicinal plants from nature play minor roles in their economy. Taftan has erupted lavas ranging from basaltic andesite to dacite. The dominant rock is andesite, with SiO<sub>2</sub> content ranging from 49.8 to 63.5% (Biabangard and Moradian 2008). The flat plains surrounding the massifs are covered by *Zygophyllum eurypterum* Boiss. & Buhse (Ebrahimi et al. 2015). The climate of the area can be deduced only from the Khash and Zahedan weather stations. Khash has a tropical desertic bioclimate with an annual precipitation of 151 mm and a mean annual temperature of 20.1°C. The absolute minimum temperature might fall as low as -10°C and the absolute maximum temperature recorded is 43.4°C (Ebrahimpzadeh 2009; Hashemzade 2013; Djamali et al. 2011).



**Figure 1.** A. Location of Iran in the Asia map, B. Province of Sistan and Baluchestan in Iran, C. Location of the study area in the province, D. Photo of Taftan Mountain with the covered vegetation

### Data collection

Fieldwork was carried out during spring and summer (March-July) from 2018 until 2020. During each visit, plant specimens and the respective data on plant use were collected from 22 villages (Anari, Anjareh, Chahe nali, Dareh gol, Dehpabid, Esmaeil abad, Goharkoh, Jemchen, Kahnuk, Karvandar, Koteh, Mirabad, Mirjaveh, Nok abad, Poshte koh, Sangan, Nazil, Seyedabad, Shahrek, Shuru, Tamin, and Torshab) and two cities (Khash and Zahedan) throughout the Taftan Mountain. Information was recorded through semi-structured interviews with knowledgeable and experienced local people like village elders, traditional doctors, and herbalists. At the beginning of each yearly fieldwork in the spring, random and planned preliminary visits were made to check the vegetation and climate conditions and make arrangements with local people in the area. Prior to the information collection, a brief group discussion was held with the key informants, in which the objectives of the research were explained to them and informants were made aware of the importance of the study. This was done to acknowledge the informant's cooperation in preserving the traditional knowledge of the study area and build their confidence in providing reliable information. The interviews were conducted in Baluchi which is the local language in Baluchestan. The interviewees were interviewed at their homes and the herbalists at their local drug stores (Figure 2).

Most of the interviews were taken from the informants using a voice recorder which turned out to be most effective and helped the respondents to recall their gathered information. Images were also taken to facilitate the identification and documentation of the specimens. Due to the mountainous and rocky nature of the surrounding area of Taftan Mountain, causing the low population density, the study area was categorized into three different zones; zone A, B, and C according to the distance from Taftan Mountain (Figure 3).

During the interviews, informants were asked about the vernacular names of each plant, their uses, the used plant part (i.e., leaves, root, stem, etc.), mode of preparation (i.e., decoction, infusion, powder, etc.), type of application (i.e., oral, dermal), ailment treated, other uses beside medicinal application and most commonly used plants in the area. Each time a plant was mentioned as used, it was considered a single 'use record' (Amiguet et al. 2005). For example, if plant A was used to treat fever, a single-use record was noted; however, using plant A to treat fever and diarrhea, resulted in two use records. The classification of individual citations by use categories is followed by Cook (1995). For identification, plant voucher specimens were collected, dried, and stored at the Herbarium Dresdense (DR), Technische Universität Dresden, Germany. To avoid mistakes in the identification of species and considering that the same vernacular name often refers to more than one species, sometimes botanically quite different, interviewed people were asked to identify the plants in the field. Thus, only reports for which the informant was able to indicate and collect the plant were considered. The collected plant specimens were identified with the help of Flora Iranica (Rechinger 1963-2015), Flora of Iran (Assadi

et al. 1992-2012), and Color Flora of Iran (Ghahreman 1975-1999). For confirmation, the studied plant samples were compared with the already identified plant specimens preserved in the herbarium of University of Tehran, Iran. The plants were identified by Dr.Roja Safaeian, Dr.Barbara Ditsch, and Dr.Mousa Akbarluo.

### Data analysis

The majority of the collected information in this study was collected in the field. Interview data were coded and sorted according to name, age, sex, location, distance from Taftan Mountain, local name, used parts, traditional use, and method of preparation. The parts of plants used by local people and healers for the preparation for different purposes were grouped under several classes (aerial parts, flower, fruit, fruit shell, latex, leaves, oil, pulp, resin, root, seed, and stem). The plant uses were placed into nine categories: medicinal use (M), nutrition, spices and herbal teas (N), domestic (D), animal feed (F), dental care and cosmetics (T), cigarettes (C), handicrafts (H), rituals (R) and the uses mentioned less than eight times were summarized in others (O) including bee bite, making honey, suture, rice colander and etc. Human ailments treated in the study area were assigned to 22 categories according to the WHO classification (2016). The mode of application was classified into body wash, Chol (The traditional method of Baluch tribes for the treatment of body, joint, and any other musculoskeletal pains (Maleki and Akhani 2018), dermal, foot soak, inhalation, mouthwashes, oral, pill, rub whole body, soaking body, suppository, suspension, and topical. For each investigation, it is necessary to compare the results with other studies, so the following quantitative ethnobotanical indices were calculated: Relative Frequency of Citations (RFC), Cultural Importance index (CI) as well as the Informant Consensus Factor ( $F_{IC}$ ). The Relative Frequency of Citations presents the local significance of each plant species and is calculated for each species as the quotient of the Frequency of Citations (FC) and the total Number of informants (N) (Ahmad et al. 2014) (Formula 1). Tardío and Pardo-de-Santayana (2008) introduced the CI to allow comparison of data from different studies. If a species is mentioned in every use category, nine in our study, the CI would be this total number of use categories (Tardío and Pardo-de-Santayana 2008). In case the species is recorded for just a single-use category, the CI would be equal to the RFC (Formula 2).  $F_{IC}$  indicates the homogeneity of the knowledge of the informants (Heinrich et al. 1998) (Formula 3). Values differ from 0 (no concordance) to 1 (full accordance). High values, therefore, illustrate that healers use the same species for the treatment of the same illness (Lautenschläger et al. 2018).

$$RFC_s = \frac{FC_s}{N} = \frac{\sum_{i=1}^N URI}{N}$$

**Formula 1:** Calculation of the Relative Frequency of Citations (RFC). s: species, FC: Frequency of Citation by one informant, N: total number of informants (Ahmad et al. 2014).

$$CI_s = \sum_{u=u_1}^{u_{NC}} \sum_{i=i_1}^{i_{NI}} \frac{UR_{ui}}{NI}$$

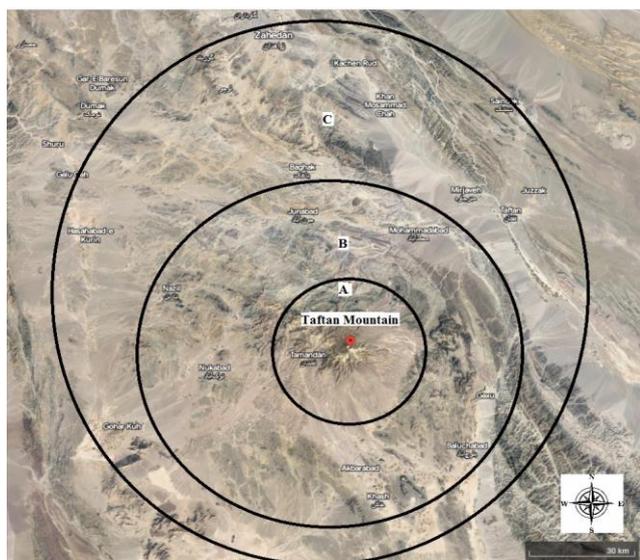
**Formula 2:** Calculation of the Cultural Importance Index (CI). s: species, u: use categories, N: total number of informants, i: informants, NC: the number of use categories,  $UR_{ui}$  = the use report of informant I in use (Tardío and Pardo-de-Santayana 2008).

$$F_{ic} = \frac{n_{ur} - n_t}{n_{ur} - 1}$$

**Formula 3:** Calculation of the Informant Consensus Factor ( $F_{ic}$ ).  $n_{ur}$ : number of use-reports in each use category,  $n_t$ : number of taxa used (Trotter and Logan 1986).



**Figure 2.** Interview conducted during the field study in local people's home



**Figure 3.** Taftan Mountain, Iran and three studied zones (Photo: Earth Resources Observation and Science (EROS) Center)

## RESULTS AND DISCUSSION

### Ethnobotanical knowledge according to gender, age, and distance

#### Gender

A total of 54 informants (23 males, i.e., 43% and 31 females, i.e., 57%) were selected from the 22 villages and two cities surrounding Taftan Mountain. The larger number of interviewed women is based on the belief of local people that women have better knowledge about the use of plants than men. In the current study, women contributed more to the number of citations (61%) and the reports on medicinal plants (66.7%) than men. A total number of 98 among 104 cited species were provided by women, again more than were provided by men. It is evident that women are important key sources of traditional knowledge as they are well informed regarding the values of the plants especially about local medicinal plants due to their role in Baluch families as responsible for the family's health. The present results are in agreement with the previous studies in Iran (Rajaei and Mohamadi 2012; Farouji and Khodayari 2016; Maleki and Akhani 2018), in neighboring Pakistan (Shedayi and Gulshan 2012; Abbas et al. 2014; Begum et al. 2014; Khan et al. 2016) or India (Sivasankari et al. 2014). Except in some cases (10%), the range of traditional information on the use of plants was the same between men and women. The results of our study in case of the influence of gender on plants usage in three different zones among Baluch tribes did not show any prominent difference except for some species like *Amygdalus spinosissima* Bunge., *Astragalus fischeri* Buhse. ex Fisch., *Elaeagnus angustifolia* L. and *Populus alba* L. are mostly used by men for special purposes like agriculture and construction. On the other hand, men did not have information regards species like *Adiantum capillus-veneris* L., *Carthamus oxyacantha* M.Bieb, *Dorema ammoniacum* D.Don, *Myrtus communis* L., *Petroselinum sativum* L. and *Pycnocycla aucheriana* Dence. ex Boiss. var. *aucheriana* that are mostly related to cosmetic and beauty applications or medicinal uses concerning female health issues such as menstrual problems.

#### Age

Most of the local people in the three studied zones still require the plants especially for treating their ailments, resulting in 74% of the citations referring to the medicinal uses of plants. The age of the informants ranged from 22 to 92 years. Among them, 39% were above 65 years old, 55.5% were between 35 and 65 years, and 5.5% were younger than 35 years (Table 1).

As shown in Table 1, around 95% of ethnobotanical knowledge is limited to older people and people between 35 to 65 years old. The results were in line with those obtained by the previous similar research in Taftan (Maleki and Akhani 2018). Our results were also comparable to studies from Pakistan (Shedayi and Gulshan 2012; Murad et al. 2013; Abbas et al. 2014; Adnan et al. 2014; Khan et al. 2014a; Sivasankari et al. 2014; Yaseen et al. 2015; Khan et al. 2016; Abbas et al. 2017) and India (Muthu et al. 2006). Although we asked the young generation to participate in our study and act as informants, they unfortunately refused

and claimed that they had no knowledge about the use of the plants except few young people that lived in zone A.

*Zones A, B and C and influence of distance from Taftan Mountain*

The number of interviewees in zones A, B, and C were 11, 17, and 26 people, respectively. As can be seen in Figure 3, zone A is located in the mountainous region and the foothills therefore the low number of informants is not surprising, due to the mountainous and rocky nature of the area. On the other hand, due to rather strict religious regulations, communal restrictions, and an isolated society several limitations exist to interviewing women in zone A, leading to the low number of female interviewees (3) in comparison with the other zones. Zone C includes the capital of the province and some larger villages with less strict religious regulations. Therefore, the number of interviewed women from zone A to C increased. In addition, zones B and C provide better living conditions for local people in terms of climate and soil, resulting in more villages and large cities in these zones, which again explains the large number of interviewees in these two areas.

Due to the lack of facilities in the study area and the long distance to the cities, most of the local people in all three zones still depend on the plants especially for treating their ailments. While local people in zone A collect plants near their homes or in the surrounding habitats, people living in zones B and C travel to zone A to gather the plants for their consumption. In addition, they purchase required plants from local people in zone A and medicinal plants from the herbal drug stores in zones B and C. Selling plants is a substantial income source for the local population in the study area.

**Plant uses in the studied area**

The present study records 3,199 citations from 102 plant species out of 43 families for different purposes. Although most recorded species belong to Apiaceae and Asteraceae (12 species each) and Lamiaceae (11 species), followed by Fabaceae (10 species) and Rosaceae (7 species), the majority of citations belong to Lamiaceae (19%) followed by Asteraceae (12%) and Apiaceae (11%). Beside medical usage, people sell parts of various species such as *Tamarix mascatensis* Bunge, *Nannorrhops* H.Wendl. and *Peganum harmala* L. as fuelwood and handicrafts. All the investigated species are listed in Table 6, which reports the scientific names of plants, local names of plants, the family of plants, the used plant part, the preparation method, and ailments. As Table 6 shows, we found a wide variety of uses for the existing plants in the studied area.

**Use categories**

The survey reveals that 75% of all use reports concern medicinal purposes and 25% for non-medical purposes. The plant uses were categorized into nine categories and results indicated medicinal use (75%), nutrition, spices and herbal teas (12%), domestic (7%), dental care as well as cosmetics (2%), and animal feed (2%).

As shown in Figure 4, most of the non-medical uses belong to food (49.40%) followed by dairy farming (15.30%), local uses (14.80%), construction (6.52%), fodder (5.43%), agriculture (2.85%), agricultural tools (2.58%), firewood (1.63%) and other uses (1.49%).

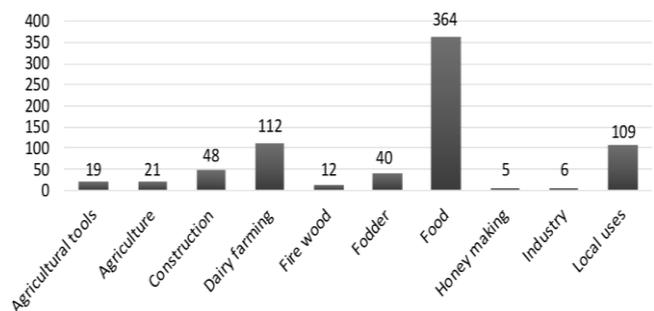
Foods are all edible uses of plants; Dairy farmings are all the activities related to livestock and dairy products; Local uses are consists of all the unique uses of plants in the area by local people (Handicrafts, air disinfectant, clothes washing, local dance wood and etc.); Constructions are activities regarding house building; Fodders are livestock forage; Agriculture and agricultural tools are all the activities related to crops and agricultural tools; Other uses are uses mentioned less than ten times.

The main recorded application forms of medicinal plants were oral (64%), dermal (11.98%), Chol (9.46%), topical (7.70%) suspension (1.91%), inhalation (1.78%), rub whole body (0.73%), body wash (0.69%), suppository (0.52%), soaking body (0.49%), pill (0.41%) and mouth washes (0.33%).

Air disinfectant, clothes washing, comestible, tea flavoring, food, house building, livestock forage, nuts, paint Hizak (a bag made from animal leather and used for the production of milk and other dairy products, also as a refrigerator for maintaining milk) and vegetables are the most common uses of plants in the study area (Table 2).

**Table 1.** Sex, age, and distance variables of interviewed people in the study area

Variable	Informants		Total interviewees (%)	Citation (%)
	M	F		
Age group (years)				
X ≤ 35	2	1	3 (5.5 %)	225 (7 %)
35 ≤ X ≤ 65	11	19	30 (55.5 %)	1634 (51%)
65 ≤ X	10	11	21(39 %)	1340 (42 %)
Total	23	31	54	3199
Distance (kilometer)				
Zone (A) X ≤ 15	8	3	11 (20.4 %)	649 (20.2 %)
Zone (B) 15 ≤ X ≤ 70	5	12	17 (31.5 %)	1102 (34.5 %)
Zone (C) 70 ≤ X	10	16	26 (48.1 %)	1448 (45.3 %)
Total	23	31	54	3199



**Figure 4.** Non-medical citation of plants in the studied area

### Plant parts used

For Baluch people leaves (34%) were the most frequently used plant parts followed by seeds and \*aerial parts (14%), roots (9%), and resin (7%) (Table 3).

Our results are in agreement with the findings in similar studies in Iran (Amiri and Joharchi 2016; Mosaddegh et al. 2016; Maleki and Akhane 2018) in which the most widely used plant parts were leaves as well, followed by aerial parts. The same application of medicinal plants from the leaves were used, also substantiated by studies from other regions of Iran (Pirbalouti et al. 2012; Rajaei and Mohamadi 2012; Dolatkhahi et al. 2014; Farouji and Khodayari 2016). These results are in line with many ethnobotanical surveys in Pakistan and India reporting that mainly leaves, seeds, and aerial parts were used by the local communities to treat different ailments (Qasim et al. 2010; Qureshi 2012; Ullah et al. 2013; Sivasankari et al. 2014; Ishtiaq et al. 2015) or for the preparation of herbal medicines (Mahishi et al. 2005; Ignacimuthu et al. 2006; Ignacimuthu et al. 2008; Muthulingam 2015; Amjad et al. 2017). That leaves were the predominantly used part than other parts because they can be collected very easily compared, e.g., to underground parts (Giday et al. 2009) and from a physiological point of view leaves are active in photosynthesis and production of metabolites (Ghorbani 2005). Besides this, another important reason for using leaves could be justified by a conservational approach since digging out roots might be lethal for the plant and eventually may increase the extinction risk (Kadir et al. 2012).

### Herbal therapies and preparations

According to our investigation, 2,411 citations (75%) referred to medical uses, and the first and most trusted option to treat ailments is the usage of available medicinal plants. Therefore, local people collect necessary medicinal plants from the area and preserve them in their homes. The human ailments classification was considered according to WHO classification and sorted into 22 categories. As shown in Figure 5 the main ailments are diseases of the digestive system (29%) followed by those of the musculoskeletal system (17%), certain infections and parasites as well as external causes of morbidity and mortality each (8%), diseases of the genitourinary system and diseases of the respiratory system each (7%). In more detail, medicinal plants used for stomach aches represent more than 14%, followed by those treating abdominal pain (13%), body pain (10%), infections, bone pain, and cold (9%), hand and leg pain, diarrhea (8%), vomiting, wounds (7%), and diabetes (6%).

In studies conducted in different areas of Iran (Mosaddegh et al. 2012; Dolatkhahi et al. 2014; Mosaddegh et al. 2016; Maleki and Akhane 2018) treating digestive system disorders, musculoskeletal pains and infections were most important, confirming our results. Other ethnobotanical studies (Pirbalouti et al. 2012; Rajaei

and Mohamadi 2012; Amiri and Joharchi 2013; Khodayari et al. 2014; Naghibi et al. 2014; Farouji and Khodayari 2016) also show that plants are mostly used for curing digestive disorders that are in accordance with our results. In the case of ailments treated by plants, digestive system disorders, and stomach problems were the main diseases treated by local people of Baluchestan which is in agreement with studies conducted in Pakistan (Qureshi 2012; Shedayi and Gulshan 2012; Ullah et al. 2013; Khan et al. 2014a; Yaseen et al. 2015; Khan et al. 2018) and India (Sivasankari et al. 2014). It seems that local plants in the area have a wide variety of effective compounds for gastrointestinal diseases. Besides that, it is predictable that bad hygiene, fuelwood smoke inside houses, and other factors like water pollution are the most important causes of digestive system disorders among people in the area. This has led to the common use of local plants to treat and relieve these vast pains.

**Table 2.** Ten (10) Common non-medical uses of plants in the studied area

Uses of plants	UC	Citation	%
Vegetable	Nutrition, spices and herbal teas	116	25.84
Nuts	Nutrition, spices and herbal teas	55	12.24
House building	Domestic	48	10.7
Flavor of tea	Nutrition, spices and herbal teas	43	9.55
Comestible	Nutrition, spices and herbal teas	40	8.9
Food	Nutrition, spices and herbal teas	38	8.46
Paint hizak	Domestic	35	7.79
Livestock forage	Animal feed	33	7.4
Clothes washing	Dental care and cosmetics	21	4.67
Air disinfectant	Domestic	20	4.45

Note: UC: Use Categories, <sup>1</sup> Paint for bags made from animal leather used for making dairy products, and also as a refrigerator to keep milk fresh

**Table 3.** Plant parts used in the studied area

Plant parts used	Citation	%
Leaves	1092	34.1
Seed	469	14.66
*Aerial parts	468	14.62
Root	299	9.34
Resin	220	6.9
Fruit	184	6
Stem	178	5.3
Flower	143	4.46
Oil	65	2.1
Latex	62	2
Fruit shell	10	0.32
Pulp	9	0.2

Note: \* Aerial parts: The whole of the plant except the root (i.e., flowers, leaves, and stem)

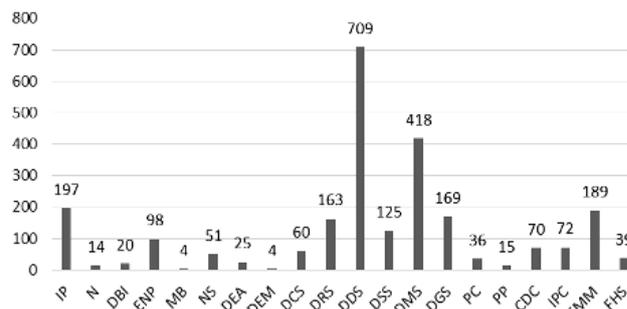
The most commonly applied methods of preparation were decoction (34%) followed by raw consumption (Using the plant parts without any action) (20%), powder (12%), vapor (8%), and soaking (make or allowing the plant parts to become thoroughly wet by immersing them in liquid) (7%) (Figure 6). The most common method of preparation and the most administered routes in different regions of Iran (Rajaei and Mohamadi 2012; Naghibi et al. 2014; Amiri and Joharchi (2016) were decoction and oral that was the same as the result of the current study. In many other studies conducted in Pakistan (Kayani et al. 2014; Khan et al. 2014a; Ahmad et al. 2015; Yaseen et al. 2015; Amjad et al. 2017; Khan et al. 2018) and India (Sarangzai et al. 2013) the major mode of preparation were decoction and powder. Oral administration in other regions of Pakistan (Ahmed et al. 2014; Khan et al. 2014a; Sivasankari et al. 2014) was the same most important administration method in our case study. Most of the plants in the present study are also consumed by mixing with honey, milk, water, and rock candy.

**Diversity of medicinal plants**

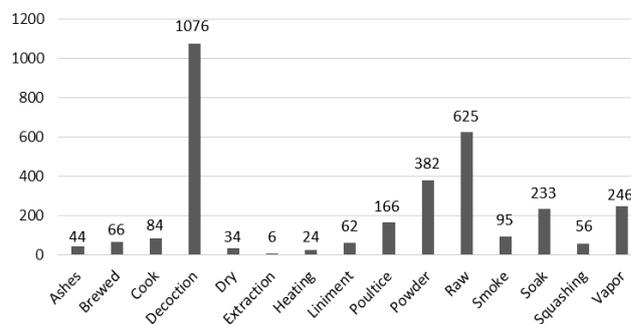
Medicinal plants were used against 178 disorders, of which abdominal pain, body pain, bones pain, cold, diabetes, diarrhea, hand and leg pain, infections, stomach ache, vomiting and wounds were the most common ailments in the study area. In this study, 78 medicinal plants belonging to 37 families were reported whereas Lamiaceae with 11 species was the predominant family followed by Apiaceae and Asteraceae each 9 and Fabaceae with 8 species. *Pistacia atlantica* Desf. with 236 citations was the most dominant species among all studied medicinal plants and is used to treat more than 55 ailments. The results in our study in case of uses of plant families like Lamiaceae and Asteraceae were in agreement with previous researches in Iran (Pirbalouti et al. 2012; Dolatkahi et al. 2014; Naghibi et al. 2014; Farouji and Khodayari 2016). In studies conducted in Iran, plant families like Lamiaceae (Rajaei and Mohamadi 2012; Sadeghi et al. 2014; Sharififar et al. 2014) and Asteraceae (Kalvandi et al. 2007; Mood 2008; Dolatkahi and Nabipour 2013; Khodayari et al. 2014; Mosaddegh et al. 2016; Maleki and Akhani 2018) were the largest numbers of medicinal species family but in Pakistan, Asteraceae and Lamiaceae (Shedayi and Gulshan 2012; Amjad et al. 2017) together were the most dominant ones. Asteraceae was the utmost family of use in studies in Pakistan (Qureshi 2012; Ullah et al. 2013; Ajaib et al. 2013; Khan et al. 2014a; Khan et al. 2014b; Ahmad et al. 2015; Khan et al. 2018) and India (Muthulingam 2015; Murtem and Chaudhry 2016) whereas in other studies in Pakistan (Sarangzai et al. 2013) and India (Sivasankari et al. 2014) the maximum number of species used for medicinal purposes belonged to the Lamiaceae. Overall, the results of the present research were in line with the results of all mentioned studies.

**Ethnobotanical indices of the plants**

The highest values of the ethnobotanical indices RFC and CI were recorded for *P. atlantica* (0.888) and (4.091), respectively (Table 4).



**Figure 5.** Ailments in the studied area (Human ailments classification according to World Health Organization (WHO)). Note: DSS: Diseases of the skin and subcutaneous tissue, DMS: D. of the musculoskeletal system and connective tissue, IP: Infectious and parasitic d., EMM: External causes of morbidity and mortality, DGS: D. of the genitourinary system, DRS: D. of the respiratory system, DDS: D. of the digestive system, ENP: Endocrine, nutritional and metabolic d., IPC: Injury, poisoning and certain other consequences of external causes, CDC: Congenital malformations, deformations and chromosomal abnormalities, DCS: D. of the circulatory system, NS: D. of nervous system d., FHS: Factors influencing health status and contact with health services, PC: Pregnancy, childbirth and the puerperium, DEA: D. of the eye and adnexa, DBI: D. of the blood and blood-forming organs and certain disorders involving the immune mechanism, PP: Certain conditions originating in the perinatal period, N: Neoplasms, DEM: D. of ear and mastoid process, MB: Mental and behavioral d



**Figure 6.** The most commonly applied methods of preparation in the studied area. Note: Ashes: Burning the plant parts to make ash for different usage, Brewed: Mixing with hot water, Cook: Cooking the plant parts to serve it for different purposes, Decoction: Boiling the plant parts in water until the volume of the water reduced to minimum or required amount, Dry: Not useable when the plant parts are green, Extraction: Taking out the extract of the plants in concentrated form by force, Heating: Heating the plant parts on fire to be warm for special usage. Liniment: Make a liquid or lotion, especially one add with oil, for rubbing on the body to relieve pain, Poultice: A soft, moist mass of plant materials lonely or mixed with the other natural materials, applied to the body to relieve soreness and inflammation and kept in place with a cloth, Powder: Preparing by the grinding of shade dried plant parts, Raw: Using the plant parts without any action, Smoke: Burning the plant parts and using the smoke of them, Soak: make or allow the plant parts to become thoroughly wet by immersing them in liquid, Squashing: Crush or squeeze plant parts with a force so that it becomes flat, soft, or out of shape to use them lonely or mix with other natural materials, Vapor: A substance of plant parts diffused or suspended in the air, especially useable in the Chol method

The highest concordance of the informants was found for brucellosis, callus, eye infection, leukaemia, and wart with a  $F_{IC}$ -value of one. The lowest referred to rheumatism, joint pain, back pain, chest pain, and female infections (Table 5). For example, to treat brucellosis only one species was mentioned in 8 use reports resulting in a  $F_{IC}$ -value of one.

**Table 4.** List of the 9 species with the highest Relative Frequency Citation (RFC) including used Plant Parts (PP), Use Categories (UC), Number of Citations (NC), and Cultural Importance index (CI)

Species	PP	UC	NC	RFC	CI
<i>Achillea eriophora</i>	L, R	M, T	91	0.629	1.684
<i>Artemisia sieberi</i>	AP, L	C, M, O, T	122	0.703	2.258
<i>Berberis integerrima</i>	F, R	C, D, M, N	82	0.629	1.517
<i>Ferula assa-foetida</i>	AP, L, RE, R	D, M, N, O, T	75	0.703	1.332
<i>Mentha longifolia</i>	AP, F, L, R	M, N, T	93	0.685	1.721
<i>Peganum harmala</i>	AP, F, L, S	D, H, M, R	100	0.703	1.85
<i>Pistacia atlantica</i>	FL, F, L, O, RE, S	D, M, N, O, T	236	0.888	4.091
<i>Salvia mirzayanii</i>	AP, FL, L	M	115	0.74	2.129
<i>Thymus vulgaris</i>	L	M, N, T	113	0.722	2.091

Note: Plant Parts: AP: Aerial Parts, F: Fruit, FL: Flower, LA: Latex, L: Leaf, O: Oil, R: Root, RE: Resin, S: Seed, ST: Stem. Use Category: C: Drugs and cigarettes, D: Domestic and charcoal, F: Hunting, fishing and animal feed, H: Handicrafts, M: Medicinal use, N: Nutrition, spices and herbal teas, R: Rituals, T: Dental care and cosmetics, O: Others

**Table 5.** List of the 10 highest and 5 lowest Informant Consensus Factors (FIC) of ailments with at least 5 citations

Diseases	WHO category	Species	$F_{IC}$	UR
Brucellosis	1	<i>Citrullus colocynthus</i>	1	8
Callus	12	<i>Calotropis procera</i>	1	11
Eye infection	7	<i>Salvia macrosiphon</i>	1	10
Leukemia	2	<i>Artemisia sieberi</i>	1	6
Wart	1	<i>Calotropis procera</i>	1	8
Burns	19	<i>Pistacia atlantica</i>	0.931	37
Fatty Liver	11	<i>Artemisia sieberi</i>	0.9	7
Bones fracture	13	<i>Berberis integerrima</i>	0.89	12
Tooth cleaning	11	<i>Berberis integerrima</i>	0.857	22
Anti parasite	1	<i>Mentha longifolia</i>	0.847	5
Rheumatism	11	<i>Ferula assa-foetida</i>	0.578	30
Joint pain	14	<i>Nigella sativa</i>	0.575	8
Back pain	11	<i>Bromus japonicus</i>	0.566	5
Chest pain	14	<i>Pistacia atlantica</i>	0.5	6
Female's infections	14	<i>Salvia macrosiphon</i>	0.4	5

Note: Use Reports (UR) WHO Category: 1: Infectious and parasitic d., 2: Neoplasms, 6: D. of nervous system d., 7: D. of the eye and adnexa, 9: Diseases of the circulatory system, 11: D. of the digestive system, 12: D. of the skin and subcutaneous tissue, 13: D. of the musculoskeletal system and connective tissue, 14: Diseases of the genitourinary system, 18: Congenital malformations, deformations and chromosomal abnormalities, 19: Injury, poisoning and certain other consequences of external causes, 20: External causes of morbidity and mortality

**Table 6.** Overview of all identified plants from Taftan Mountain, Iran and their usage by local people

Species	Usage	PP	Preparation	Administration	UC	Citation	Informant
<i>Acantholimon stocksii</i> Boiss., Plumbaginaceae, Kolahe Mir Hasan, 054914	Cloths washing	L,R	Powder		T	20	20
<i>Achillea eriophora</i> DC. Asteraceae, Brenjast/ Zamboul, 054896	Abdominal pain	L,R	Decoction	Oral	M	11	10
		L	Soak				
	Children's abdominal pain	L	Decoction	Oral	M	2	2
	Children's diarrhea	L	Decoction	Body wash, oral	M	3	3 (1*)
	Children's food poisoning	L	Decoction	Body wash	M	1	1*
	Children's vomiting	L	Decoction	Body wash, oral	M	3	3 (1*)
	Diabetes	L	Decoction, powder	Oral	M	5	4 (2*)
		R	Powder				
	Diarrhea	L	Decoction, soak	Oral	M	16	13
		R	Decoction				
	External skin tumor	R	Poultice	Dermal	M	1	1*
	Fat disease	L	Powder	Oral	M	3	2*
		R	Powder, soak				
	Food poisoning	L	Decoction	Oral	M	3	3
	Gingival infection	L,R	Powder	Oral	M	2	1*
	Hand and foot numbness	R	Poultice	Topical	M	1	1*
	Hand and leg pain	R	Powder	Oral	M	1	1
	Herpes simplex	L,R	Powder	Oral	M	2	1*
	Intestinal problems	L,R	Decoction	Oral	M	2	1
	Mouth infection	L,R	Powder	Oral	M	3	2 (1*)
		L	Raw				
	Mouth ulcers	R	Decoction	Oral	M	2	2*
	Nausea	L	Decoction, soak	Oral	M	4	3
	Oral candidiasis	L,R	Powder	Oral	M	2	1*
	Stomach ache	L	Powder	Oral	M	6	4 (2*)
		R	Decoction				
	Stomach troubles	L	Powder	Oral	M	1	1*
	Strengthen teeth	R	Powder	Oral	T	1	1
	Tongue infections	L	Raw	Oral	M	1	1
	Vomiting	L	Decoction, soak	Oral	M	11	8
	Wound caused by crashes	L	Decoction	Oral	M	2	2 (1*)
		R	Poultice	Dermal			
	Wounds	L	Decoction	Oral	M	1	1
Wounds caused by gunshot	L	Decoction	Oral	M	1	1	
<i>Adiantum capillus-veneris</i> L., Pteridaceae, Siyah lengok,	Diuretic	L	Decoction	Oral	M	2	2
	Menstrual problems	L	Decoction	Oral	M	5	5

<i>Alhagi maurorum</i> Medik., Fabaceae, Shenz/Toranjabin,054910	Abdominal pain	FL	Decoction	Oral	M	1	1
	Base for the production of watermelons	R	Raw	Agriculture	O	1	1
	Blood purification	R	Decoction	Oral	M	1	1*+ sugar
	Body pain	LA	Raw	Oral	M	1	1
	Burns	R	Powder	Oral	M	1	1*
	Children's abdominal pain	LA	Raw	Oral	M	1	1
	Children's diarrhea	R	Decoction	Oral	M	1	1
	Children's jaundice	LA	Decoction, raw	Oral	M	3	3(1+ boiled water)
	Children's vomiting	R	Decoction	Oral	M	1	1
	Cooling characteristics on children's body	LA	Raw	Oral	M	2	2
	Fat disease	LA	Decoction	Oral	M	3	3
	Kidney pain	R,FL	Powder	Oral	M	6	6
	kidney stone	LA	Decoction, raw	Oral	M	11	11*
		R,FL	Powder, raw				
		LA	Decoction, raw				
	Liver disorder	LA	Decoction	Oral	M	3	3
	Men's gonorrhoea	FL	Decoction	Oral	M	2	2
	Nerve relief	LA	Raw	Oral	M	1	1
	Stomach disorder	LA	Decoction	Oral	M	1	1
	Urinary tract infections	LA	Decoction	Oral	M	3	3
<i>Allium oreophilum</i> C.A.Mey., Amaryllidaceae, Dahlek, 067625	Vegetable	L	Raw	Edible	N	33	33
<i>Allium schoenoprasum</i> L., Amaryllidaceae, Pimalonk/Kasimalonk, 067626	Abdominal pain	ST	Decoction	Oral	M	3	3*
		R	Decoction, powder				
	Body pain	ST	Decoction	Oral	M	2	2
	Constipation	R	Decoction	Oral	M	1	1*
	Kidney pain	R	Decoction	Oral	M	1	1*
	kidney stone	R	Decoction	Oral	M	1	1*
	Nervous discomfort	ST	Decoction	Oral	M	4	4
Vegetable	ST	Raw	Edible	N	11	11	
<i>Aloe vera</i> , Asphodelaceae, Arveh	Back pain after childbirth	L	Poultice	Rub whole body	M	1	1*
	Bee bite	L	Powder	Dermal	M	1	1
	Blood clotting	L	Heating	Topical	M	2	2(1+ Coconut oil) +(1*)
			Poultice	Dermal			
	Bone pain after childbirth	L	Poultice	Rub whole body	M	1	1*
	Bones fracture	L	Poultice	Topical	M	1	1*+ salt
	Bones pain caused by women's breast duct closure	L	Poultice	Topical	M	1	1*
	Burns	L	Smoke	Dermal	M	3	3*

Children's nausea	L	Poultice	Rub whole body	M	1	1* + Animal oil
Children's vomiting	L	Poultice	Rub whole body	M	1	1* + Animal oil
Eczema	L	Poultice	Dermal	M	1	1*
External skin tumor	L	Heating, poultice, powder	Dermal	M	4	4 (2*)
Fever caused by women's breast duct closure	L	Poultice	Topical	M	1	1*
Foot numbness	L	Poultice	Topical	M	1	1*
Infection of the wounds	L	Poultice	Dermal	M	1	1* + Milk
Infections	L	Poultice	Dermal	M	1	1*
Internal skin tumor	L	Poultice	Dermal	M	1	1*
Prevent infection	L	Poultice	Dermal	M	1	1*
Remove a piece of bone from body	L	Poultice	Topical	M	1	1* + Milk
Remove an external object from body	L	Poultice	Topical	M	1	1* + Milk
Swelling	L	Poultice	Topical	M	1	1*
Swelling caused by infection	L	Raw	Oral, topical	M	4	3
Women's breast duct closure	L	Poultice	Topical	M	1	1*
Wound caused by crashes	L	Poultice	Dermal	M	1	1*

*Althaea officinalis* L.,  
Malvaceae, Gole Khatmi

Body pain	FL	Decoction, soak	Oral	M	2	2
Bones pain	FL	Decoction, soak	Oral	M	4	4
Cold	FL	Decoction, soak	Oral	M	4	4 (2* + rock candy)
Cooling characteristics	FL	Soak	Oral	M	11	11 (2+ sugar)
Hand and foot numbness	FL	Soak	Oral	M	1	1
Hand and leg pain	FL	Soak	Oral	M	1	1
Infections	FL	Decoction, soak	Oral	M	3	3(2* + rock candy)
Joint pain	FL	Soak	Oral	M	1	1
leg pain	FL	Soak	Oral	M	1	1
Lung troubles caused by cold	FL	Decoction	Oral	M	2	2* + rock candy
Nausea	FL	Soak	Oral	M	1	1
Nerve relief	FL	Decoction, soak	Oral	M	4	4
Nervous discomfort	FL	Soak	Oral	M	2	2
Stomach function	FL	Soak	Oral	M	1	1

*Amygdalus brahuica* Boiss.,  
Rosaceae, Archen, 054908

Abdominal pain	ST	Decoction	Oral	M	2	2
Chest pain	ST	Decoction	Oral	M	1	1
House building	ST	Raw	Construction	D	6	6
Local dance wood	ST	Raw		R	3	3
Nuts	F	Heating	Edible	N	1	1
Paint Hizak***	R	Decoction	Milk production	D	1	1
Preparing a wooden handle for agricultural implements	ST	Raw	Agriculture	D	7	7
Protection against dangers	ST	Raw		O	2	2
Severe cough	ST	Decoction	Oral	M	2	2

	Walking stick	ST	Raw		O	3	3
<i>Amygdalus lycioides</i> Spach, Rosaceae, Archen,	Comestible	S	Raw	Edible	N	6	6
<i>Amygdalus scoparia</i> Spach, Rosaceae, Govatam,054906	Alzheimer	F	Decoction	Oral	M	1	1+ honey
	Asthma	F	Decoction	Oral	M	3	3
	Back pain	AP	Vapor	Chol****	M	2	2
	Blood pressure	S	Dry	Oral	M	2	2
	Body pain	AP	Vapor	Chol***	M	7	7
		O	Liniment	Dermal			
	Bones pain	AP	Vapor	Chol****	M	1	1
	Diabetes	F,S	Dry	Oral	M	3	3
	Face masks	RE	Raw	Dermal	T	1	1
	Fat disease	S	Dry	Oral	M	1	1
	Hair growth	RE,F	Decoction	Topical	T	3	3
	Hand and leg pain	AP	Vapor	Chol****	M	4	4
	Increase brightness of eyes	F	Decoction	Oral	M	2	2
	Joint pain	AP	Vapor	Chol****	M	1	1
	Knee pain	AP	Vapor	Chol****	M	1	1
	Nuts	F	Heating	Edible	N	5	5(3+ seed of wheat)
	Paint Mashk**	R	Decoction		D	1	1
	Rheumatism	AP	Vapor	Chol****	M	2	2
	Rice colander	ST	Raw		D	2	2
	Tragacanth	RE	Decoction	Topical	T	1	1
<i>Amygdalus spinosissima</i> Bunge, Rosaceae, Archen,054941	Grafting almonds for better crop	ST	Raw	Agriculture	O	3	3
<i>Apium graveolens</i> L.,	Abdominal pain	L	Powder	Oral	M	1	1
Apiaceae, Kharasf, 054902	Accelerating post-coma consciousness	AP	Poultice	Topical	M	1	1
	Asthma	L	Decoction	Oral	M	1	1
	Back pain	L	Decoction	Soaking body	M	3	2 (1*)
		AP	Decoction	Oral			
			Vapor	Chol****			
	Blood clots of head	L,AP	Poultice	Topical	M	2	2*
	Body pain	L	Decoction	Soaking body	M	6	5 (2*)
			Poultice	Rub whole body			
		AP	Decoction	Oral			
			Vapor	Chol****			
	Bones pain	L	Decoction	Soaking body	M	7	5 (2*)
			Poultice	Rub whole body			
		AP	Decoction	Oral			

	Brain lesions	AP	Vapor	Chol****			
	Children's pneumonia	L	Poultice	Topical	M	1	1*
	External skin tumor	L	Poultice	Rub whole body	M	1	1*
	Female infertility	AP	Decoction	Dermal	M	1	1*
	Fever caused by pain in joints and muscles	L	Poultice	Suppository	M	1	1* + animal oil
	Hand and foot numbness	L	Poultice	Dermal	M	1	1*
	Hand and leg pain	AP	Decoction	Topical	M	1	1*
			Vapor	Oral	M	9	5
	Joint pain	AP	Vapor	Chol****	M	1	1
	Male infertility	AP	Decoction	Suppository	M	1	1* + animal oil
	Rheumatism	AP	Vapor	Chol****	M	1	1
	Severe cough	L	Poultice	Rub whole body	M	1	1*
	Stomach ache	L	Decoction, powder	Oral	M	3	3 (1*)
	Typhoid fever	L	Poultice	Dermal	M	1	1*
	Wound caused by crashes	L	Poultice	Dermal	M	1	1*
<i>Artemisia aucheri</i> Boiss, Asteraceae, Barpi drannag, 054937	Better dairy product	I	Raw	Milk production	F	5	5
	Nausea	L	Decoction	Oral	M	3	3
	Nerve relief	L	Decoction	Oral	M	2	2
	Stomach ache	L	Decoction	Oral	M	4	4
	Vomiting	L	Decoction	Oral	M	1	1
<i>Artemisia lehmanniana</i> Bunge, Asteraceae, Barpi drannag, 054922	Bandaging wounds	F	Powder	Dermal	M	5	5
<i>Artemisia santolina</i> Schrenk, Asteraceae, Siyah deranag, 067619	Diarrhea	AP	Decoction	Oral	M	7	7
	External skin tumor	AP	Powder	Dermal	M	5	5
	Nausea	AP	Decoction	Oral	M	1	1
	Skin rash	AP	Powder	Dermal	M	3	3
	Vomiting	AP	Decoction	Oral	M	5	5
<i>Artemisia sieberi</i> Besser, Asteraceae, Derannag, 054895	Abdominal pain	L,AP	Decoction	Oral	M	7	7
	Accelerating post-coma consciousness	AP	Poultice	Topical	M	1	1*
	Acne	AP	Decoction	Dermal	T	1	1
	Anemia	AP	Decoction	Oral	M	1	1
	Anti parasite	AP	Decoction	Oral	M	1	1
	Back pain	L	Decoction	Soaking body	M	2	2 (1*)
		AP	Vapor	Chol****			
	Bee bite	AP	Decoction, soak	Dermal	M	3	3
	Blood clots of head	AP	Poultice	Topical	M	2	2*
	Body pain	L	Decoction	Soaking body	M	8	7 (3*)
			Poultice	Rub whole body			

	AP	Powder Vapor	Oral Chol****, inhalation			
Bones pain	L	Decoction Poultice Vapor	Soaking body Rub whole body Chol****, inhalation	M	4	4 (3*)
Brain lesions	AP	Poultice	Topical	M	1	1
Children's abdominal pain	AP	Decoction	Body wash	M	1	1
Children's diarrhea	AP	Decoction	Body wash	M	2	2 (1*)
Children's food poisoning	L	Decoction	Oral	M	2	2 (1*)
Children's jaundice	AP	Decoction	Body wash			
Children's nausea	AP	Poultice	Oral, pill	M	2	2
Children's vomiting	AP	Decoction	Dermal	M	1	1* + animal oil
		Poultice	Dermal	M	2	2 (2*)
Diarrhea	L,AP	Decoction	Body wash			
	AP	Raw	Oral	M	9	7
Digestive system disorders	L	Decoction	Inhalation			
Fat disease	L,AP	Decoction	Oral	M	1	1
Fatty liver	L,AP	Decoction, soak	Oral, pill	M	7	7 (1*)
Female's infections	L	Powder	Oral, pill	M	7	7
Fever caused by pain in joints and muscles	AP	Poultice	Oral	M	1	1*
Hand and foot numbness	AP	Poultice	Dermal	M	1	1*
Hand and leg pain	AP	Vapor	Topical	M	1	1*
Headache	AP	Vapor	Chol****	M	3	3
Infertility	L	Powder	Inhalation	M	1	1*
Jaundice	AP	Decoction	Oral	M	1	1*
Joint pain	AP	Vapor	Oral	M	2	2
Leukemia	AP	Decoction	Chol****	M	2	2
Liver disorder	AP	Decoction	Oral, pill	M	6	5
Nausea	AP	Decoction	Oral	M	1	1
	L	Raw	Dermal, oral	M	11	10
Nerve relief	AP	Decoction	Inhalation			
Quit addiction	L	Decoction	Oral	M	1	1
Rheumatism	AP	Vapor	Oral	C	2	1
Severe abdominal pain	L	Decoction, powder	Chol****	M	1	1
Severe diarrhea	AP	Raw	Oral	M	2	1
		Decoction	Inhalation	M	2	1
Skin allergy	AP	Decoction	Oral			
Stomach ache	AP	Decoction	Dermal	M	1	1
Stomach function	AP	Decoction	Oral	M	1	1
Stomach troubles	AP	Decoction	Pill	M	1	1
Stomach ulcers	AP	Decoction	Oral	M	2	2
		Decoction	Oral	M	1	1

	Typhoid fever	AP	Poultice	Dermal	M	1	1*
	Vomiting	AP	Decoction	Dermal, oral	M	10	9
		L	Raw	Inhalation			
	Wounds	AP	Decoction	Oral			
			Raw	Inhalation	M	2	2
			Ashes	Dermal			
<i>Asparagus officinalis</i> L., Liliaceae, Marmotk	Abdominal pain	R	Decoction, powder	Oral	M	8	7 (3*)
	Body pain	R	Decoction, powder	Oral	M	4	4
	Constipation	R	Decoction	Oral	M	1	1*
	Diabetes	R	Decoction	Oral	M	1	1
	Female's infections	R	Decoction	Oral	M	1	1*
	Kidney pain	R	Decoction, powder	Oral	M	5	5 (1*)
	kidney stone	R	Decoction, powder	Oral	M	7	7 (2*)
<i>Astragalus albispinus</i> Sirj. & Bornm., Fabaceae, Kharok/ Jangok, 054915	Comestible	F	Raw	Edible	N	11	11
<i>Astragalus fasciculifolius</i> Boiss., Fabaceae, Govenjet	Chest infection	R	Decoction	Oral	M	2	2
	Children's broken head	F	Poultice	Topical	M	1	1*
	Children's chest infection	R	Decoction	Oral	M	1	1
	Children's chest pain	R	Decoction	Oral	M	1	1
	Children's shortness of breath	R	Heating	Oral	M	1	1*+ Milk
	Children's throat infection	R	Decoction	Oral	M	1	1
	Children's throat pain	R	Decoction	Oral	M	1	1
	Cold – prevention	R	Powder	Suspension	M	1	1+ milk
	Cough	L	Powder	Suspension	M	4	4 (1+ milk)
		R	Decoction	Oral			
	External skin tumor	R	Poultice	Dermal	M	1	1*
	Increase immunity	R	Decoction	Oral	M	2	2
	Infections	R	Decoction	Oral	M	3	3
	Lumbar vertebrae	R	Decoction	Oral	M	1	1
	Mouth ulcers	R	Raw	Topical	M	2	2
	Osteoporosis	R	Decoction	Oral	M	2	2
	Severe cough	R	Decoction	Oral	M	2	2+ milk
			Powder	Suspension			
	Stomach ulcers	R	Decoction	Oral	M	1	1
	Throat infection	R	Decoction	Oral	M	1	1
	Toothache	R	Raw	Topical	M	1	1
	Wounds	R	Decoction	Oral	M	1	1
<i>Astragalus fischeri</i> Buhse ex fisch, Fabaceae, Khorma Kourochok	Cleaning lumbar vertebrae	R	Decoction, powder	Oral	M	2	1+ honey
<i>Astragalus mucronifolius</i> Boiss.,	Eye kohl	R	Ashes	Topical	T	7	7

Fabaceae, Kalilak	Livestock forage	AP	Raw	Fodder	F	14	14	
<i>Berberis integerrima</i> Bunge, Berberidaceae, Zereshk Kohi/ Zarch, 054892	Additive to rice	F	Raw, soak	Edible	N	3	3	
	Anti parasite	R	Decoction	Oral	M	1	1	
	Back pain	R	Decoction	Oral	M	3	3	
	Blood clotting	R	Decoction	Oral	M	2	2	
	Blood pressure	F	Extraction	Oral	M	1	1	
	Blood purification	F	Extraction, squashing	Oral	M	5	4	
			R	Decoction				
	Blood regulation	F	Extraction	Oral	M	1	1	
	Bones fracture	R	Decoction	Oral, pill, topical	M	22	18 (1*)	
				Powder, soak	Oral			
	Bones pain	R	Decoction, powder	Oral	M	3	3 (1*)	
	Dilute blood	R	Decoction	Oral	M	3	3	
	Fatty liver	F	Squashing	Oral	M	12	10 (1*)	
				Powder	Suspension			
			R	Decoction	Oral, pill			
	Hand and leg pain	R	Powder	Oral	M	1	1*	
	Infections	R	Decoction	Oral	M	1	1	
	Joint pain	R	Decoction	Oral	M	2	2	
	Lumbar disc	R	Decoction	Oral	M	1	1	
	Paint industry (yellow color)	R	Decoction	Industry	O	2	2	
	Pickle	F	Soak	Edible	N	2	2	
	Quit addiction	R	Decoction	Oral	C	1	1	
	Stomach ache	R	Decoction, powder	Oral	M	2	2 (1*)	
Stomach ulcers	R	Decoction	Oral	M	1	1		
Stop the bleeding	R	Decoction	Oral	M	1	1		
Wound caused by crashes	R	Decoction	Oral	M	1	1		
Wounds	R	Decoction, soak	Oral	M	9	6		
			Powder	Oral, suspension				
Wounds caused by gunshot	R	Decoction	Oral	M	2	2		
<i>Bromus japonicus</i> Houtt., Poaceae, Nadag, 054918	Arthritis	AP	Vapor	Chol****	M	1	1	
	Asthma	AP	Decoction	Oral	M	2	2	
	Back pain	AP	Vapor	Chol****	M	2	2	
	Body pain	AP	Decoction	Oral	M	10	9 (1*)	
				Vapor	Chol****			
	Bones pain	AP	Vapor	Chol****	M	5	5	
	Hand and leg pain	AP	Decoction	Oral	M	9	8	
				Vapor	Chol****			
	Joint pain	AP	Vapor	Chol****	M	5	5	
	Knee pain	AP	Vapor	Chol****	M	1	1	
Rheumatism	AP	Vapor	Chol****	M	2	2		
<i>Calotropis procera</i> (Aiton)	Bee bite	LA	Raw	Dermal	M	5	5	

W.T.Aiton, Asclepiadaceae, Kark, 067623	Bones pain	LA	Raw	Topical	M	1	1
	Callus	LA	Raw	Topical	M	11	11
	Swelling of feet	L	Raw	Topical	M	4	4
	Wart	LA	Raw	Topical	M	8	8
<i>Carthamus oxyacantha</i> M.Bieb, Asteraceae, Khar shotor, 067615	Kidney stone	L	Decoction	Oral	M	1	1
	Stomach troubles	L	Decoction	Oral	M	2	2
<i>Celtis caucasica</i> Willd., Cannabaceae, Tak	Crackers for celebrations	F	Raw		R	6	6
<i>Cicer spiroceras</i> Jaub. & Spach, Fabaceae, Torshak/Toroshpak, 054899	Abdominal pain	F	Decoction	Oral	M	4	4
	Additive to food	F	Decoction	Edible	N	2	2
	Appetizer	FL	Raw	Oral	N	1	1
	Fat disease	L,FL	Powder	Oral	M	3	2
	Sauce	F	Decoction	Edible	N	1	1
	Stomach ache	L,FL	Powder	Oral	M	3	2
		F	Decoction				
	Vegetable	L,FL	Raw	Edible	N	2	1
	Vitamin C deficiency	FL	Raw	Oral	N	1	1
<i>Citrullus colocynthis</i> (L.) Schrad., Cucurbitaceae, Kalkoshtak, 067636	Body pain	AP	Vapor	Chol****	M	4	4
	Bones pain	AP	Vapor	Chol****	M	4	4
	Brucellosis	L,AP	Vapor	Chol****	M	8	8
	Diabetes	F	Decoction, squashing	Foot soak	M	20	19 (1*)
		S	Dry	Oral			
	Ear pain	F	Decoction	Topical	M	3	3
	Fat disease	S	Dry	Oral	M	4	4
	Hand and leg pain	L	Vapor	Chol****	M	5	5
		F	Squashing	Foot soak			
	Infections	F	Squashing	Foot soak	M	2	2
	Joint pain	F	Squashing	Foot soak	M	3	3
		AP	Vapor	Chol****			
	Strengthen teeth	F	Dry	Mouth washing	T	3	3
<i>Clypeola jonthlaspi</i> L., Brassicaceae, Totari, 067620	Asthma	S	Decoction	Oral	M	1	1
	Baking bread	S	Cook	Edible	N	2	(2+Popcorn's seed)
	Chest infection	S	Decoction, soak	Oral	M	7	7(2+ boiled milk) +( 2+ milk)
			Powder	Suspension			
	Cold	S	Decoction, soak	Oral	M	7	7 (2+ boiled milk) +( 2+milk)
			Powder	Suspension			
	Cough	S	Raw	Oral	M	1	1
House building	AP	Squashing	Construction	D	5	5	

	Lung infection	S	Powder	Suspension	M	3	3+ milk
	Severe cough	S	Decoction	Oral	M	3	3 (2+ milk)
	Stomach ache	S	Powder	Suspension			
			Decoction	Oral	M	3	3 (2+ milk)
	Stomach troubles	S	Powder	Suspension			
			Raw, soak	Oral	M	3	3
	Throat infection	S	Decoction	Oral	M	4	4
					M	1	1*
<i>Commiphora wightii</i> (Arn.) Bhandari, Burseraceae, Goggol	Bronchitis caused by Smoke	L	Powder	Suspension			
	Cardiovascular disease	L	Powder	Suspension	M	1	1*
	Children's shortness of breath	L	Decoction	Oral	M	1	1*
	External skin tumor	L	Poultice, powder	Dermal	M	5	5 (2*)
	Fever caused by pain in joints and muscles	L	Decoction	Dermal	M	1	1*
	Kidney pain	L	Soak	Oral	M	4	4
	kidney stone	L	Decoction, powder, soak	Oral	M	7	7 (2*)
	Shortness of breath (by Smoke)	L	Powder	Suspension	M	1	1*
<i>Cotoneaster nummularius</i> Fisch. & C.A.Mey., Rosaceae, Siyah latt	House building	ST	Raw	Construction	D	7	7
	Preparing a wooden handle for agricultural implements	ST	Raw	Agriculture	D	5	5
<i>Cotoneaster pruinosus</i> G.Klotz, Rosaceae, Siyah latt,	Comestible	S	Raw	Edible	N	5	5
<i>Cousinia stocksii</i> C.Winkl., Asteraceae, Khar vashek/Polosh, 067616	Comestible	P	Raw	Edible	N	9	9
<i>Descurainia sophia</i> (L.) Webb ex Prantl, Brassicaceae, Khakshir, 067378	Abdominal pain	S	Decoction, soak	Oral	M	11	8 (2*+ (2 + sugar))
	Acne	S	Soak	Oral	T	5	5
	Anemia	S	Soak	Oral	M	1	1
	Children's intestinal obstruction	S	Soak	Oral	M	2	2
	Children's intestinal problems	S	Soak	Oral	M	2	2
	Constipation	S	Soak	Oral	M	4	4 (1*)
	Cooling characteristics	S	Soak	Oral	M	2	2 (2 + sugar)
	Fever	S	Soak	Oral	M	1	1
	Softness of Stomach	S	Soak	Oral	M	3	3 (1+ rock candy) +(1+ water)
	Softness of intestines in Ramadan	S	Soak	Oral	R	4	4
	Stomach ache	S	Soak	Oral	M	3	3 (1+ rock candy)
	Stomach function	S	Soak	Oral	M	2	2 (1 + sugar)
	Stomach troubles	S	Soak	Oral	M	5	5 (3*)+(1+ boiled water)
	Thirst in Ramadan	S	Soak	Oral	R	4	4

	Typhoid fever	S	Soak	Oral	M	1	(1+ rock candy)	
<i>Ducrosia anethifolia</i> (DC.) Boiss., Apiaceae, Shotk/ Govatak, 054917	Abdominal pain	S	Decoction, powder, soak	Oral	M	6	5 (4*)+(1+ rock candy)	
	After childbirth	L	Decoction					
		S	Powder	Oral, suspension	N	4	3 (1*)	
	Asthma		Decoction	Oral				
		S	Decoction, powder	Oral	M	2	2 (1*)	
	Back pain	AP	Vapor	Chol*****	M	1	1	
	Bloating	S	Decoction, powder	Oral	M	6	5 (1+ rock candy)	
		L	Decoction					
	Blood clotting	S	Poultice	Dermal	M	2	1*	
	Body pain	S	Decoction, poultice	Oral, rub whole body	M	4	3 (1*)	
		AP	Vapor	Chol*****				
	Body weakness after Childbirth	S	Powder	Suspension	N	1	1*	
	Bone pain after childbirth	S	Powder	Suspension	N	1	1*	
	Bones pain	S	Poultice	Rub whole body	M	2	2 (1*)	
			Decoction	Oral				
	Childbirth thirst	S	Powder	Suspension	N	2	1*	
			Decoction	Oral				
	Children's abdominal pain	L	Decoction	Oral	M	2	2	
	Children's bloating	S,L	Decoction	Oral	M	3	3	
	Constipation	S	Decoction	Oral	M	1	1	
	Fat disease	S	Powder	Oral	M	1	1	
	Female's infections	S	Decoction	Oral	M	1	1*	
	Hand and leg pain	S	Decoction	Oral	M	2	2	
AP		Vapor	Chol*****					
Infections	S	Poultice	Dermal	M	1	1*		
Internal tumors	S	Decoction	Oral	M	1	1*		
Kidney pain	S	Decoction	Oral	M	1	1*		
kidney stone	S	Decoction	Oral	M	2	2 (2*)		
Menstrual irregularities	S	Powder	Oral	M	1	1		
	S	Decoction, powder	Oral	M	6	6 (3*)		
Stomach ache		Powder	Suspension					
	S	Decoction	Oral	M	2	2		
Stomach function	S	Decoction	Oral	M	2	2 (1*)		
Stomach troubles	S	Powder	Oral	M	2	2*		
Swelling	S	Poultice	Dermal	M	3	2*		
		Powder	Oral					
<i>Elaeagnus angustifolia</i> L., Elaeagnaceae, Senjed	House building	ST	Raw	Construction	D	6	6	
	Nuts	F	Raw	Edible	N	3	3	
<i>Elwendia persica</i> (Boiss.) Pimenov & Kljuykov, Apiaceae, Ezbotk, 067617	Blood clots of head	S	Poultice	Topical	M	1	1*	
	Children's chest infection	S	Soak	Oral	M	2	2 (1+mother's milk)	
			Powder	Suspension				
Children's chest pain	L	Decoction	Body wash	M	1	1		

	Children's shortness of breath	S	Powder	Oral	M	2	2
	Children's throat pain	L	Decoction	Body wash	M	1	1
	Children's vomiting	R	Decoction	Oral	M	1	1* + rock candy
	Cold	S	Brewed, decoction, soak	Oral	M	6	6
	Cough	S	Brewed, decoction	Oral	M	3	3
	Fever caused by pain in joints and muscles	S	Poultice	Dermal	M	1	1*
	Fragrance	S	Decoction		T	1	1
	Hand and foot numbness	S	Poultice	Dermal	M	1	1*
	Infections	S	Decoction	Oral	M	3	3
	Intestinal problems	S	Decoction	Oral	M	1	1
	Jaundice	S	Brewed	Oral	M	3	3 + rock candy
	Kidney pain	S	Soak	Oral	M	3	3
	Severe cough	S	Decoction	Dermal, oral	M	3	2
			Smoke	Inhalation			
	Stomach ache	S	Powder, soak	Oral	M	5	5 (2*)
	Stomach troubles	S	Powder	Oral	M	1	1*
	Throat pain	S	Powder, soak	Oral	M	2	2
	Typhoid fever	S	Poultice	Dermal	M	1	1*
<i>Ephedra intermedia</i> Schrenk & C: A: Mez., Dipsaceae, Hommouk, 067381	Paint Hizak***	R	Decoction	Milk production	D	2	2
	Paint Mashk**	R	Decoction		D	1	1
	Stomach ache	R	Decoction	Oral	M	3	3
<i>Eryngium bungei</i> Boiss. Apiaceae, Kharoshk, 067614	Camel forage	AP	Raw	Fodder	F	7	7
<i>Euphorbia buhsei</i> Bioss. Euphorbiaceae, Mashirag, 054930	Infection of wounds	LA	Raw	Dermal	M	2	2
	Wounds	LA	Decoction, raw	Dermal	M	2	2 (1+ boiled animal oil)
<i>Euphorbia gedrosiaca</i> Rech.f., Aellen & Esfand. Euphorbiaceae, Lahm shirag, 054931	Back pain	FL	Decoction	Oral	M	4	4
	Body pain	FL	Decoction	Oral	M	5	5
	Bones pain	FL	Decoction	Oral	M	2	2
	Kidney pain	FL	Decoction	Oral	M	8	8
<i>Ferula ammoniacum</i> (D.Don) Spalik, M.Panahi, Piwczynski & Puchalka, Apiaceae, Poshk, 067629	Women's body hair removal	RE	Raw	Dermal	T	6	6
<i>Ferula assa-foetida</i> L., Apiaceae, Angozah, Rab, 054900	Accelerating post-coma consciousness	RE	Poultice	Topical	M	1	1*
	Anti parasite	AP	Decoction	Oral	M	30	27
		L	Cook	Edible			
		RE	Decoction	Oral			
	Blood clots of head	RE	Raw Poultice	Suppository Topical	M	1	1*

	Body pain	L	Decoction	Edible	M	1	1
	Bones pain	L	Cook	Edible	M	1	1
	Brain lesions	RE	Poultice	Topical	M	1	1*
	Children's bdominal pain	RE	Decoction	Oral	M	3	3
	Cold – prevention	R	Decoction	Oral	M	2	2
	Crop pest control	RE	Raw	Agriculture	D	10	10
	Food	L	Cook	Edible	N	10	10
	Hand and leg pain	L	Cook	Edible	M	1	1
	Intestinal problems	L	Cook	Edible	M	1	1
	Livestock parasitic ulcers	AP	Raw	Milk production	O	1	1
	Protect seeds against vermin	RE	Raw	Agriculture	O	7	7
	Stomach cleansing	L	Cook	Edible	M	1	1
	Suture	R	Decoction	Industry	O	1	1
	Toothache	RE	Decoction	Mouth washing	M	3	3
<i>Ferula aucheri</i> (Boiss.) Piwczynski, Spalik, M.Panahi & Puchalka, Apiaceae, Oshterk/Paterk, 054905	Accelerating post-coma consciousness	RE	Poultice	Topical	M	1	1*
	Anti parasite	L	Cook	Edible	M	4	4
		RE	Decoction	Oral			
	Bedsore	RE	Decoction	Oral	M	2	2
	Blood clots of head	R	Poultice	Topical	M	1	1*
	Body pain	L	Vapor	Chol****	M	2	2
	Bones pain	L	Vapor	Chol****	M	3	3
				Cook	Edible		
	Brain lesions	RE	Poultice	Topical	M	1	1*
	External skin tumor	RE	Poultice, powder	Dermal	M	9	9 (3*)
	Food	L	Cook	Edible	N	6	6
	Hand and Leg pain	L	Vapor	Chol****	M	6	6
				Cook	Edible		
	Infection of wounds	RE	Poultice	Dermal	M	1	1* + milk
	Infections	RE	Decoction, raw	Oral,topical	M	7	7
				Cook	Edible		
	Internal skin tumor	RE	Poultice	Dermal	M	1	1*
	Joint pain	L	Vapor	Chol****	M	2	2
	Kidney infections	RE	Decoction	Oral	M	2	2
	Kidney pain	RE	Decoction	Oral	M	1	1
	Remove a piece of bone from body	RE	Poultice	Topical	M	1	1* + milk
	Remove an external object from body	RE	Poultice	Topical	M	1	1* + milk
	Stomach ache	L	Cook	Edible	M	3	3
			R	Decoction			
Toothache	R	Decoction	Mouth washing	M	1	1	
Wound caused by crashes	RE	Poultice	Dermal	M	1	1*	
Wounds	RE	Raw	Topical	M	6	6	
			Decoction, powder	Dermal			
<i>Ferula ovina</i> Bioss, Apiaceae,	Better dairy products	L,AP	Raw	Milk production	F	7	7

Kamah, 067380	Body pain	AP	Vapor	Chol****	M	1	1
	Hand and leg pain	AP	Vapor	Chol****	M	1	1
	Increase immunity	L	Decoction	Oral	M	3	3
	Rubber manufacturing industry	LA	Raw	Industry	O	2	2
<i>Foeniculum vulgare</i> Mill., Apiaceae, Raz, 054903	Abdominal pain	S	Powder	Suspension	M	2	2 (1*)
	After childbirth	S	Decoction	Oral	N	3	3 (1*)
	Bread flavor	S	Powder	Suspension	N	5	5 (1+ Flour)
	Children's abdominal pain	S	Powder, raw	Edible	M	1	1
	Children's severe crying	S	Decoction	Oral	M	1	1
	Cooling characteristics on children's body	S	Decoction	Oral	M	1	1
	Digestive system disorders	S	Powder	Oral	M	1	1
	Female's infections	S	Powder	Oral	M	5	5
	kidney stone	S	Powder	Oral	M	2	2
	Set Ladies monthly menstruation	S	Powder	Oral	M	2	2
	Stew flavor	S	Raw	Edible	N	1	1
	Stomach ache	S	Powder	Oral	M	5	5 (1*)
	Urinary tract infections	S	Powder	Oral	M	2	2
	<i>Fortuynia garcinii</i> (Burm.f.) Shuttlew., Brassicaceae, Kalmak, 054920	Accelerating post-coma consciousness	L	Poultice	Topical	M	1
Alzheimer		L	Decoction	Topical	M	1	1
Blood clots of head		L	Poultice	Topical	M	1	1 (1*)
Brain lesions		L	Poultice	Topical	M	1	1 (1*)
Cough		L	Powder	Oral	M	1	1
Severe cough		L	Powder	Oral	M	2	2
<i>Gaillonia macrantha</i> Blatt. & Hallb, Rubiaceae, Tosso/Khar toos, 067631	Abdominal pain	L	Decoction	Oral	M	3	3
	Bloating	L	Decoction	Oral	M	1	1
	Children's abdominal pain	L	Powder	Oral, suspension	M	3	3 (1+animal oil/mother's milk + rock candy)
	Children's bloating	L	Decoction	Oral	M	1	1
	Children's severe crying	L	Powder	Oral	M	1	1
	Children's stomach Function	L	Decoction	Oral	M	4	4 (1+ mother's milk+rock candy)
	Children's supplemental food after childbirth	L	Powder Powder	Oral, suspension Suspension	M	2	2 (2+ animal oil+ rock candy)
	Diarrhea	L	Decoction	Oral	M	4	4
	Jaundice	L	Decoction	Oral	M	2	2
	Stomach function	L	Powder Decoction	Oral Oral	M	2	2

	Vomiting	L	Decoction	Oral	M	3	3	
<i>Glycyrrhiza glabra</i> L., Fabaceae, Maddoh/Shirin Bayan, 054894	Back pain	AP	Vapor	Chol****	M	1	1	
	Body pain	AP	Vapor	Chol****	M	4	4	
	Bones pain	AP	Vapor	Chol****	M	4	4	
	Bronchitis	R	Decoction	Oral	M	1	1	
	Children's stomach pain	R	Decoction	Oral	M	1	1	
	Hair loss	R	Decoction	Oral	T	1	1	
	Hand and leg pain	AP	Vapor	Chol****	M	5	5	
	Joint pain	AP	Vapor	Chol****	M	4	4	
	Kidney pain	R	Decoction	Oral	M	5	5	
	Knee pain	AP	Vapor	Chol****	M	1	1	
	Lung infection	R	Decoction	Oral	M	1	1	
	Osteoporosis	R	Decoction	Oral	M	2	2	
	Quit smoking	R	Powder	Oral	C	1	1	
	Rheumatism	AP	Vapor	Chol****	M	2	2	
	Runny nose	R	Decoction	Oral	M	1	1	
	Stomach ache	R	Decoction, powder	Oral, pill	M	18	16 ( 2*)	
			AP	Decoction	Oral			
		Stomach cancer	R	Decoction	Oral	M	2	2
		Stomach diseases	R	Decoction	Oral	M	1	1
		Stomach infection	R	Decoction	Oral	M	2	2
	Stomach troubles	R	Decoction, powder	Oral	M	2	1 (1*)	
	Stomach ulcers	R	Decoction	Oral	M	4	4	
<i>Haloxylon salicornicum</i> (Moq.) Bunge ex, Amaranthaceae, Terat, 054912	After childbirth	AP	Vapor	Chol****	M	2	2	
	Hair loss in women after childbirth	AP	Vapor	Chol****	M	2	2	
	Paint Hizak***	L	Decoction	Milk production	D	4	4	
	Paint Mashk**	L	Decoction		D	2	2	
	Tooth loss in women after childbirth	AP	Vapor	Chol****	M	2	2	
	Urticaria	AP	Vapor	Chol****	M	3	3	
<i>Hordeum aegiceras</i> Nees ex Royle, Poaceae, Joe	Baking bread	S	Cook	Edible	N	1	1	
	Body pain	ST	Vapor	Inhalation	M	1	1 (1*)	
	Bones pain	ST	Vapor	Inhalation	M	1	1 (1*)	
	Cooling characteristics	S	Powder	Oral	M	1	1	
	Diabetes	S	Powder	Oral	M	1	1	
	Headache	ST	Vapor	Inhalation	M	1	1 (1*)	
	Physical strength	S	Powder	Oral	M	1	1	
	Wounds	AP	Squashing	Oral	M	2	2	
<i>Hyoscyamus malekianus</i> Parsa, Solanaceae, Kermeshan/Samahkosh, 054921	Anti parasite	L	Decoction	Oral	M	2	2	
	Killing a larva in body	L	Decoction	Oral	M	1	1	

<i>Juglans regia</i> L., Juglandaceae, Gerdo, 054946	Diabetes	L	Decoction	Oral	M	2	2
	Paint Hizak***	R	Decoction	Milk production	D	7	7
<i>Launaea acanthodes</i> (Boiss.) Kuntze, Asteraceae, Chazho/ Kontak, 054919	Strainer for livestock milk	AP	Raw	Milk production	D	11	11
<i>Linum usitatissimum</i> L. Linaceae, Barza	Children's throat infection	L	Decoction	Oral	M	2	2
	Children's throat pain	L	Decoction	Oral	M	2	2
	Cold	L	Powder	Suspension	M	2	2 (2*)
	External skin tumor	L	Poultice	Dermal	M	1	1*
	Infection of the wounds	L	Powder	Dermal	M	2	2
	Throat infection	L	Decoction	Oral	M	1	1
	Throat pain	L	Decoction	Oral	M	1	1
	Warming characteristics	L	Decoction	Oral	M	2	2
<i>Lycium depressum</i> Stocks, Solanaceae, Zirok bakhti, 054939	Children's chest infection	L	Powder	Topical	M	1	1
	Children's chest pain	L	Powder	Topical	M	1	1
	Children's pneumonia	L	Poultice	Rub whole body	M	1	1*
	Children's shortness of breath	L	Powder	Dermal	M	2	2
	Children's throat pain	L	Powder	Topical	M	1	1
	Fever	F	Decoction	Oral	M	1	1
	Preparing a wooden handle for agricultural implements	ST	Raw	Agriculture	D	4	4
	Severe cough	L	Poultice	Rub whole body	M	1	1*
	Stomach ache	F	Decoction	Oral	M	2	2
	Cooling characteristics	L	Powder	Oral	M	2	2
<i>Marrubium anisodon</i> K.Koch, Lamiaceae, Spidroshk, 054942	Cooling characteristics on children's body	L	Powder	Oral	M	2	2
	Men's gonorrhea	L	Powder	Topical	M	7	7
<i>Medicago sativa</i> L., Fabaceae, Alap	Anemia	AP	Cook, raw	Edible	M	2	1
	Body pain	AP	Vapor	Chol****	M	2	2
	Bones pain	AP	Vapor	Chol****	M	1	1
	Diabetes	AP	Cook, heating	Edible	M	2	2
	Female infertility	AP	Cook, raw	Edible	M	4	4
	Hand and leg pain	AP	Vapor	Chol****	M	2	2
	Joint pain	AP	Vapor	Chol****	M	1	1
	Male infertility	AP	Raw	Edible	M	4	4
	Warming characteristics	AP	Raw	Edible	M	1	1
<i>Mentha longifolia</i> (L.) L., Lamiaceae, Porchenk, 054891	Abdominal pain	FL	Decoction	Oral	M	3	3 (1*)
		L	Powder				

	Asthma	L	Raw	Oral	M	3	3
	Bloating	FL,L	Decoction	Oral	M	2	2 (1*)
	Blood pressure	R	Powder	Oral	M	1	1
	Blood regulation	R	Powder	Oral	M	1	1
	Body pain	AP	Vapor	Chol****	M	3	3
	Bones pain	AP	Vapor	Chol****	M	3	3
	Children's vomiting	FL	Decoction	Oral	M	1	1*
	Cold	L	Decoction, raw	Oral	M	3	3
	Cooling characteristics	L	Powder	Oral, suspension	M	2	2 (1+ boiled milk)
	Diarrhea	R,FL	Decoction	Oral	M	8	8(1*) + (1+ rock candy)
		L	Powder, raw				
	Digestive system Disorders	L	Raw	Oral	M	3	3
	Dysentery	FL	Decoction	Oral	M	2	2 (1*+1+rock candy)
	Flavor of tea	L	Raw		N	14	14
	Food	L	Raw	Edible	N	2	2 (1+ yoghurt) + (1+whey)
	Food Poisoning	FL	Decoction, raw	Oral	M	4	4 (1*) + (1= rock candy)
	Hand and leg pain	AP	Vapor	Chol****	M	2	2
	Intestinal problems	F	Decoction	Oral	M	1	1*
	Joint pain	AP	Vapor	Chol****	M	1	1
	Men's gonorrhoea	L	Decoction	Oral	M	1	1 + Tea
	Nausea	L,R	Decoction	Oral	M	3	2 + rock candy
	Nerve relief	L	Decoction, raw	Oral	M	3	3
	Severe abdominal pain	L	Powder	Oral	M	1	1
	Stomach ache	R	Decoction	Oral	M	8	8*
		L	Powder, raw				
	Stomach diseases	F	Decoction,raw	Oral	M	2	2
	Stomach function	L	Raw,powder	Oral	M	3	3
	Stomach troubles	L	Powder	Oral	M	1	1*
	Tea	R	Powder		N	1	1
	Tooth cleaning	L	Raw	Topical	T	5	5
	Vomiting	FL,L,R	Decoction	Oral	M	6	6(1*) + (3+ rock candy)
<i>Myrtus communis</i> L., Myrtaceae, Mort	Children's antiparasite	L	Squashing	Suppository	M	3	3
	Hair loss	L	Decoction	Topical	T	1	1
	Herpes simplex	O	Raw	Topical	M	1	1
	Oral candidiasis	O	Raw	Topical	M	1	1
	Skin allergy	L	Smoke	Dermal	M	3	3
	Urticaria	L	Smoke	Dermal	M	4	4
<i>Nannorrhops</i> H.Wendl., Arecaceae, Pish	Handicrafts	L	Raw		H	3	3
	House building	ST	Raw	Construction	D	5	5
	Making a Basket	L	Raw		D	2	2
	Making a broom	L	Raw		D	1	1
	Providing local shoes (Savas)	L	Raw		H	7	7

	Rice colander	L	Raw		O	2	2
<i>Nigella sativa</i> L., Ranunculaceae, Siyah danag	Bloating	S	Powder	Oral	M	8	8
	Cancer	S	Powder	Suspension	M	2	2 +honey
	Joint pain	O	Heating	Topical	M	2	2
	Nerve relief	S	Decoction	Oral	M	1	1
	Rheumatism	O	Liniment Decoction	Dermal Oral	M	8	7 + honey
<i>Olea europaea</i> L., Oleaceae, Hat/Khat	Back pain during pregnancy	L	Brewed, decoction	Oral	M	3	3
	Body pain during pregnancy	L	Brewed, decoction	Oral	M	3	3
	Chest infection	L	Decoction	Oral	M	2	2
	Children's jaundice	L	Brewed, decoction	Oral	M	2	2
	Fat disease	L	Brewed, decoction	Oral	M	3	3
	Paint Hizak***	L	Decoction	Milk production	D	7	7
	Paint Mashk**	L	Decoction		D	7	7
Walking stick	ST	Raw		D	3	3	
<i>Onopordum carmanicum</i> (Bornm.) Bornm., Asteraceae, Khar maryam/Mazarkah, 054943	Body pain	FL	Vapor	Inhalation	M	1	1*
	Bones pain	FL	Vapor	Inhalation	M	1	1*
	Headache	FL	Vapor	Inhalation	M	1	1*
	Kidney pain	FL	Decoction, raw Deccoction	Oral	M	4	3
	kidney stone	L	Decoction	Oral	M	2	2
<i>Peganum harmala</i> L., Nitrariaceae, Espantan/Dodeni, 054898	Abdominal pain	S	Raw	Oral	M	5	5
	Abortion	AP	Cook	Edible	M	1	1
	Air disinfectant	S	Smoke		D	20	20
	Bloating	S	Raw	Oral	M	8	8
	Body pain	AP	Vapor	Chol****	M	3	3
	Bones pain	AP	Vapor	Chol****	M	5	5
	Children's shortness of breath	S	Ashes Brewed	Dermal Oral	M	4	4
	External skin tumor	AP,S	Poultice	Dermal	M	2	2*
	Female's infections	S	Decoction	Oral	M	1	1*
	Hand and leg pain	L,AP	Vapor	Chol****	M	6	6
	Handicrafts	F	Raw		H	13	13
	Joint pain	AP	Vapor	Chol****	M	3	3
	Kidney pain	S	Decoction	Oral	M	1	1*
	kidney stone	S	Deccoction	Oral	M	3	3 (2*)
	Protect against the Evil's eye	S	Smoke		R	13	13
	Severe cough	S	Raw	Oral	M	1	1
	Stomach ache	S	Powder, raw	Oral	M	5	5 (1*)
	Stomach function	S	Raw	Oral	M	1	1
	Stomach troubles	S	Raw	Oral	M	2	2

	Wound caused by crashes	S	Poultice	Dermal	M	1	1*	
	Wounds	S	Smoke Decoction	Dermal Oral	M	2	2	
<i>Perovskia atriplicifolia</i> Benth., Lamiaceae, Vek, 054940	Back pain	L AP	Decoction Vapor Cook	Soaking body Chol**** Edible	M	3	2 (1*) + (1+ flour+ garlic)	
	Body pain	L AP FL	Decoction Vapor Decoction	Soaking body Chol**** Oral	M	5	5 (1*)	
	Bones pain	L AP	Decoction Vapor	Soaking body Chol****	M	3	3 (1*)	
	Hand and leg pain	AP	Vapor	Chol****	M	3	3	
	Joint pain	AP	Vapor Cook	Chol**** Edible	M	3	2 (1*)	
	Knee pain	AP	Vapor Cook	Chol**** Edible	M	2	1+ flour+ garlic	
	Making honey	FL	Raw		O	5	5	
	Rheumatism	AP	Vapor Cook	Chol**** Edible	M	2	1+ flour+ garlic	
	Urticaria	L,FL	Soak	Body wash	M	2	2	
	<i>Petroselinum crispum</i> (Mill.) Fuss, Apiaceae, Japari, 067618	Anemia	S	Powder	Oral	M	3	3
		Anorexia	S	Powder	Oral	M	1	1
		kidney stone	S	Powder	Oral	M	1	1
	<i>Pistacia atlantica</i> Desf., Anacardiaceae, Govan/Govanjak, 054890	Abdominal pain	RE	Decoction	Oral	M	1	1
Accelerating the post-coma consciousness		RE	Poultice	Topical	M	2	2*	
		O	Liniment					
Aromatize Hizak***		ST	Ashes	Milk production	D	5	5	
Aromatize Mashk**		ST	Ashes		D	5	5	
Arthritis		O	Liniment	Dermal	M	1	1	
Asthma		O	Raw	Oral	M	1	1	
Back pain		RE	Squashing	Dermal	M	6	6*	
Bedsore		RE	Smoke	Dermal	M	1	1	
Bladder infection		RE	Decoction	Dermal	M	1	1	
Bloating		RE	Decoction	Oral	M	1	1	
Blood clots of head		RE	Poultice	Topical	M	2	2*	
		O	Liniment					
Blood clotting		RE	Poultice	Topical	M	1	1*	
Body pain		O	Liniment	Dermal	M	4	4	
		L	Decoction					
Bones pain by gunshot		RE	Poultice	Dermal	M	2	2*	
Brain lesions		RE	Poultice	Topical	M	2	2*	

Burn with boiled water	O	Liniment					
	RE	Liniment	Dermal	M	1	(1* + almond oil)	
Burns	RE	Decoction, liniment, poultice, smoke	Dermal	M	36	24 (4*)+(5 = animal oil)	
	O	Liniment					
Cataract	RE	Smoke	Topical	M	2	2	
Children's dysentery	R	Decoction	Oral	M	1	1*	
Children's infection	RE	Decoction	Oral	M	1	1*	
Diabetes	L,FL,RE	Decoction	Oral	M	4	4 1+ rock candy	
Diarrhea	RE	Powder	Suspension	M	2	2*	
		Decoction	Oral				
Early childbirth	RE	Decoction	Oral	M	1	1	
External skin tumor	RE	Decoction, liniment, poultice, smoke	Dermal	M	7	6 (4*)	
	O	Liniment					
Female's infections	RE	Decoction	Oral	M	1	1+ animal oil	
Fever by gunshot wound	F	Poultice	Dermal	M	2	2*	
Food	RE	Cook	Edible	N	18	18	
Foot numbness	O	Poultice	Topical	M	1	1*	
Hair growth	O	Raw	Topical	T	4	4	
Hair loss	RE	Raw	Topical	T	1	1	
Heart disease	RE	Decoction	Oral	M	2	2	
Infection by gunshot wound	RE	Poultice	Dermal	M	2	2*	
Infections	O	Liniment	Dermal	M	26	16 (2*)+(1+animal oil)	
	RE	Decoction, poultice, smoke	Dermal, oral				
Internal tumors	RE	Decoction	Oral	M	1	1*	
Intestinal problems	RE,F	Decoction	Oral	M	3	3	
Joint pain	O	Liniment	Dermal	M	4	4	
Kidney infections	RE	Decoction	Dermal, oral	M	2	2 (1*)	
Knife wounds	RE	Smoke	Dermal	M	1	1	
leg pain	O	Liniment	Dermal	M	2	2	
Lumbar disc	L	Squashing	Topical	M	1	1	
Migraine	RE	Smoke	Inhalation	M	1	1	
Nuts	F	Raw	Edible	N	16	16	
Prevent infection	RE	Smoke	Dermal	M	2	1	
	O	Liniment					
Prostatic problem	RE	Smoke	Inhalation	M	1	1*	
Pulmonary problem	RE	Decoction	Pill	M	1	1*	
Relieve muscle aches	O	Liniment	Dermal	M	2	2	
Removing remains of skin lesions	RE	Smoke	Dermal, topical	M	4	2	
	O	Liniment					
Rheumatism	O	Liniment	Dermal	M	1	1	
Severe cough	RE	Decoction	Pill	M	1	1*	
Severe headaches	RE	Smoke	Inhalation	M	1	1	
Stomach ache	RE	Decoction, squashing	Oral	M	8	8 (3*)	

			Powder					
	Stomach Infection	RE	Decoction	Oral	M	3	3 (1+ animal oil)	
	Stomach ulcers	RE	Decoction	Oral	M	1	1	
	Suture	RE	Decoction	Industry	O	1	1	
	Swelling	RE	Poultice	Dermal	M	1	1*	
	Toothache	RE	Smoke	Inhalation	M	10	10 (1*)	
			Powder, raw	Topical				
	Urinary tract infections	RE	Decoction	Oral	M	1	1*	
	Vomiting	RE	Powder	Suspension	M	2	2*	
			Decoction	Oral				
	Wound caused by crashes	RE	Liniment, poultice, powder	Dermal	M	5	5(1*)+(4+ <i>Pistacia atlantica</i> oil)	
	Wound disinfectant	RE	Smoke	Dermal	T	2	1	
		O	Liniment					
	Wounds	RE	Decoction, smoke	Dermal, oral	M	7	6	
		O	Liniment	Dermal				
	Wounds caused by gunshot	R	Poultice, smoke	Dermal	M	4	3 (2*)	
		O	Liniment					
<i>Pistacia khinjuk</i> Stocks, Anacardiaceae, Kasor	Nuts	F	Heating, raw	Edible	N	20	20	
<i>Plantago major</i> L., Asteraceae, Barhang	Chest infection	S	Decoction	Oral	M	3	3 (2 + milk)	
	Children's chest infection	S	Decoction	Oral	M	2	2 (1 + rock candy)	
	Children's food supplement	S	Powder	Oral	N	1	1	
	Children's intestinal problems	S	Decoction	Oral	M	1	1	
	Children's throat infection	S	Decoction	Oral	M	1	1	
	Cold	S	Decoction	Oral	M	3	3(1 + rock candy)	
	Cough	S	Decoction	Oral	M	5	5 (2+ milk)+(1+rock candy)	
	Diarrhea	S	Decoction	Oral	M	1	1	
	Inflammation of the intestine	S	Decoction	Oral	M	1	1	
	Throat pain	S	Decoction	Oral	M	1	1	
<i>Plantago ovata</i> Forssk. Plantaginaceae, Danichk	Bloating	S	Decoction	Oral	M	1	1*	
	Bones pain by gunshot	S	Poultice	Dermal	M	2	2*	
	Cooling characteristics	S	Soak	Oral	M	5	5	
	Dysentery	S	Decoction	Oral	M	1	1*	
	External skin tumor	S	Heating	Dermal	M	2	2 + flour	
	Fever by gunshot wound	S	Poultice	Dermal	M	2	2*	
	Infection by gunshot wound	S	Poultice	Dermal	M	2	2*	
	Infections	S	Soak	Oral	M	1	1	
	Intestinal problems	S	Decoction	Oral	M	1	1*	
	Reduce pain from burns	S	Poultice	Dermal	M	2	(2+milk+ <i>Pistachia</i> oil)	
	Softness of stomach	S	Soak	Oral	M	2	2	

	Stomach ache	S	Soak	Oral	M	5	5
	Stomach bleeding	S	Soak	Oral	M	2	2
	Stomach infection	S	Soak	Oral	M	1	1
	Stomach troubles	S	Soak	Oral	M	6	6 (3*)
	Wounds caused by gunshot	S	Poultice	Dermal	M	2	2*
<i>Populus alba</i> L., Salicaceae, Spidar/Katok	House building	ST	Raw	Construction	D	9	9
	Providing local shoes (Savas)	ST	Raw		H	4	4
<i>Pterocarpus santalinus</i> L.f., Fabaceae, Ravando chandan, 067635	Asthma	ST	Decoction	Oral	M	1	1*
	Bladder infection	ST	Decoction	Oral	M	1	1*
	Bones fracture	ST	Powder	Topical	M	4	4
	Cold	ST	Decoction	Oral	M	1	1*
	Cold – prevention	ST	Decoction	Oral	M	1	1*
	Ear pain	ST	Decoction	Topical	M	1	1* + salt
	External skin tumor	ST	Poultice	Dermal	M	1	1*
	Gastrointestinal infection	ST	Decoction	Oral	M	1	1*
	Intestinal infection	ST	Decoction	Oral	M	1	1*
	Kidney infections	ST	Decoction	Oral	M	1	1*
	Knee pain	ST	Decoction	Oral	M	1	1*
	Lung cleansing	ST	Decoction	Oral	M	1	1*
	Set Ladies monthly menstruation	ST	Decoction	Oral	M	1	1*
	Throat pain	ST	Decoction	Oral	M	2	2 (1*)
	Wound caused by crashes	ST	Poultice, powder	Dermal	M	3	3 (1*)
	Wounds	ST	Powder	Dermal	M	1	1
	Wounds caused by gunshot	ST	Powder	Dermal	M	3	3
<i>Pteropyrum aucheri</i> Jaub. & Spach, Polygonaceae, Patompt/Karvankosh, 067632	Heat Hizak***	R	Ashes	Milk production	D	6	6
<i>Pulicaria undulata</i> (L.) C.A.Mey., Asteraceae, Bomadaran, 054904	Abdominal pain	L	Decoction	Oral	M	6	6
	Blood pressure	L	Decoction	Oral	M	3	3
	Children's diarrhea	L	Decoction	Oral	M	2	2
	Children's nausea	L	Decoction, soak	Oral	M	6	6
	Children's severe diarrhea	L	Soak	Oral	M	1	1
	Children's vomiting	L	Decoction, soak	Oral	M	4	4
	Diabetes	L	Decoction	Oral	M	3	3
	Diarrhea	L	Decoction, soak	Oral	M	5	5
	Female's infections	L	Decoction	Oral	M	1	1
	Food poisoning	L	Decoction	Oral	M	5	5
	Heart disease	L	Brewed	Oral	M	1	1
	Nausea	L	Soak	Oral	M	1	1
	Nerve relief	L	Decoction	Oral	M	2	2
	Prostatic problem	L	Decoction	Oral	M	2	2

	Stomach troubles	L	Brewed	Oral	M	1	1
	Stomach ache	L	Decoction	Oral	M	3	3
	Stomach troubles	L	Brewed, decoction	Oral	M	2	2
	Vomiting	L	Decoction, soak	Oral	M	5	5
<i>Punica granatum</i> L., Lythraceae, Anar	Acne	F	Poultice	Dermal	T	2	2*
	Paint Hizak***	F.SH	Decoction	Milk production	D	4	4
	Paint Mashk**	F.SH	Decoction		D	1	1
	Stomach ache	F.SH	Powder	Oral	M	1	1*
	Stomach troubles	F.SH	Powder	Oral	M	1	1*
	Stomach ulcers	F.SH	Powder	Oral	M	2	2 (1*)
<i>Pycnocycla aucherana</i> Dence. ex Boiss. var. Aucherana, Apiaceae, Sagi dantan, 067621	Body pain	AP	Vapor	Chol****	M	3	2
		L	Decoction	Dermal			
	Bones pain	AP	Vapor	Chol****	M	2	1
		L	Decoction	Dermal			
	Hand and leg pain	AP	Vapor	Chol****	M	3	2
		L	Decoction	Dermal			
	Rheumatism	L	Decoction	Dermal	M	1	1
<i>Rhamnus persica</i> Bioss., Rhamnaceae, Kharek, 054948	Paint Hizak***	R	Decoction	Milk production	D	3	3
<i>Rhazya stricta</i> Decne., Apocynaceae, Harishark, 054929	Anti parasite	L	Decoction	Oral	M	3	3
	Bedsore	L	Powder	Dermal	M	2	2
	Body pain	AP	Vapor	Chol****	M	5	5
	Bones pain	AP	Vapor	Chol****	M	2	2
	Cooling characteristics	L	Decoction	Oral	M	2	2 (1+ gram flour)
	Diabetes	L	Decoction	Oral	M	1	1 + gram flour
	Eye disinfectant	L	Decoction	Topical	M	2	2
	Hand and leg pain	AP	Vapor	Chol****	M	5	5
	Increase brightness of the eyes	L	Decoction	Oral	M	1	1
	Joint pain	AP	Vapor	Chol****	M	1	1
	Mouth infection	L	Powder	Oral	M	1	1
	Mouth ulcers	L	Decoction	Oral	M	7	7 (2*)
			Powder	Mouth washing, oral			
	Tonsils infection	L	Powder	Topical	M	1	1
	Tooth cleaning	L	Raw		T	3	3
<i>Rheum ribes</i> L., Polygonaceae, Pil Goshk/Bandik, 054932	Anorexia	R	Decoction	Oral	M	2	2
	Baking bread	R	Cook	Edible	N	7	7
	Bloating	R	Decoction	Oral	M	2	2
	Diabetes	R	Powder	Oral	M	6	6
	Food	R	Powder	Edible	N	2	2 (1+ milk)

		F	Dry					
	Stomach ache	R	Decoction, powder	Oral	M	8	7 (2*)	
		FL	Decoction					
	Stomach disorder	R	Decoction, powder	Oral	M	5	5 (2*)	
	Stomach ulcers	R	Decoction, powder	Oral	M	6	5	
<i>Ribes orientale</i> Desf., Grossulariaceae, Azat	Comestible	F	Raw	Edible	N	9	9	
<i>Rosa beggeriana</i> Fisch & C.A. Mey, Rosaceae, Gole Mohamadi, 054897	Abdominal pain	FL	Extraction, powder	Oral	M	4	4 (2*)	
	Constipation	FL	Decoction	Oral	M	2	2	
	Cooling characteristics	FL	Soak	Oral	M	3	3 (1*)	
	Flavor of tea	FL	Raw		N	3	3	
	Fragrance	FL	Extraction		T	1	1	
	Nerve relief	FL	Decoction	Oral	M	3	3	
	Stomach function	FL	Soak	Oral	M	2	2	
	Stomach troubles	FL	Decoction	Oral	M	3	3	
	Vomiting	FL	Powder	Oral	M	1	1*	
<i>Ruta graveolens</i> L., Rutaceae, Sadap	Accelerating post-coma consciousness	L	Poultice	Topical	M	1	1*	
	Bloating	L	Decoction	Oral	M	5	5	
	Blood clots of head	L	Poultice	Topical	M	1	1*	
	Blood clotting	L	Poultice	Dermal	M	2	1 (2*)	
	Body weakness after childbirth	L	Powder	Suspension	N	2	2 (1*)	
			Decoction	Oral				
	Bone pain after childbirth	L	Powder	Suspension	N	1	1*	
	Brain lesions	L	Poultice	Topical	M	1	1*	
	Chest infection	L	Decoction	Oral	M	2	2	
	Childbirth thirst	L	Powder	Suspension	N	2	1 (2*)	
			Decoction	Oral	N			
	Children's pneumonia	L	Poultice	Dermal	M	1	1*	
	Cold	L	Decoction	Oral	M	7	7	
	Digestive system disorders	L	Decoction	Oral	M	1	1	
	Female infertility	L	Decoction	Suppository	M	1	1*	
	Flavor of tea	L	Decoction, raw		N	3	3	
	Infections	L	Decoction	Oral	M	3	3	
	Male infertility	L	Decoction	Suppository	M	1	1*	
	Severe cough	L	Poultice	Dermal	M	1	1*	
	Swelling	L	Poultice	Dermal	M	4	3 (2*)	
			Decoction	Oral				
	Throat infection	L	Decoction	Oral	M	2	2	
<i>Rydingia persica</i> (Burm.f.) Scheen & V.A.Albert, Lamiaceae, Golderr	Abdominal pain	L	Soak	Oral	M	2	2	
	After childbirth	L	Soak	Oral	N	1	1	
	Back pain	L	Soak	Oral	M	2	2 (1*)	

	Body pain	L	Decoction Soak	Soaking body Oral	M	3	3 (1*)
	Bones pain	L	Decoction Soak	Soaking body Oral	M	12	10 (1*)
	Bones pain of pregnant women	L	Decoction	Oral, soaking body			
	Cold	L	Decoction Soak	Body wash Oral	M	1	1
	Congo fever	L	Soak	Oral	M	2	2
	Diabetes	L	Soak	Oral	M	1	1
	Excretion of toxins from body	L	Soak	Oral	M	4	4
	Fever caused by pain in joints and muscles	L	Soak	Oral	M	1	1
	Hand and leg pain	L	Decoction, raw	Oral	M	9	7
	Infections	L	Soak	Oral	M	2	2
	Joint pain	L	Soak	Oral	M	1	1
	kidney stone	L	Soak	Oral	M	2	2
	Malaria fever	L	Soak	Oral	M	3	3
<i>Salvia macrosiphon</i> Boiss., Lamiaceae, Mohr danag, 054923	Abdominal pain	SE	Decoction	Oral	M	1	1
	Asthma	SE	Decoction	Oral	M	4	4
	Cataract	SE	Raw	Topical	M	5	5
	Chest infection	SE	Powder	Oral	M	1	1
	Chest pain	SE	Decoction	Oral	M	4	4
	Children's chest infection	SE	Heating, powder	Oral	M	2	2
	Children's chest pain	SE	Decoction	Oral	M	1	1
	Children's throat infection	SE	Heating, powder	Oral	M	2	2
	Children's throat pain	SE	Decoction	Oral	M	1	1
	Cough	SE	Decoction	Oral	M	1	1
	Eye infection	SE	Raw	Topical	M	3	2
	Eye infection/ an object	SE	Powder, raw	Oral, topical			
	Eye irritation	SE	Powder	Topical	M	7	7
	Eye pressure	SE	Powder	Oral, topical	M	2	1
	Inflammation of eye	SE	Powder	Oral, topical	M	2	1
	Lung diseases	SE	Raw	Topical	M	1	1
	Lung infection	SE	Decoction	Oral	M	3	3
	Nuts	SE	Decoction	Oral	M	1	1
	Softness of stomach	SE	Powder	Edible	N	2	2
	Throat pain	SE	Decoction	Oral	D	1	1
	Trachoma	SE	Decoction, powder	Oral	M	3	3
		SE	Powder	Dermal, oral	M	2	1
<i>Salvia mirzayanii</i> Rech.f. & Esfand., Lamiaceae, Mor, 067622	Abdominal pain	L	Decoction, raw	Oral	M	21	19 (3*)+(2+ sugar)
		FL	Powder	Oral, suspension			
	Accelerating post-coma consciousness	L	Decoction, powder	Oral			
		L	Poultice	Topical	M	1	1*

Blood clots of head	L	Poultice	Topical	M	1	1*
Blood clotting	L	Poultice	Dermal	M	1	1*
Body pain	L	Poultice	Rub whole body	M	1	1*
Bones pain	L	Poultice	Rub whole body	M	1	1*
Bones pain by gunshot	L	Poultice	Dermal	M	2	2*
Brain lesions	L	Poultice	Topical	M	1	1*
Burn with boiled water	L	Poultice	Dermal	M	1	1*
Burns	L	Ashes, poultice	Dermal	M	3	3*
Children's abdominal pain	L	Decoction	Oral	M	1	1
Children's dysentery	L	Decoction	Oral	M	1	1*
Children's infection	L	Decoction	Oral	M	1	1*
Constipation	L	Decoction	Oral	M	1	1*
Diabetes	L	Decoction	Oral	M	1	1
Diarrhea	FL	Decoction, powder	Oral	M	9	8 (2*)+(1+ boiled water)
	L	Powder	Oral, suspension			
		Raw	Oral			
Digestive system disorders	L	Powder, raw	Oral	M	2	2
External skin tumor	L	Poultice	Dermal	M	1	1*
Fat disease	L	Decoction	Oral	M	3	3
Fever	L	Decoction	Oral	M	1	1
Fever by gunshot wound	L	Poultice	Dermal	M	2	2
Fever caused by pain in joints and muscles	L	Poultice	Dermal	M	1	1*
Food poisoning	FL	Decoction	Oral	M	2	2 (1*)
Infection by gunshot wound	L	Poultice	Dermal	M	2	2*
Infections	AP,L	Decoction	Oral	M	7	7 (2*)
	L	Ashes	Dermal			
Kidney infections	FL	Decoction	Oral	M	1	1*
Lung infection	L	Decoction, powder	Oral	M	2	2
Nausea	L	Powder, raw	Oral	M	5	4
Prostatic problem	L	Decoction	Oral	M	1	1*
Stomach ache	FL	Powder	Oral	M	10	10 (4*)+(1+ rock candy)
	L	Powder	Oral, suspension			
		Decoction	Oral			
Stomach diseases	FL	Powder	Oral	M	1	1
Stomach Infection	L,AP	Decoction	Oral	M	3	3
Stomach ulcers	L	Decoction	Oral	M	1	1
Swelling	L	Poultice	Dermal	M	1	1*
Urinary tract infections	FL	Decoction	Oral	M	1	1*
Vomiting	FL	Decoction, powder	Oral	M	14	12 (3*)
	L	Powder, raw				
Wound caused by crashes	L	Poultice	Dermal	M	2	2 (1*)
		Decoction	Oral			
Wounds	L	Ashes	Dermal	M	2	2
		Decoction	Oral			

	Wounds caused by gunshot	L	Poultice Decoction	Dermal Oral	M	3	3 (2*)
<i>Salvia rhytidiae</i> Benth., Lamiaceae, Mor, 054924	Bloating	L	Decoction	Oral	M	4	4
	Chest infection	L	Decoction	Oral	M	4	4
	Cold	L	Decoction	Oral	M	11	11
	Throat infection	L	Decoction	Oral	M	2	2
	Throat pain	L	Decoction	Oral	M	2	2
<i>Scorzonera paradoxa</i> Fisch. & C.A.Mey. ex DC., Asteracea, Pontrok, 067624	Vegetable	AP	Cook, raw	Edible	N	38	33
<i>Semenovia suffruticosa</i> (Freyn & Bornm.) Manden., Apiaceae, Dibi	Livestock forage	AP	Dry	Fodder	F	8	8
<i>Stipa hohenackeriana</i> Trin. & Rupr., Poaceae, Shishar/ Vasht	Livestock forage	AP	Raw	Fodder	F	11	11
<i>Suaeda aegyptiaca</i> (Hasselq.) Zohary, Amaranthaceae, Sensor, 067630	Vegetable	L	Raw	Edible	N	32	28 (18+ yogurt)
<i>Tamarix mascatensis</i> Bunge, Tamaricaceae, Gaz, 054934	Accelerating post-coma consciousness	L	Poultice	Topical	M	1	1*
	Back pain	L	Vapor	Chol****	M	1	1
	Blood clots of head	L	Poultice	Topical	M	1	1*
	Blood clotting	ST	Poultice	Dermal	M	1	1*
	Body pain	L	Vapor	Chol****, inhalation	M	8	7 (1*)
	Bones pain	L	Vapor	Chol****, inhalation	M	9	7 (1*)
	Brain lesions	L	Poultice	Topical	M	1	1*
	External skin tumor	L	Poultice	Dermal	M	1	1*
	Hand and Leg pain	L	Vapor	Chol****	M	7	7
	Headache	L	Vapor	Inhalation	M	1	1*
	Heat Hizak***	ST	Ashes	Dry farming	D	1	1
	Heat Mashk**	ST	Ashes		D	1	1
	House building	ST	Raw	Construction	D	10	10
	Joint pain	L	Vapor	Chol****	M	4	4
	Paint Hizak***	R,ST	Decoction	Milk production	D	3	3
	Preparing a wooden handle for agricultural implements	ST	Raw	Agriculture	D	3	3
	Shrink the spleen	FL	Decoction	Oral	M	1	1
	Swelling	ST	Poultice	Dermal	M	1	1*
	Truncheon for teachers	ST	Raw		O	4	4
	Wood for cooking	ST	Raw	Firewood	D	12	12
Wound caused by crashes	L	Poultice	Dermal	M	1	1	

<i>Teucrium polium</i> L., Lamiaceae, Kalpourag	Abdominal pain	L	Decoction, soak	Oral	M	11	10 (2+ sugar)
	Bloating	L	Decoction, soak	Oral	M	3	2
	Bones pain	L	Soak	Oral	M	1	1
	Children's abdominal pain	L	Soak	Oral	M	3	3
	Children's diarrhea	L	Decoction	Body wash	M	1	1*
	Children's food poisoning	L	Decoction	Body wash	M	1	1*
	Children's vomiting	L	Decoction	Body wash	M	1	1*
	Cooling characteristics	L	Decoction	Oral	M	2	2 (1+ sugar)
	Diabetes	L	Decoction	Oral	M	1	1
	Diarrhea	L	Decoction	Oral	M	1	1
	Dysentery	L	Decoction	Oral	M	1	1
	External skin tumor	L	Poultice	Dermal	M	1	1*
	Fat disease	L	Decoction	Oral	M	2	2
	Fatty liver	L	Soak	Oral	M	2	2
	Food poisoning	L,FL	Decoction	Oral	M	3	2
	Hand and foot numbness	L	Poultice	Topical	M	1	1*
	Kidney pain	L,FL	Decoction	Oral	M	3	2
	Stomach ache	L	Decoction, powder, soak	Oral	M	11	11 (2*)
	Stomach Infection	L	Decoction	Oral	M	1	1
	Stomach troubles	L	Powder, soak	Oral	M	4	4 (1*)
Wound caused by crashes	L	Poultice	Dermal	M	1	1*	
<i>Thymus vulgaris</i> L., Lamiaceae, Ezgend/Avishan, 067633	Accelerating post-coma consciousness	L	Poultice	Topical	M	1	1*
	Asthma	L	Decoction	Oral	M	1	1*
	Bladder infection	L	Decoction	Oral	M	1	1*
	Blood clots of head	L	Poultice	Topical	M	1	1*
	Brain lesions	L	Poultice	Topical	M	1	1*
	Childbirth thirst	L	Decoction, powder	Oral, suspension	N	2	2*
	Children's pneumonia	L	Poultice	Rub whole body	M	1	1*
	Children's severe diarrhea	L	Decoction	Oral	M	1	1*
	Children's severe nausea	L	Decoction	Oral	M	1	1*
	Children's severe vomiting	L	Decoction	Oral	M	1	1*
	Children's shortness of breath	L	Decoction	Oral	M	1	1*
	Cold	L	Brewed, decoction	Oral	M	20	18 (3*) + (2+ rock candy)
	Cold – prevention	L	Decoction	Oral	M	3	3 (1*)
	Corona virus	L	Brewed, decoction	Oral	M	3	3
	Cough	L	Brewed	Oral	M	2	2
	Cough due to allergy, especially (pregnant women)	L	Decoction	Oral	M	1	1
	Diabetes	L	Powder	Oral	M	1	1*
	External skin tumor	L	Poultice	Dermal	M	1	1*
	Face masks	L	Decoction	Dermal	T	1	1
	Facial beauty in ladies/ Bokhor*****	L	Vapor	Dermal	T	1	1
Fat disease	L	Powder	Oral	M	1	1*	
Flavor of tea	L	Decoction		N	1	1	

Gastrointestinal infection	L	Decoction	Oral	M	1	1*
Increase immunity	L	Decoction	Oral	M	2	2
Infections	L	Decoction, poultice	Dermal, oral	M	17	14 (3*)+(2 + rock candy)
Internal tumors	L	Decoction	Oral	M	1	1*
Intestinal infection	L	Decoction	Oral	M	1	1*
Jaundice	L	Decoction	Oral	M	2	2
Kidney infections	L	Decoction	Oral	M	2	2*
kidney stone	L	Decoction, powder	Oral	M	2	2*
Knee pain	L	Decoction	Oral	M	1	1*
Liver disorder	L	Decoction	Oral	M	1	1
Lung cleansing	L	Decoction	Oral	M	2	2 (1*)
Lung infection	L	Decoction	Oral	M	2	2
Lung problems	L	Brewed	Oral	M	1	1
Lung troubles caused by cold	L	Decoction	Oral	M	2	2*
Menstrual cramps	L	Decoction	Oral	M	2	2
Nausea	L	Decoction	Oral	M	2	2 (1*)
Nerve relief	L	Decoction	Oral	M	2	2
Set Ladies monthly menstruation	L	Decoction	Oral	M	1	1*
Severe cough	L	Poultice	Rub whole body	M	5	4 (1*)
Stomach ache	L	Brewed, decoction	Oral			
		Powder	Suspension	M	3	3 (1*)
		Decoction	Oral			
Tea	L	Brewed, decoction		N	8	8 (2+rock candy)
Throat pain	L	Decoction	Oral	M	1	1*
Urinary tract infections	L	Decoction	Oral	M	1	1*
Vomiting	L	Decoction	Oral	M	1	1
Wound caused by crashes	L	Poultice	Dermal	M	1	1*
Wound disinfectant solution (as Betadine)	L	Decoction	Dermal	T	2	2

*Trigonella foenum-graecum* L.,  
Fabaceae, Ambag

Abdominal pain	SE	Powder	Oral	M	1	1
Anemia	SE	Powder	Oral	M	2	2
Children's diarrhea	SE	Poultice	Body wash	M	2	2 (1*)
		Raw	Oral			
Children's nausea	SE	Raw	Oral	M	1	1
Children's vomiting	SE	Raw	Oral	M	1	1
Diabetes	SE	Decoction, powder	Oral	M	4	4
Diarrhea	SE	Powder	Oral	M	3	3
Fat disease	SE	Decoction, raw	Oral	M	5	5
Female hormonal problems	SE	Decoction	Oral	M	2	2
Female infertility	SE	Decoction, powder	Oral	M	3	3

*Verbascum gabrielae* (Bornm.)  
Hub.-Mor., Scrophulariaceae, Mohr

Hand and leg pain	L	Squashing	Dermal	M	2	2
Menstrual cramps	L	Powder	Oral	M	1	1

pashm, 054901	Stomach ache	L	Squashing	Oral	M	1	1
	Swelling of feet	L	Squashing	Topical	M	2	2
<i>Withania coagulans</i> (Stocks) Dunal, Solanaceae, Panir bad, 054949	Abdominal pain	AP,L	Decoction	Oral	M	3	3
	Cold	AP,L	Decoction	Oral	M	9	9
	Flavor of tea	L	Raw		N	13	13
	Nerve relief	AP,L	Decoction	Oral	M	7	7
	Stomach ache	AP,L	Decoction	Oral	M	9	9
	Stomach diseases	AP,L	Decoction	Oral	M	2	2
<i>Ziziphora clinopodioides</i> Lam., Lamiaceae, Porchenko, 054925	Body pain	AP	Vapor	Chol****	M	2	2
	Bones fracture	L	Squashing	Topical	M	3	3
	Cloths washing	L	Raw		T	1	1
	Diarrhea	F	Decoction	Oral	M	4	4
	Digestive system disorders	F	Decoction	Oral	M	3	3
	Hand and leg pain	AP	Vapor	Chol****	M	2	2
	Kidney infections	F	Decoction	Oral	M	1	1
	Kidney pain	F	Decoction	Oral	M	1	1 + rock candy
	kidney stone	F	Decoction	Oral	M	2	2 (1 + rock candy)
	Prevent Hizak*** rot	F	Soak	Milk production	D	4	4 + salt
	Prevent Mashk** rot	F	Soak		D	4	4 + salt
	Prostatic problem	F	Decoction, raw	Oral	M	3	3
	Stomach ache	F	Decoction	Oral	M	1	1
<i>Ziziphora tenuior</i> L., Lamiaceae, Porchenk Kohi, 067634	Cold	AP	Brewed	Oral	M	8	8 (1+ whey)
	Flavor of tea	AP,L	Brewed		N	9	9
	Nerve relief	AP	Brewed	Oral	M	8	8
	Stomach ache	AP	Brewed	Oral	M	5	5
<i>Ziziphus jujuba</i> Mill., Rhamnaceae, Konar	Hair washing	L	Squashing	Topical	T	4	4
	Headache	L	Squashing	Oral, topical	M	3	3
	Nuts	F	Raw	Edible	N	8	8
	Paint Hizak***	R	Decoction	Milk production	D	4	4
	Paint Mashk**	R	Decoction		D	4	4
<i>Zygophyllum eurypterum</i> Boiss. & Buhse, Zygophyllaceae, Kerich, 067627	Children's antiparasite	L	Squashing	Suppository	M	3	3
	Heat Hizak***	ST	Ashes	Milk production	D	5	5
	Heat Mashk**	ST	Ashes		D	7	7

Note: Species listed alphabetically; additional information on usage, used Plant Part (PP), preparation and administration, Use Category (UC), number of citations and number of informants; Plant Parts: AP: Aerial Parts, F: Fruit, FL: Flower, L: Leaves, O: Oil, R: Root, RE: Resin, S: Seed, ST: Stem; Use Category: C: Drugs and cigarettes, D: Domestic and charcoal, F: Hunting and fishing, H: Handicrafts, M: Medicine, N: Nutrition, O: Other, R: Ritual, T: Dental care and cosmetics. \*: In a combination with other plants, \*\*: The bag is made from animal leather and used as a refrigerator for maintaining water, \*\*\*: The bag is made from animal leather and used for the production of milk and other dairy products, also as a refrigerator for maintaining milk, \*\*\*\*: Traditional method of Baluch tribes for the treatments of body, joint, and any musculoskeletal pains, \*\*\*\*\*: Use the plants with the boiled water as a facial steamer for face skin beauty in women

This study reported for the first time, a large-scale study about traditional uses of plant resources in Taftan Mountain, Sistan and Baluchestan, Iran. The study points out that the study area is rich in plant resources and their local uses. Information is concentrated on elders, herbalists, and women especially in rural areas. However, many people who belong to different areas still rely on the use of plants. The young people do not show any interest in knowing and using indigenous knowledge. Obviously, knowledgeable old people will not be present for very much longer; therefore, this traditional knowledge should be collected and protected for the new generations. So far, our findings serve as a good database for other studies on the secondary compounds of the plants, i.e., new research projects on the area should be designed for the conservation of all plants and pharmacological evaluation of medicinal plants. Because access to health care in the studied area is difficult, plants still play a vital role and a great variety of medicinal plants were used by local people for the treatment of a wide range of ailments. Since the local people often collect the whole plant in a non-sustainable way, plans for the conservation and cultivation of the local flora especially in the case of medicinal plants, are needed. Therefore, further studies should take a closer look at plants collection by local people.

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