Ethnobotany of the medicinal plants used by the ethnic communities of Kerman province, Southeast Iran

Seyed Hamzeh Hosseini1,*, Hossein Bibak1, Abdollah Ramzani Ghara1, Amirhossein Sahebkar2,3 and Abolfaz Shakeri4

Abstract

Background: Traditional medicine is a major component in the primary healthcare system in the southeast of Iran, which has a rich floral diversity. However, there is no comprehensive report on the use of medicinal herbs in this specific region. This traditional usage of medicinal plants by local communities could serve as a source for pharmacological and phytochemical studies. The main objective of this study was to identify ethnopharmacological knowledge on medicinal plant species and their local healing applications by the folk communities of Kerman province in the southeast of Iran.

Methods: In this cross-sectional study, data were collected from 217 herbal healers using semi-structured questionnaires, open interviews, and field surveys. Factors including use reports (UR) for each species, frequency of citation (FC), and informant consensus factor (ICF) were used to analyze the data. Plant species were identified by botanists through standard taxonomic methods.

Results: A total of 402 medicinal plants were used in healing practices by the local communities of Kerman province. These species belong to 273 genera of 73 families, among which 367 species are dicotyledons, 27 are monocotyledons, 7 species are cryptogam, and one species is gymnosperm. An important implication from the current study is the identification of the traditional medicinal use of 292 plant species in this region for the first time. Asteraceae, Apiaceae, Lamiaceae, and Fabaceae were the dominant medicinally utilized plant families, respectively. Leaf, flower, fruit, and seed were the most common plant parts used. Generally, crude drugs were used in the form of decoction, followed by poultice and infusion forms. Moreover, oral route is considered as the most common administration route followed by topical route. Endocrine (diabetes), dermatological, gastrointestinal, and respiratory problems were ranked as the most frequent ailment categories for which medicinal plants in this region were applied, respectively. Our findings suggested dominant use of Asteraceae and Apiaceae plants for the treatment of gastrointestinal disorders, Lamiaceae plants for respiratory and gastrointestinal ailments, and Apocynaceae plants for dermatological problems.

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Introduction

According to the reports, medicinal use of plants dates back to at least 60,000 years. During this time, traditional systems of medicines have employed medicinal plants and their derivatives as valuable sources of new biologically active compounds and have been clinically practiced all over the world [1]. Until now, approximately 80% of the world’s population still use traditional herbal medicines [2]. In fact, herbal medicines can serve as complementary or alternative therapies for different types of diseases because of their low cost, availability, and generally fewer side effects [3]. Several FDA-approved drugs including artemisinin (from Artemisia annua), quinine (from Cinchona officinalis), vinblastine, vincristine, vinorelbine (from Vinca rosea), and etoposide (from May-apple) primarily originate from traditional herbal medicines [4]. It has been estimated that nearly 400,000 flowering plant species exist on earth, among which only 6% have been evaluated for their biological properties, and still more than 90% remains unexplored [5]. Therefore, ethnobotanical study of medicinal plants provides valuable information for the synthesis of new drugs.

Around 8000 plant species have been listed in Iran, of which 2300 species have medicinal properties among which 75% (1728) are endemic species in Iran [6, 7]. Kerman province with 23 cities and 171,993 square kilometers area has covered about 11% of the land area of Iran [8], located in the southeast of this country, and bordered by 5 provinces of Yazd, South Khorasan, Hormozgan, Fars, and Sistan and Baluchestan. It has a unique biodiversity due to its diverse natural resources and climatic conditions including desert and semi-desert in the north, and dry, mountainous and Mediterranean in the south. Kerman province is a vast plain with the lowest altitude in Lut desert (300 m) and the highest altitude in the mountaintop of Hezar (4419 m) [8]. Based on the traditional pharmacopoeia and medicinal plant reports in some parts of this province, medicinal herbs mostly belong to the families of Labiatae, Rosaceae, Papilionaceae, Compositae, and Umbelliferae, and the genera of Salvia, Nepeta, Artemisia, Astragalus, Ferula, Plantago, Ephedra, and Amygdalus [9, 10].

From the cultural point of view, Kerman province has around 89 tribal communities (including Baluch, Turkish, and Fars), most of them still being partially dependent on the medicinal plants. Therefore, this province is home to different cultures and beliefs resulting in rich traditional knowledge and traditional medicine practices. For example, the old city of Jiroft in the southeastern Kerman province dates to about 5000 years ago, which, according to the reports, is the beginning of human civilization [11]. In this respect, traditional medicine has played a key role in Iranian culture and civilization [12]. Therefore, this rich traditional knowledge is useful not only in the ancient medical systems but also in the present healthcare systems [10], especially for primary health care needs [13]. In fact, the dependence of the folk communities in Kerman on the medicinal herbs is not only due to the low availability to the health care system, but it is also rooted in the Iranian-rich culture of traditional medicine [14, 15]. For example, in the face of epidemiological diseases (e.g., cholera and colds), scientists of the Iranian traditional medicine (ITM) such as Avicenna, Rhazes, and Aghili Alavi Shirazi have suggested prescription of various herbal remedies. At present, the locals of Kerman, based on their ancient knowledge, utilize herbal medicines such as Thymus fedtschenkoi, Zataria multiflora, Dracocephalum polychaetum, and Glycyrrhiza glabra in the treatment of epidemics. Generally, Kerman province with a diverse climate and biodiversity is home to various cultures (from the prehistoric times to the present) and the center of agriculture in Iran [10, 16]. Accordingly, in some areas of this region, certain non-registered herbaceous species are used that can be obtained by the local people. There are many villages and nomadic districts that are largely dependent on the ethnomedical knowledge for primary health care, with many specific
traditional herbal medicine practices in this region that
have not been recorded anywhere else. Hence, the
current study aimed to carefully investigate and record
the ethnobotanical knowledge of the whole districts and
cultures, particularly subcultures that had the maximum
dependence on the traditional health care system of the
Kerman province.

Materials and methods

Study area

The present study was carried out in Kerman province
in the southeast of Iran with 23 cities and 3,164,716 in-
habitants. Regarding population, the most populated city
is Kerman with the following other cities as progressively
less populated: Jiroft, Sirjan, Rafsanjan, Kahnuj, Rudbar,
Anbarabad, Qale Ganj, Manojan, Faryab, Zarand, Bam,
Fahraj, Narmashir, Rigan, ShahrBabak, Baft, Rabor,
Orzueeyeh, Bardsir, Ravar, Anar, and Kooohan. In the
current study, in each city, skilled herbalists, nomadic
districts, and key villages were selected for data sam-
ping. Kerman province is located between the 55 min
and 25° to 32° north latitude and 26 min and 53° to 29
min and 59° east of the Greenwich meridian, as the lar-
gest province in Iran with the total area of 183.285 km²,
and the elevation of 400 to 4501 m above the sea level.
About 6.3 million hectares of deserts of Iran (equivalent
to 20%) are located in Kerman province. The area of the
forests of Kerman province is 1.3 million hectares and
belongs to the two vegetation regions of Irano-Turanian
and Khaleej-Omani.

Species of the Irano-Turanian forest of Kerman are
comprised of *Pistacia atlantica*, *Pistacia khinjuk*, *Juniperus excels*, *Prunus scoparia*, *Crataegus azarolus*, *Celtis australis* in the mountainous area, and *Haloxylon* spp. and *Calligonum* spp. in the desert area. Also, the species of Khaleej-Omani include *Calotropis procera*, *Tamarix* spp., *Prosopis* spp., and *Ziziphus* spp. and the endemic rare species of *Tecomella undulate* with the local names Golpar and Anar sheytan (Fig. 1).

Plant identification

Based on the maps, access roads, natural features,
vegetation, and subcultures in the study area, each
city was classified into districts. Then, the number of
the informants was determined. The plant specimens
were collected during the field surveys from nomadic,
rural, and urban areas of Kerman province from 2017
to 2019. The herbarium specimens were prepared fol-
lowing standard methods [17–19] and identified with
the help of Herbarium of the University of Jiroft and
Kerman Agricultural and Natural Resources Research
and Education Center. Nomenclature was corrected
using an online database (the international plant
names index and the plant lists). The voucher herbar-
ium specimens were deposited in the herbarium of
the Department of Plant Biology, University of Jiroft,
Jiroft, Iran. The voucher specimens were identified by
one of the authors (H.B) and reaffirmed by taxonomic
experts from the Department of Plant Biology at the
herbarium of the University of Jiroft.
Ethnobotanical data collection

After classification of each city into districts, ethnobotanical surveys were carried out from October 2017 to the end of May 2019. The ethnobotanical data was collected using field surveys, open interviews, and semi-structured questionnaires. A total of 217 local informants (91 females and 126 males) aged between 30 and 79 years old were interviewed. Demographic properties including educational level, gender, age group, and occupation are recorded in Table 1. Also, geographical location and altitude (the lowest being 409 m in Manojan and the highest being 2800 m in Lalehzar) of each district are recorded in Table 2. Furthermore, information on local name, medicinal use, part(s) of the plant used, preparation, and administration methods is recorded (Table 3).

Ailment categories

All recorded ailments and medicinal plant uses were categorized based on the International Classification of Primary Care (ICPC-2) (http://www.who.int/classifications/icd/adaptations/icpc2/en/).

Some modifications were made for diseases such as low back pain, which were not matched with the broad classification of diseases. Therefore, low back pain, infections, and some nontherapeutic applications (pickle, flavoring of food, appetizing, vegetable, thirst, pest control, food coloring, herbal adhesive, and washing powder) were placed in the General and Unspecified category.

According to the results, 16 disease categories were set, namely: (1) General and Unspecified; (2) Gastrointestinal; (3) Ophthalmological; (4) Ear, Nose and Throat; (5) Cardiovascular; (6) Hematological and immune mechanism; (7) Musculoskeletal; (8) Neurological; (9) Psychological; (10) Respiratory; (11) Dermatological; (12) Endocrine/Metabolic and Nutritional; (13) Urological; (14) Pregnancy, Childbearing, Family Planning; (15) Female Genitals; and (16) Cancer.

Table 1 Demographic profile of the local healers (n=217)

| Characteristics | Abundance | Relative abundance |
|-----------------|-----------|--------------------|
| Gender          |           |                    |
| Male            | 126       | 57.60              |
| Female          | 91        | 42.60              |
| Education       |           |                    |
| Primary level   | 103       | 47.47              |
| Secondary level | 86        | 39.63              |
| Graduate        | 28        | 12.90              |
| Age group       |           |                    |
| 30-45           | 51        | 23.50              |
| 46-60           | 132       | 60.83              |
| 61-79           | 34        | 15.67              |
| Occupation      |           |                    |
| Nomadic tribe   | 94        | 43.31              |
| Farmer          | 78        | 35.94              |
| Herbal healer   | 45        | 20.74              |

Data analysis

Data was analyzed using descriptive and quantitative statistical methods. In this regard, the ethnomedicinal data was analyzed using frequency, citation, and use reports. Use report was recorded whenever an informant cited a plant species or part(s) used for a particular ailment. Use reports were also quantified to define the highly used plant species for a particular ailment. Additionally, ICF was employed to determine the homogeneity of the information as follows:

\[
ICF = \frac{\text{Nur} - \text{Nt}}{\text{Nur} - \text{1}}
\]

Nur is the number of use citations for each ailment category and Nt is the number of plant species used for the same ailment category by all the healers [20]. ICF ranged between 0 and 1. ICF value is higher (near to 1) when a few plant species are cited by a higher proportion of healers, indicating homogeneity of information about the usage of specific plants. A low value (close to 0) demonstrates the healers’ disagreement about the usage of the plant for a particular ailment category [21].

Moreover, in order to determine cultural significance of each plant species, cultural importance index (CI) [22] was calculated as follows:

\[
CI = \frac{\sum_{d=1}^{n_d} \sum_{i=1}^{i_d} \text{UR}_d^i}{\sum_{d=1}^{n_d} \sum_{i=1}^{i_d} \text{UR}_d^i}
\]

Independent samples t-test was run to compare medicinal uses between men and women. One-way ANOVA and post hoc was used to compare medicinal uses among age groups, educational levels, and occupations.

Results and discussion

Botanical diversity

In this ethnobotanical survey which covered the whole Kerman province (23 cities and 3,164,716 population), a total of 217 local informant interviews revealed the application of 402 medicinal plants for the treatment of 95 diseases across 16 ICPC ailments categories. These results showed that herbal medicines are mainly used to treat ailments among the local communities and indicated the rich floral diversity of this region.

These species belong to 273 genera of 73 families where 367 species are Dicotyledons, 27 species Monocotyledons, 7 species Cryptogam, and one species Gymnosperm. An important implication of the current study is the identification of the traditional medicinal
| Area              | Village - nomadic district | Altitude | Location | Number of informants | Gender |
|-------------------|---------------------------|----------|----------|----------------------|--------|
|                   |                           |          | Latitude  | Longitude            |        |
|                   |                           |          |          |                      | Male   |
|                   |                           |          |          |                      | Female |
| Jiroft            | Esfandaghe                | 1724     | 515518   | 3173088              | 6      |
|                   | Boluk                     | 653      | 550080   | 3123049              | 4      |
|                   | Northen Jebal barez       | 1973     | 586377   | 3198024              | 5      |
|                   | Sardooiyeh                | 2622     | 532724   | 3234040              | 13     |
|                   | Central part              | 682      | 573397   | 3172706              | 8      |
|                   | Anbarabad                 | Southern Jebal barez | 890 | 613586 | 3136457 | 9 | 7 | 2 |
|                   | Central part              | 597      | 581969   | 3150210              | 5      |
|                   | Kahnuj                    | Dehkehan  | 810      | 556930   | 3006254 | 4 | 2 | 2 |
|                   | Dehzard                   | 518      | 548076   | 3086568              | 2      |
|                   | Central part              | 513      | 568775   | 3090872              | 5      |
|                   | Faryab                    | Sargorij  | 692      | 555482   | 3111865 | 4 | 2 | 2 |
|                   | Mehuiyeh                  | 649      | 539817   | 3107390              | 3      |
|                   | Moordan                   | 1118     | 508786   | 3125367              | 1      |
|                   | Central part              | 659      | 522398   | 3107510              | 1      |
|                   | Rudbar-e Jonub            | Zehkalut  | 385      | 656761   | 3075068 | 2 | - | 2 |
|                   |                           | Mil-e Farhad | 816 | 674888 | 3113175 | 1 | 1 | - |
|                   | Central part              | 488      | 597867   | 3100902              | 2      |
|                   | Qaleh Ganj                | Sorkhgleh | 439      | 595145   | 3071601 | 1 | 1 | - |
|                   |                           | Maarz     | 937      | 591255   | 2998867 | 3 | 2 | 1 |
|                   | Central part              | 407      | 586721   | 3045020              | 4      |
|                   | Manujan                   | Nodej     | 464      | 544955   | 3044682 | 2 | 1 | 1 |
|                   | Central part              | 358      | 549652   | 3035783              | 2      |
|                   | Baft                      | Bazenjan  | 2346     | 470709   | 3235218 | 2 | - | 2 |
|                   |                           | Khabr     | 2039     | 434312   | 3188268 | 2 | 1 | 1 |
|                   | Central part              | 2262     | 461018   | 3233719              | 5      |
|                   | Rabor                     | Sardmeshk | 2495     | 509371   | 3247951 | 3 | 1 | 2 |
|                   |                           | Qarat Malek | 2300 | 503669 | 3238948 | 3 | 1 | 2 |
|                   | Central part              | 2332     | 491445   | 3240172              | 4      |
|                   | Sirjan                    | Balvard   | 2035     | 407806   | 3254993 | 6 | 4 | 2 |
|                   |                           | Pariz     | 2313     | 379188   | 3305355 | 4 | 2 | 2 |
|                   | Central part              | 1744     | 372254   | 3258624              | 5      |
|                   | Rafsanjan                 | Bahreman  | 1330     | 377582   | 3419214 | 3 | 1 | 2 |
|                   |                           | Kabutatkhian | 1662 | 438574 | 3352462 | 3 | 3 | - |
|                   | Central part              | 1515     | 403788   | 3364209              | 2      |
|                   | Anar                      | Central part | 1414 | 334675 | 3416022 | 4 | 3 | 1 |
|                   | Central part              | 1181     | 481234   | 3459578              | 4      |
|                   | Ravar                     | Central part | 1181 | 481234 | 3459578 | 4 | 2 | 2 |
|                   | Zarand                    | Hotkan    | 2325     | 479943   | 3412892 | 3 | 2 | 1 |
|                   |                           | Mahmud abad | 1651 | 454636 | 3406622 | 3 | 1 | 2 |
|                   | Shahr Babak               | Estabraq  | 1794     | 316665   | 3326121 | 2 | 2 | - |
|                   |                           | Mehrabad  | 1817     | 319991   | 3327739 | 2 | 1 | 1 |
|                   |                           | Meymand   | 2218     | 343549   | 3345546 | 5 | 2 | 3 |
|                   | Central part              | 1840     | 318777   | 3332404              | 3      |

Table 2 Studied districts in the Kerman province with in-detail demographic characteristics of the local informants
uses of 292 plant species in this region for the first time. Information about these recorded medicinal plants is summarized in Table 3 in terms of local names, voucher specimens, part(s) used, healing practices, drug preparation, ICPC classification, and use report (%).

Asteraceae, Apiaceae, and Lamiaceae with 43, 38, and 37 species were the dominant medicinally utilized plant families, respectively (Fig. 2). In the south of this province, Sadat-Hosseini et al. reported that Apiaceae, Asteraceae, and Lamiaceae are the dominant medicinal plant families [10]. Moreover, in several ethnobotanical studies in the neighboring provinces (in Sistan and Baluchesta [23], and in Isfahan [24]) and countries (like Turkey [25, 26], and Georgia [27]), similar results were reported on the dominance of two or three of these plant families. From the phytochemical point of view, the dominance of Asteraceae, Apiaceae, and Lamiaceae families might be due to phytochemical composition, which are clues to high content of essential oils and phenolic constituents responsible for antimicrobial and antioxidant properties [28, 29].

Nepeta, Prunus, Ferula, Plantago, Ephedra, Euphorbia, Artemisia, Salvia, Artemisia, and Astragalus were the dominant medicinally used plant genera. Moreover, the findings of Saber et al. revealed that Salvia, Nepeta, Artemisia, Astragalus, Ferula, Plantago, Ephedra, Amygdalus, and Crataegus are the most frequently and popularly used medicinal plant genera in this district [8]. In general, the therapeutic significance of some plant families in a specific district may be related to the common distribution of their species [30].

There were some species like Tecomella undulata that were classified under vulnerable and endangered category of the IUCN list due to low reproduction and overexploitation [31, 32] while Pergularia tomentosa is a rare and endangered plant species which grows in the south of Kerman. Our previous research revealed that a low percentage of Kerman rangelands is vegetated with this plant and inhabitants uprooted it to meet their pharmacological needs [33].

The finding showed that the majority of the medicinal plant species (95%) belong to the wild habitat and the rest to cultivated areas. Other reports in this district [16, 27] confirm our results. In this case, informants of this region believed that wild plants are more medicinally effective than cultivated ones. Moreover, similar results were reported by Hu et al. in China [2].

With respect to healthcare policies, despite the relative adequate health services in this study area, local people and herbalists preferred herbal medicine due to the synthetic drugs side effects compared to herbal medicine. Furthermore, the general health policies that have been approved by the fifth development plan, as well as the national document on medicinal plants and traditional medicine, which emphasizes the organization and

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Table 2: Studied districts in the Kerman province with in-detail demographic characteristics of the local informants (Continued)

| Area         | Village- nomadic district | Altitude | Location | Number of informants | Gender |
|--------------|---------------------------|----------|----------|----------------------|--------|
|              |                           |          | Latitude Longitude |                      | Male  |
| Koohbanan    | Joz                       | 1989     | 431829   3470143 | 2                    | 2      |
|              | Central part              | 1991     | 431755   3475352 | 2                    | 1      |
| Bam          | Dehbakri                  | 2039     | 589237   3215060 | 5                    | 4      |
|              | Central part              | 1068     | 651396   3220002 | 2                    | 1      |
| Fahraj       | Central part              | 678      | 683329   3204470 | 3                    | 1      |
| Narmashir    | Central part              | 753      | 665948   3204479 | 2                    | 2      |
| Rigan        | Koosha                    | 1586     | 6558487  3137050 | 2                    | -      |
|              | Central part              | 756      | 666076   3203853 | 2                    | -      |
| Orzueeyeh    | Central part              | 1044     | 436602   3148052 | 3                    | 2      |
| Bardsir      | Lalehzar                  | 2800     | 481843   3266686 | 4                    | 3      |
|              | Negar                     | 2090     | 480752   3302559 | 3                    | 3      |
|              | Central part              | 2042     | 459122   3315109 | 2                    | 1      |
| Kerman       | Mahan                     | 1854     | 524742   3327108 | 3                    | 1      |
|              | Shahdad                   | 429      | 568791   3365494 | 3                    | 1      |
|              | Rayen                     | 2161     | 542947   3274724 | 4                    | 2      |
|              | Jopar                     | 1887     | 510333   3324762 | 5                    | 4      |
|              | Central part              | 1757     | 508230   3351251 | 11                   | 7      |
| Total        |                           |          |          | 217                  | 126 91 |
| Family          | Scientific name                        | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                                      | ICPC category | Preparation | Mode of application (UR) | A, B, C  |
|----------------|----------------------------------------|-----------------------------------|----------------|--------------------------------------------------------|---------------|-------------|--------------------------|---------|
| Acanthaceae    | Blepharis edulis (Forssk.) Pers.       | Anjereh 503                       | Leaf, Seed     | Wound healing (3), Ear ache (2), Eye ache (2), Sore throat (3) | DER-S         | Poultice, Decoction   | Topical                  | 10 A    |
| Acanthaceae    | Amaranthus retrorflexus L.             | Sorkhmaghz 598                    | Leaf           | Jaundice (18)                                           | GAS-D         | Decoction               | Oral                     | 18 B, C |
| Acanthaceae    | Anabasis aphylla L.                    | Aldorak 596                       | Aerial parts   | Weight loss (3), Constipation (1)                       | OTH-A, GAS-D  | Aromatic water         | Oral                     | 4 B, C  |
| Acanthaceae    | Salsola rosmarinus Bunge ex Boiss.     | Shooh 594                         | Aerial parts   | Washing powder (5)                                      |               | Powder                 | -                         | 5 B, C  |
| Acanthaceae    | Salsola inaeascens C.A. Mey.           | Jar 593                           | Aerial parts   | Washing powder (2)                                      |               | Powder                 | -                         | 2 B, C  |
| Acanthaceae    | Dryanta botrys (L.) Mosyakin & Clemants| Demeneh 595                       | Young flowering branches | Beauty of skin and hair (4) | DER-S         | Oil                     | Topical                  | 4 B, C  |
| Acanthaceae    | Sueda aegyptica (Hassleq.) Zohary      | Somsil 597                        | Aerial parts   | Blood purifier (4), Anemia (29), Vegetable (48)        | OTH-A, Blood-B | Vegetable              | Oral                     | 81 B, C |
| Amaryllidaceae | Allium atrovillosum Boiss.             | Piaze vahshi 268                  | Bulb           | Reduce blood sugar (2)                                  | MET-T         | Vegetable              | Oral                     | 2 B, C  |
| Amaryllidaceae | Allium iranicum (Wendelbo) Wendelbo.  | Seriit 245                        | Leaf           | Aromatic (4), Flavoring of food (33), Digestive (6)     | NER-N, GAS-D  | Spice                   | Oral                     | 43 B, C |
| Amaryllidaceae | Ixiochon staiticum (Pall.) Schultz. & | Kheyarou 269                      | Leaf and flower | Pickle (6)                                             | OTH-A         | Vegetable              | Oral                     | 6 B, C  |
| Amaryllidaceae | Narosus saxetta L.                    | Narges 267                        | Bulb, Leaf     | Face rash treatment (3), Sterility treatment (2), Gastric discomfort (2), Blood coagulation (4), Anti-depressants (5) | DER-S, DER-S, GAS-D, Blood-B, NER-N | Mask, Decoction, infusion | Topical, Oral             | 16 A, C |
| Anacardiaceae  | Pistaia atlantica Desf.               | Baneh 623                         | Seed           | Bone and joint pains (3), Burn healing (68), Wound healing (28), Ecema (34) | SKE-L, DER-S, DER-S, DER-S | Oil                     | Topical                  | 208 A |
| Anacardiaceae  | Pistaia khinjuk Stocks                | Kasour 621                        | Seed, Leaf     | Hermonhidial (1), Stomachache (9), Toothache (2), Memory Improvement (2), Jaundice (1) | CAR-K, GAS-D, GAS-D, NER-N, GAS-D | Nuts, Mixed with date, Gum | Oral                     | 15 A    |
| Anacardiaceae  | Pistaia vera L.                       | Pesteh 620                        | Fruit          | Reinforcing sexual desire (2), Anti-naussea (1), Anti-diarrhea (1), Constipation (3) | OTH-A, GAS-D, GAS-D, GAS-D | Nuts                     | Oral                     | 7 A     |
| Apiaceae       | Ammi majus L.                         | Golferfd 220                     | Fruit          | Anti-naussea (5), diuretic (4)                          | GAS-D, GAS-D, | Decoction               | Oral                     | 9 A     |
| Apiaceae       | Anethum graveolens L.                 | Matibkhm 234                      | Seed           | Blood fat (3), Gastric discomfort (32), Energetic (2), Reduce blood sugar (2), Joint pain (5) | OTH-A, MET-T, SKE-L | Decoction               | Oral                     | 44 A    |
| Apiaceae       | Apium graveolens L.                   | Karafs 221                        | Aerial parts   | Relaxing (1), Disinfectant (2), Flavoring of food (40) | NER-N, OTH-A, - | Mixed with              | Oral                     | 43 B, C |

Table 3 Medicinal plants used by ethnic communities in the Kerman province
## Table 3: Medicinal plants used by ethnic communities in the Kerman province (Continued)

| Family | Scientific name | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR) | ICPC category | Preparation | Mode of application (UR) | A, B, C |
|--------|-----------------|-----------------------------------|-----------------|--------------------|---------------|-------------|--------------------------|--------|
| Apiaceae | Bunium persicum (Boiss.) B.Fedtsch. | Ziresiah 227 | Seed | Menstrual disorders (30), Flavoring of food (115), Digestive (2), Parasite repellent (3), Carminative (4), Antispasmodic (31), | GYN-X, OTH-A, GAS-D, GAS-D, GAS-D, NER-N | Decoction, Infusion, Mixed with food | Oral | 185 A |
| Apiaceae | Carum carvi L. | Ziresiah 230 | Fruit | Carminative (6), Relaxing (1) | GAS-D, NER-N | Infusion | Oral | 7 A, C |
| Apiaceae | Conium maculatum L. | Showkasan 233 | Whole plant | Cough (4), Respiratory ailments (6) | RES-R, RES-R | Decoction | Oral | 10 A |
| Apiaceae | Coriandrum sativum L. | Geshniz 238 | Leaf, Seed, Aerial parts | Reduce blood sugar (3), Intestinal infections (2), Blood fat (4), lactiferous (5), Flavoring of food (18) Carminative (3) | MET-T, GAS-D, Blood-B, PRE-W, OTH-A, GAS-D | Decoction, Dried vegetable | Oral | 35 A |
| Apiaceae | Cuminum cyminum L. | Ziresabz 225 | Seed | Menstrual disorders (10), Flavoring of food (14), Body tonic (5) | GYN-X, -, OTH-A | Decoction, Infusion, Mixed with food | Oral | 29 A |
| Apiaceae | Daucus carota L. | Havij 235 | Bulb | Anemia (8), Sight enhancement (7), Appetizing (3) | Blood-B, EYE-F, OTH-A | Salad | Oral | 18 A, C |
| Apiaceae | Dorema ammoniacum D. Don | Oshtork 258 | Gum | Disinfectant (4), Edible (7), Infectious wound healing (11) | OTH-A, OTH-A, DER-S | Powder, Mask, Poultice, Vegetable | Oral | 22 A |
| Apiaceae | Dorema aucheri Boiss. | Oshtork 249 | Gum | Disinfectant (4), Edible (7), Infectious wound (11) | OTH-A, OTH-A, DER-S | Powder, Mask, Poultice, Vegetable | Oral | 22 A |
| Apiaceae | Ducrosia anethifolia (DC.) Boiss. | Reshikab 291 | Leaf, Seed | Abdominal pains (6), Body tonic (7), Child Carminative (9) | GAS-D, OTH-A, GAS-D | Infusion | Oral | 22 A |
| Apiaceae | Ducrosia assadii Alava. | Reshikab 237 | Leaf and fruit | Wound and burns healing (8) | DER-S | Oil | Topical | 8 A |
| Apiaceae | Eryngium billardieri Delile | Chichagh 240 | Aerial parts | Expectorant (4), Bronchitis (4), Antispasmodic (1), Carminative (2), Cough (4), Pain relief (3), Reduce rheumatic pain (1) | RES-R, RES-R, NER-N, GAS-D, RES-R, SKE-L | Decoction | Oral | 19 B, C |
| Apiaceae | Eryngium bungei Boiss. | Shoochagh 242 | Aerial parts | Pain relief (4) | NER-N | Decoction | Oral | 4 B |
| Apiaceae | Ferula assa-foetida L. | Anghouze 245 | Gum | Parasite intestine (16), Expectorant (2), Menstrual disorders (2), Gastritis (5) | GAS-D, RES-R, GYN-X, GAS-D | Fume, Infusion | Oral | 25 A |
| Apiaceae | Ferula gummosa Boiss. | Anghouzeh 236 | Gum | Cough (6), Laxative (3) | RES-R, GAS-D | Infusion | Oral | 9 A |
| Apiaceae | Ferula oopoda (Boiss. & Buhse) Boiss | Anghouzeh 252 | Latex, Fruit | Toothache (35), Carminative (18), Intestinal parasite (30), Tooth infection (10), Expectorant (4) | GAS-D, GAS-D, GAS-D, GAS-D, RES-R | Poultice, Decoction | Oral | 97 A |
| Apiaceae | Ferula ovina (Boiss.) Boiss. | Anghouze shirin 247 | Aerial parts | Carminative (15) | GAS-D | Decoction | Oral | 15 A |
### Table 3: Medicinal plants used by ethnic communities in the Kerman province (Continued)

| Family     | Scientific name             | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                                                                 | ICPC category | Preparation                  | Mode of application (UR) | A, B, C |
|------------|-----------------------------|-----------------------------------|----------------|--------------------------------------------------------------------------------|----------------|-----------------------------|--------------------------|---------|
| Apiaceae   | Ferula persica Willd.       | Anghouzeh 250                     | Latex, Fruit   | Cough (6), Laxative (3)                                                          | RES-R, GAS-D  | Decoction                  | Oral 9                    | A, B, C |
| Apiaceae   | Ferula sawitziana DC.       | Anghouze 254                      | Latex          | Stomachache (6)                                                                 | GAS-D         | Cooked with meat and vegetables | Oral 6                    | A, B, C |
| Apiaceae   | Ferulago angulata (Schult.) | Garchi 257                        | Aerial parts   | Carminative (6), Flavoring of butter (1), Aromatherapy (1)                      | GAS-D, OTH-A  | Decoction, Powder, Dressing | Oral 8                    | A, B, C |
| Apiaceae   | Foeniculum vulgare Mill.    | Bahluon 244                       | Seed           | Carminative (41), Gastric discomfort (27), Bone and joint pain (12), Asthma (1), Digestive (11) | GAS-D, GAS-D, SKE-L, RES-R, GAS-D | Decoction                  | Oral 92                   | A, B, C |
| Apiaceae   | Pulicaria undulata (L.) C.A.Mey. | Sooteh 259                    | Leaf           | Dysentery (10), Wound healing (3)                                              | GAS-D, DER-S  | Decoction, Poultice         | Oral 14                   | A, C   |
| Apiaceae   | Hypericum perforatum         | Golpar 258                       | Fruit, Flower  | Relaxing (8)                                                                     | NER-N         | Aromatic water              | Oral 8                    | B, C   |
| Apiaceae   | Levisticum officinale W.D.J.Koch | Karam 256                          | Aerial part    | Carminative (5), Gastric discomfort (10), Blood pressure (19)                  | GAS-D, GAS-D, CAR-K | Aromatic water              | Oral 34                   | B, C   |
| Apiaceae   | Levisticum persicum Freyn & Bommin. | Karam 260                     | Aerial parts, Stem | Pickle (3), Aromatherapy (1), Flavoring of food (2)                           | OTH-A, OTH-A  | Decoction, Dressing, Powder | Oral 5                    | A, B, C |
| Apiaceae   | Petroselinum crispum (Mill.) | Jafari 229                       | Young branches | Urinary stone (3), Digestive (12), Anemia (5)                                  | URO-U, GAS-D, Blood-B | Decoction                  | Oral 20                   | A, B, C |
| Apiaceae   | Pimpinella saxifraga L.      | Jafari Kouhi 263                 | Leaf           | Stomachache (21)                                                                | GAS-D         | Decoction                  | Oral 21                   | A, B, C |
| Apiaceae   | Pluchea austroaustriaca (Boiss.) | Zarbark 255                   | Leaf           | Asthma (7)                                                                      | RES-R         | Decoction                  | Oral 7                    | A, B, C |
| Apiaceae   | Prangos kotschyi-kotschyi    | Sekbinch 280                    | Young branches, Gum | Carminative (5)                                                                  | GAS-D         | Mixed with food             | Oral 5                    | B, C   |
| Apiaceae   | Prangos kotschyi-kotschyi    | Garchi 253                      | Foliage        | Flavoring of dairy (8), Parasite repellent (6), Toothache (7), Carminative (3), Acne (2), Infectious wound (5) | GAS-D, GAS-D, GAS-D, DER-S, DER-S | Edible, Decoction, Poultice | Oral, Topical 41 | B, C   |
| Apiaceae   | Pycnocycla spinosa Decne.    | Jashir 270                      | Young branches | Carminative (15), Body tonic (17)                                               | GAS-D, OTH-A  | Mixed with food             | Oral 32                   | A, B, C |
| Apiaceae   | Pycnocycla spinosa Decne.    | Izbok 273                       | Aerial parts   | Febrefuge (4)                                                                   | GAS-D         | Decoction                  | Oral 4                    | B, C   |
| Apiaceae   | Pycnocycla spinosa Decne.    | Radlyan kouchi 275              | Whole plant    | Body tonic (25), Stomachache tonic (13)                                         | OTH-A, GAS-D  | Decoction                  | Oral 38                   | B, C   |
| Apiaceae   | Tiarospermum ammi (L.) Sprague | Kasek 277                       | Fruit          | Stomachache (19), Carminative (7)                                              | GAS-D, GAS-D  | Decoction                  | Oral 26                   | A, B, C |
| Apiaceae   | Pycnocycla spinosa Decne.    | Saghandan 279                   | Root           | Scorpio bite (1)                                                                | OTH-A         | Decoction                  | Oral 2                    | B, C   |
| Apiaceae   | Pycnocycla spinosa Decne.    | Pvaner 288                      | Flower         | Stomachache (2)                                                                 | GAS-D         | Decoction                  | Oral 3                    | B, C   |
| Apocynaceae | Calotropis procera (Aiton) Dryand. | Kark 849                    | Latex          | Eczema (98), Scorpion bite (9), Earache (4), Toothache (6), Cancer (1)          | DER-S, DER-S, Ear-H, GAS-D, CAN-C | Latex, Topical, Oral       | Oral 151                  | B, C   |
| Family | Scientific name | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR) | ICPC category | Preparation | Mode of application (UR) | A, B, C |
|--------|-----------------|----------------------------------|-----------------|-------------------|---------------|-------------|-------------------------|---------|
| Apocynaceae | Cionura erecta (L.) Griseb. | Jaze sabz 852 | Leaf | Reduce blood sugar (1), Bruise (10) | MET-T, SKE-L | Poultice | Topical | 167 |
| Apocynaceae | Nerium oleander L. | Gish 861 | Leaf | Sore throat (3), Expectorant (77), Cough (87) | OTH-A, RES-R, RES-R | Decoction | Oral | 4 |
| Apocynaceae | Pegularia tomentosa L. | Keshtook 855 | Latex | Ecema (2), Constipation (1), Parasite repellent (2), Cancer (1) | DER-S, GAS-D, CAN-C | Poultice, Decoction | Oral | 15 |
| Apocynaceae | Petiploca aphylla Decne. | Shirbadam 853 | Whole parts | Hair removal of animal skin (9) | OTH-A | Decoction | Oral | 8 |
| Apocynaceae | Rhazya stricta Decne. | Esharg 859 | Leaf | Wound healing (63), Joint pains (57), Reduce blood sugar (3) | DER-S, SKE-L, MET-T | Poultice | Topical | 173 |
| Areceae | Phoenix dactylifera L. | Mogh 1123 | Pollen | Improvement of male fertility (11) | PRE-W | Mixed with honey | Oral | 17 |
| Areceae | Nannorrhops Ritchiana (Griff.) Aitch. | Daz1 125 | Fruit, parenchyma | Memory improvement (5) | NER-N | Edible | Oral | 8 |
| Asparagaceae | Leopoldia camosa (L.) Parl. | Sirmook 1235 | Bulb | Anti-diarrhea (2), Bronchitis (3), Cough (1) | GAS-D, RES-R, RES-R | Mixed with food | Oral | 6 |
| Asteraceae | Achillea elophora DC. | Gole bengerask 921 | Flowering branches | Relaxing (4), Gastric discomfort (7), Parasite repellent (3), Anti-diarrhea (10), Menstrual disorders (2), Cams, Febri-fuge (8), Stomachache (12) | NER-N, GAS-D, GAS-D, GAS-D, GYN-X, SKE-L, OTH-A, GAS-D | Infusion, Powder | Oral | 46 |
| Asteraceae | Achillea santolinoides Lag. | Gole bengerask 918 | Flowering branches | Relaxing (4), Gastric discomfort (7), Parasite repellent (3), Anti-diarrhea (10), Menstrual disorders (2), Cams, Febri-fuge (8), Stomachache (12) | NER-N, GAS-D, GAS-D, GAS-D, GYN-X, SKE-L, OTH-A, GAS-D | Infusion, Powder | Oral | 46 |
| Asteraceae | Achillea wilhelmsii C. Koch | Gole bengerask 922 | Flowering branches | Stomach ache (12), Disfectant (1), Blood purifier (2), Carminative (4), Diuretic (1), Antispasmodic (6) | GAS-D, OTH-A, Blood-B, GAS-D, URO-U, NER-N | Decoction | Oral | 26 |
| Asteraceae | Arctium hoggii L. | Babaadam 950 | Leaf | Vertigo (3), Blood purifier (2), Antispasmodic (4), Detoxification (1), Food digestion (7), Parasite repellent (1), Kidney diseases (2) | NER-N, OTH-A, NER-N, OTH-A, GAS-D, GAS-D, URO-U, NER-N | Poultice, Decoction | Oral | 20 |
| Asteraceae | Artemisia absinthium L. | Afchantin 930 | Leaf, Flowering branches | Intestinal parasites (5) | GAS-D | Decoction | Oral | 5 |
| Asteraceae | Artemisia aucheri Boiss. | Jaz 934 | Flowering branches | Relaxing (6), Abdominal pains (27), Respiratory diseases (3), Body tonic (6), Febri-fuge (25) | NER-N, GAS-D, RES-R, OTH-A, OTH-A | Decoction | Oral | 68 |
| Asteraceae | Artemisia persica Boiss. | Dermene torki 931 | Flowering branches | Beauty of skin and hair (1) | DER-S | Essential oil, Aromatic water | Topical | |

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| Family          | Scientific name          | Local name (Persian); Voucher no. | Plant part used                          | Medicinal use (UR)                                                                 | ICPC category | Preparation          | Mode of application | (UR) | A, B, C |
|-----------------|--------------------------|----------------------------------|------------------------------------------|-------------------------------------------------------------------------------------|---------------|----------------------|---------------------|------|--------|
| Asteraceae      | *Artemisia scoparia* Waldst. & Kitam. | Dermeneh 932 Aerial parts         | Stomachache (13)                        |                                                                                      | GAS-D         | Decoction            | Oral                | 13   | B, C   |
| Asteraceae      | *Artemisia sieberi* Besser | Sorkhdermon 953                  | Flowering branches                      | Anti-nausea (20), Antispasmodic, (8) Parasite repellent (18)                        | GAS-D, NER-N, GAS-D | Decoction            | Oral                | 61   | A      |
| Asteraceae      | *Atractylis cancellata* L | Kharcharkha 940 Gum, Leaf         | Vegetable (3)                           |                                                                                      | SKE-L         | Decoction            | Topical             |      |        |
| Asteraceae      | *Calendula officinalis* L | Gole bahari 942 Aerial parts      | Carminative (2), Pancreatic cancer (1)  |                                                                                      | GAS-D, CAN-C  | Infusion             | Oral                | 8    | B, C   |
| Asteraceae      | *Astromis asarifera* L    | Kharzard 971                     | Flower                                  | Bruise (2)                                                                           | SKE-L         | Poultice             | Oral                | 2    | B, C   |
| Asteraceae      | *Centaurea benedicta* (L.) L. | Khar moghadas 980 flowering      | Memory tonic (2)                        |                                                                                      | NER-N         | Decoction            | Oral                | 2    | B, C   |
| Asteraceae      | *Centaurea bruguiera* (DC.) Hand- Mazz. | Gole gandom 981 Aerial parts      | Anti-inflammatory (2)                   |                                                                                      | SKE-L         | Decoction            | Oral                | 2    | A      |
| Asteraceae      | *Chichorium intybus* L    | Kasni 925 Flower and Flower       | Jaundice (15), Liver diseases (2), Diuretic (2), Febrifuge (13), Antihypertensive (2), Laxative (55) |                                                                                      | GAS-D, GAS-D, URO-U, OTH-A, CAR-K, GAS-D | Aromatic water, Maceration | Oral | 89 | A, C   |
| Asteraceae      | *Cichorium pumilum* Jacq. | Kasni 913 Leaf and Flower         | Jaundice (14), Liver diseases (2), Febrifuge (14), Blood purifier, Antihypertensive (2), Laxative (50) |                                                                                      | GAS-D, OTH-A, GAS-D | Aromatic water, Maceration | Oral | 96 | A      |
| Asteraceae      | *Cirsium arvense* (L.) Scop. | Kangar 925 Root, Pith parenchyma  | Appetizing (5)                          |                                                                                      | OTH-A         | Decoction            | Oral                | 21   | A      |
| Asteraceae      | *Cota tinctoria* (L.) JGay | Babounesh 939 Flowering branches | Throat pains (4), Nervous problems (13), Common cold (14), Anti-diarrhea (20), Prostate (5) |                                                                                      | GAS-D, NER-N, RES-R, GAS-D | Decoction          | Oral                | 56   | A, C   |
| Asteraceae      | *Cousinia congesta* Bunge. | Polooosh 945 Gum                  | Asthma (2)                              |                                                                                      | RES-R         | Decoction            | Oral                | 2    | B, C   |
| Asteraceae      | *Cyanus depressus* (M.Bieb.) Sojak | Gole gandom 977 Flower           | Digestive (11), Cough (1), Laxative (6) |                                                                                      | GAS-D, RES-R, GAS-D | Decoction          | Oral                | 18   | B, C   |
| Asteraceae      | *Echinops itrodos* Bunge | Kaloor 983 Fruit                  | Gastric discomfort (7)                  |                                                                                      | GAS-D         | Decoction            | Oral                | 7    | B, C   |
| Asteraceae      | *Glebionis coronaria* (L.) Cass. ex Spach. | Davoodi 986 Aerial parts | Blood purifier (2), Eyesight enhancement (2) |                                                                                      | OTH-A, EYE-F  | Infusion             | Oral                | 4    | B, C   |
| Asteraceae      | *Gundelia tournfortii* L | Kangar 974 Pith parenchyma        | Gastric discomfort (8), Constipation (12), Reduce Blood fat (11), Blood purifier (15) |                                                                                      | GAS-D, GAS-D, OTH-A, OTH-A | Edible, Salad | Oral | 36 | B, C   |
| Asteraceae      | *Herba angustifolius* (DC) Kuntze | Karkich babani 975 Leaf, Flower   | Pain relief (4)                         |                                                                                      | NER-N         | Decoction            | Oral                | 4    | B, C   |
| Asteraceae      | *Herba intermedia* (Boiss.) Kuntze | Karkich 973 Flowering             | Insect bite (5), Purgative (2), Parasite repellent (1) |                                                                                      | DER-S, GAS-D, GAS-D | Poultice, Topical | Oral | 8   | A      |
| Family      | Scientific name                        | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                           | ICPC category | Preparation | Mode of application (UR) A, B, C |
|------------|----------------------------------------|----------------------------------|-----------------|----------------------------------------------|---------------|-------------|----------------------------------|
| Asteraceae | *Inula britannica* (Boiss.) L.         | Mosafa 979                       | branches        | Reducing thirst (3)                          | OTH-A         | Decoction   | Oral                             |
| Asteraceae | *Lactuca orientalis* (Boiss.) Boiss.  | Jaroo 958                        | Aerial parts    | Insomnia (3)                                 | OTH-A         | Decoction   | Oral                             |
| Asteraceae | *Lactuca serriola* (Boiss.) Boiss.    | Kahokhardar 916                  | Aerial parts,   | Bone and joint pains (1), Purgative (1)     | SKE-L, GAS-D  | Poultrice,  | Oral                             |
| Asteraceae | *Laurus acaenthodes* (Boiss.) Kuntze  | Goojar 918                       | Aerial parts    | Animal parasite repellent (122), Pain relief (4) | GAS-D, NER-N  | Maceration,  | Oral                             |
| Asteraceae | *Matricaria chamomilla* L.            | Babounark 946                    | Flowering       | Anti-inflammation (2), Anti-nausea (3)       | SKE-L, GAS-D  | Decoction,   | Oral                             |
| Asteraceae | *Onopordum carmanicum* (Bonn.) Bonm.  | Kangar 919                       | Latex, Flowering branches | Gastric discomfort (4) | GAS-D         | Decoction,   | Oral                             |
| Asteraceae | *Onopordum leptolepis* DC.            | Kangar 920                       | Aerial parts,   | Urinary discomfort (4), Abdominal pains (9), Anti-diarrhea (8) | URO-U, GAS-D, GAS-D | Decoction,   | Oral                             |
| Asteraceae | *Rhaponticum repens* (L.) Hidalgo     | Talkhe sadi 927                  | Aerial parts    | Baby fever (2), Cancer (2)                   | OTH-A, CAN-C  | Poultrice,  | Oral                             |
| Asteraceae | *Scorzonea mucida* “Rech.f., Aellen & Esfand.” | Kalagho 912 | Fresh leaf | Infectious wound (3) | DER-S | Poultrice,  | Oral                             |
| Asteraceae | *Senecio glaucus* L.                  | Bangdaneh 990                    | Aerial parts    | Chronic wound (6)                            | DER-S         | Poultrice,   | Oral                             |
| Asteraceae | *Silybum marianum* (L.) Gaertn.       | Khrmamayam 995                   | Leaf            | Fatty liver (35), Reduce blood sugar (3)     | GAS-D, MET-T  | Decoction,   | Oral                             |
| Asteraceae | *Sanchus asper* (L.) Hill              | Shirizhagh 996                   | Leaf            | Skin rash (3)                                | DER-S         | Poultrice,   | Oral                             |
| Asteraceae | *Sanchus oleaceus* (L.) L.            | Shirizhagh 997                   | Leaf            | Skin rash (3)                                | DER-S         | Poultrice,   | Oral                             |
| Asteraceae | *Tanacetum parthenium* (L.) Sch.Bip.  | Babounagh 960                    | Aerial parts    | Parasite repellent (4), Migraine (2), Anti-inflammation (10), Peptic ulcer (3), Gastritis (6) | OTH-A, NER-N, SKE-L, GAS-D | Decoction,   | Oral                             |
| Asteraceae | *Tanacetum assemia* Boiss.            | Shirkandan 998                   | Leaf, Flower    | Liver tonic (1), Diuretic (1)                | GAS-D, URO-U  | Decoction,   | Oral                             |
| Asteraceae | *Tanacetum pseudocacabophalum* Soest. | Gasedak 906                     | Seed            | Blood fat (1)                                | Blood-B       | Decoction,   | Oral                             |
| Asteraceae | *Tragopogon gramineus* DC.            | Sheng 999                        | Leaf, Root      | Diuretic (3), Gastrointestinal disorders (2) | URO-U, GAS-D  | Decoction,   | Oral                             |
| Berberidaceae | *Berberis integerrima* Bunge.        | Zarch 681                        | Root            | Reduce blood sugar (61), Animal parasite repellent (2), Hepatitis (2), Joint pains (22), Breaking bone healing (15), Leaking addiction (27) | MET-T, GAS-D, CAR-K, GAS-D, SKE-L, SKE-L | Decoction,   | Oral                             |
| Berberidaceae | *Berberis integerrima* Bunge.        | Zarch 681                        | Leaf            | Textile fiber color (9), Blood pressure (28) | OTH-A, CAR-K  | Decoction,   | Oral                             |
| Bignoniaceae | *Biebsteinia multifida* DC.           | Piche bahman 683                | Root            | Reinforcing sexual desire (9), Pain relief (5), Colic (3) | OTH-A, NER-N, GAS-D | Decoction,   | Oral                             |
| Bignoniaceae | *Tecomella undulata* (Sm.) Seem.     | Golparak 701                     | Stem bark, Leaf | Skin ailments (79), Eczema (64), Reduce blood sugar (41), Urinary problems (10) | DER-S, DER-S, MET-T | Poultrice,  | Oral                             |

Table 3 Medicinal plants used by ethnic communities in the Kerman province (Continued)
| Family     | Scientific name                          | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                                                                 | ICPC category         | Preparation | Mode of application (UR) | A, B, C |
|------------|------------------------------------------|-----------------------------------|-----------------|-----------------------------------------------------------------------------------|-----------------------|-------------|--------------------------|---------|
| Boraginaceae | Anchusa azurea Mill.                     | Gavzaban 710                      | Flower          | Relaxing (4)                                                                       | NER-N                | Decoction, Infusion     | Oral, Oral, Oral | 4     |
| Boraginaceae | Buglossoides arvensis (L.) IM.Johnst.    | Sangdaneh 711                     | Leaf, Root      | Pain relief (6)                                                                   | NER-N                | Decoction              | Oral, Oral, Oral | 6, 2   |
| Boraginaceae | Caccinia macranthera (Banks & Sol.) Brand | Gavzaban 720                      | Flower          | Relaxing (3)                                                                       | NER-N                | Decoction              | Oral, Oral, Oral | 3, 1   |
| Boraginaceae | Cordia myxa L.                           | Pohil 724                         | Fruit           | Common cold (5), Appetizing (4), Throat pain (10), Eczema (2), Kidney stone (3) | RES-R, GAS-D, DER-S, URO-U | Poultice, Infusion, Oral | Oral, Oral, Oral | 26    |
| Boraginaceae | Echium amoenum Fisch. & C.A.Mey.         | Golgavzaban 734                   | Flower          | Sleeplessness (27), Relaxing (76), Anorexia (1)                                   | NER-N, NER-N, Psy-P  | Decoction, Infusion     | Oral, Oral, Oral | 104   |
| Boraginaceae | Nonea caspica (Willd.) G.Don              | Gavzarbnak 715                    | Leaf, Flower    | Relaxing (2), Anorexia (1)                                                        | RES-R, NER-N, Psy-P  | Decoction              | Oral, Oral, Oral | 5     |
| Boraginaceae | Nonea persica Boiss.                     | Serkoe Gashte 712                 | Flower and Leaf | Relaxing (3), Heart tonic (5), Expectorant (2), D`infectant (4)                  | NER-N, NER-N, DER-S, CAR-K, RES-R | Decoction | Oral, Oral, Oral | 14    |
| Boraginaceae | Onosma stenosiphon Boiss.                | Hoochoo 716                       | Root            | Women infection (7), Pain relief (6), Bruise (8), Wound sucker (13), Burn healing (9) | NER-N, NER-N, Psy-P  | Decoction              | Oral, Oral, Oral | 43    |
| Boraginaceae | Solenanthus cinnatius Ledeb.             | Choobe Azar 725                   | Stem bark       | Bruise (95)                                                                       | NER-N, NER-N, Psy-P  | Decoction              | Oral, Oral, Oral | 95    |
| Boraginaceae | Trichodesma stocksii Boiss.              | Gavzaban 727                      | Flower          | Nerve tonic (6), Respiratory ailments (1), Sore throat (1), Relaxing (1)          | NER-N, NER-N, GAS-D  | Decoction, Infusion, Oral | Oral, Oral, Oral | 9     |
| Brassicaceae | Alyssum linifolium Stephan ex Wild.      | Ghodoomeh 756                     | Seed            | Laxative (3), Cough (2)                                                           | GAS-D, RES-R         | Decoction, Infusion     | Oral, Oral, Oral | 5     |
| Brassicaceae | Alyssum scovitiani Fisch. & C.A.Mey.     | Toodari karpoo 740                | Seed            | Laxative (14)                                                                     | GAS-D                | Decoction              | Oral, Oral, Oral | 14    |
| Brassicaceae | Brassica nigra (L.) KKoch                | Khardal 750                       | Root, Leaf, Seed | Memory improvement (1), Skin clarification (2)                                    | NER-N, DER-S         | Poultice, Decoction, Oral | Oral, Oral, Oral | 3     |
| Brassicaceae | Brassica rapa L.                         | Shalgham 749                      | Root            | Respiratory ailments (3), Common cold (3)                                         | RES-R, RES-R         | Edible, Decoction      | Oral, Oral, Oral | 74    |
| Brassicaceae | Capella bursa-pastoris (L.) Medik.       | Kisekesh 745                     | Aerial parts    | Blood purifier (7)                                                                | Blood-B              | Decoction, Infusion     | Oral, Oral, Oral | 7     |
| Brassicaceae | Descurainia sophia (L.) Webb. ex Prantl  | Khakshir 762                     | Seed            | Laxative (42), Disinfectant (5), Reducing thirst (7), Constipation (46), Throat infection (10), Intestinal pain (7), Blood purifier (4), Heatstroke (7), Anti-diarrhea (5) | GAS-D, GAS-D, OTH-A, GAS-D, GAS-D, OTH-A, GAS-D | Decoction, Infusion, Syrup, Maceration | Oral, Oral, Oral | 96    |
| Brassicaceae | Eruca vesicaria (L.) Cav.                | Mandow 755                        | Young stem and leaf | Body tonic (2)                                                                    | OTH-A                | Salad, Infusion         | Oral, Oral, Oral | 2     |
| Brassicaceae | Erysimum crassicaule (Boiss.) Boiss.     | Khakshir talkh 760               | Seed            | Respiratory ailments (4)                                                          | RES-R                | Maceration              | Oral, Oral, Oral | 4     |
| Brassicaceae | Fortunia garcini (Burm.f.) Shuttlew.     | Shabboo 765                       | Aerial parts, Laeaf and flower | Migraine (5), Relaxing (6), Menstrual disorders (2), Flavoring of food (4), Antispasmodic (3), Stomach tonic (6) | NER-N, NER-N, GYN-X, NER-N, GAS-D | Decoction, Infusion, Mixed with food | Oral, Oral, Oral | 26    |
| Brassicaceae | Goldbachia laevigata (M.Bieb.) DC.       | Nakhonak 780                     | Seed            | Antimicrobial (1)                                                                 | OTH-A                | Decoction              | Oral, Oral, Oral | 1     |
| Family        | Scientific name       | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                                                                 | ICPC category | Preparation | Mode of application (UR) | A, B, C |
|---------------|-----------------------|-----------------------------------|----------------|-----------------------------------------------------------------------------------|---------------|-------------|--------------------------|---------|
| Brassicaceae  | Lepidium draba L.     | Mookoo 759                        | Leaf           | Eczema (4), Reduce rheumatic pain (7), Diuretic (8), Gastritis (4), Stomach acidification (4), Cough (8), Flavoring of food (16), Anemia (3) | DER-S, SKE-L, URO-U, GAS-D, SKE-L, OTH-A, Blood-B | Poultice, Decoction | Oral                              | 54 B, C |
| Brassicaceae  | Lepidium latifolium L. | Taavanzad 770                    | Aerial parts   | Pickle (9), Body tonic (3)                                                                 | OTH-A, OTH-A | Edible      | Oral                                   | 12 B, C |
| Brassicaceae  | Lepidium sativum L.   | Shahi 776                         | Leaf           | Muscle cramps (2), Reduce rheumatic pain (3)                                         | SKE-L, SKE-L, SKE-L, SKE-L | Decoction   | Oral                              | 5 B, C |
| Brassicaceae  | Raphanus caudatus L.  | Torobcheh 784                    | Root           | Digestive (6), Urinary problems (2)                                                   | GAS-D, URO-U | Vegetable, Decoction | Oral                          | 8 B, C |
| Brassicaceae  | Sisymbrium irio L.    | Khakshir 763                     | Seed           | Pickle (9), Body tonic (3)                                                                 | OTH-A, OTH-A | Edible      | Oral                                   | 12 B, C |
| Brassicaceae  | Thlaspi perfoliatum L.| Kisehchoochan 785               | Seed           | Diuretic (5)                                                                 | URO-U        | Decoction   | Oral                              | 5 B, C |
| Cannabis      | Cannabis sativa L.    | Kanaa 764                         | Seed, Leaf, flowering branches | Urinary problems (3), Sleeplessness (2), Nervous system tonic (7), Relaxing (2) | URO-U, NER-N, NER-N | Decoction, Poultice | Oral                                    | 14 B, C |
| Campanulaceae | Campanula kermanica (Rech.f., Aellen & Esfand.) Rech.f. | Golgishoo 1325 | Flower and leaf | Cough (4)                                                                 | RES-R        | Decoction   | Oral                              | 4 B, C |
| Capparidaceae | Capparis spinosa L.   | Dak 634                           | Fruit, Leaf    | Liver diseases (1), Anemia (1), Joint pains (3), Antimicrobial (12), Pickle (7), Eczema (16) | RES-R, OTH-A, SKE-L, OTH-A, OTH-A, DER-S | Decoction, Poultice | Oral, Topical               | 40 A    |
| Caprifoliaceae | Lomelosia olivieri (Coul.) Ghernefel | Sarbanafsheh 1331 | Flower         | Dianthea (5), Joint pans (4)                                                         | GAS-D, SKE-L | Decoction, Poultice | Oral, Topical              | 9 B, C |
| Caprifoliaceae | Scabiosa candollei DC. | Talikhou 1332                     | Flower         | Anti-diarrhea (8), Abdominal pains (5), Bone and joint pains (2)                     | GAS-D, GAS-D, SKE-L | Decoction, Poultice | Oral, Topical              | 16 A    |
| Caprifoliaceae | Scabiosa flavida Boiss. & Hausskn. | Sarbanafsheh 1334 | Flower         | Anti-diarrhea (4), Joint pans (3)                                                    | GAS-D, SKE-L | Decoction, Poultice | Oral, Topical              | 7 B, C |
| Caprifoliaceae | Valeriana ficariifolia Boiss. | Alafe 1337 | Root, Rhizome | Relaxing (5)                                                                   | NER-N        | Decoction   | Oral                              | 5 B, C |
| Caryophyllaceae | Dianthus arutian Sm.  | Ghernefel 612                    | Seed           | Toothache (17), Breath freshener (2)                                                | OTH-A, RES-R | Decoction, Poultice | Oral, Topical              | 19 B, C |
| Caryophyllaceae | Dianthus orientalis Adams | Mikhak 611 | Leaf, Flower | Toothache (24), Breath freshener (2), Headache (18), Nerve pain (27)              | OTH-A, RES-R, NER-N | Decoction, Poultice | Oral, Topical              | 71 A    |
| Caryophyllaceae | Herminia hirsuta L.   | Fethg 613                        | Aerial parts   | Burn wound healing (5)                                                              | DER-S        | Poultice, Decoction | Oral                              | 5 B, C |
| Cleomaceae    | Cleome coluteoides Boiss. | Alafe maar 1350 | Leaf, Flower and Fruit | Diuretic (5), Laxative (2), Anti-nausea (2), psoriasis (2) | URO-U, GAS-D, GAS-D, DER-S | Decoction, Poultice | Oral                              | 11 B, C |
| Colchicaceae  | Colchicum schimperi Janka ex Stef. | Hassatoo 452 | Root           | Wart treatment (5), Joint pains (6), Reduce the pain of gout disease (4)           | DER-S, SKE-L, NER-N | Poultice | Oral                              | 15 B, C |
| Convolvulaceae | Convovulus arvensis L. | Pichak 791                       | Leaf, Flower, Seed | Gastric discomfort (12), Wound healing (3), Asthma (2)                | GAS-D, DER-S | Decoction, Poultice | Oral, Topical               | 17 A    |
| Family            | Scientific name          | Local name (Persian); Voucher no. | Plant parts used | Medicinal use (UR)                                                                 | ICPC category       | Preparation | Mode of application | (UR) A, B, C |
|-------------------|--------------------------|-----------------------------------|------------------|----------------------------------------------------------------------------------|---------------------|-------------|---------------------|---------------|
| Convolvulaceae    | Cressa cretica L.        | Alaf mourcheh 790                 | Aerial parts     | Antifungal (4), Antibacterial (14)                                               | OTH-A, OTH-A        | Poultice    | Topical             | 18 A          |
| Convolvulaceae    | Cuscuta epithymum (L.) L. | Ses 792                           | Aerial parts     | Diuretic (2), Jaundice (2)                                                       | URO-U, GAS-D        | Decoction   | Oral                | 4 A, C        |
| Cucurbitaceae     | Citrulus colocynthis (L.) Schrad. | Gelgenjak 890                | Fruit, Seed, Root | Reduce blood sugar (8), Reduce rheumatic pain (3), Scorpion bite (6), Chronic ulcers (5), Antihypertensive (4), Febufige (2), Bone and joint pains (8) | MET-T, DER-S, DER-S, OTH-A, CAR-K, DER-S, SKE-L | Poultice, powder | Oral                | 119 A         |
| Cucurbitaceae     | Cucumis sativus L.       | Kheyar 889                       | Aerial parts     | Laxative (13)                                                                   | GAS-D               | Decoction   | Oral                | 13 A, C       |
| Cucurbitaceae     | Cucurbita moschata Duchesne | Kadoohalvaee 891               | Seed             | Prostate (6)                                                                    | URO-U               | Decoction   | Oral                | 6 A, C        |
| Cucurbitaceae     | Cucurbita pepo L.        | Kadoo 885                        | Fruit            | Blood fat (8), Constipation (4)                                                  | Blood-B, GAS-D      | Edible      | Oral                | 12 A, C       |
| Cupressaceae      | Juniperus excelsa M.Bieb. | Avors 203                        | Leaf and fruit   | Pest Control (15), Algae Pool Control (3), Wood corrosion (10), Pain relief (4) | OTH-A, OTH-A, OTH-A, OTH-A, NER-N | Dressing, Poultice, Decoction | Oral                | 143 B         |
| Elaeagnaceae      | Elaeagnus angustifolia L. | Senjed 544                       | Seed             | Joint pains (26), Anti-diarrhea (48), Peptic ulcer (10)                         | SKE-L, GAS-D, GAS-D | Poultice, Powder | Oral                | 90 A          |
| Ephedraceae       | Ephedra distachya L.     | Khimouk 182                      | Young branches   | Stomachache (12), Relaxing (8), Peptic ulcer (62), Stomach burning, (22) Traditional tannery (10), Relaxing (1) | GAS-D, NER-N, GAS-D, GAS-D, GAS-D, GAS-D, GAS-D, NER-N | Decoction, Infusion | Oral                | 115 B, C      |
| Ephedraceae       | Ephedra falkiata Boiss. ex C.A.Mey. | Khimouk 180                  | Young branches   | Stomachache (2), Relaxing (3), Peptic ulcer (3), Relaxing (1)                  | GAS-D, NER-N, GAS-D, GAS-D, NER-N | Decoction, Infusion | Oral                | 9 B, C        |
| Ephedraceae       | Ephedra major Host       | Alijoon 185                      | Young branches, Fruit | Respiratory ailments (4), Cough (4), Common cold (5), Pain relief (24), Relaxing (1) | RES-R, RES-R, RES-R, NER-N, NER-N | Decoction | Oral                | 53 A          |
| Ephedraceae       | Ephedra intermedia Schrenk & C.A.Mey. | Khimouk 179                   | Young branches, Fruit | Traditional tannery (15)                                                        | OTH-A               | Decoction   | -                   |              |
| Ephedraceae       | Ephedra pachyclada Boiss. | Hoome nar 186                   | Young branches, Fruit | Common cold (5), Stomachache (7), Weight loss (36), Peptic ulcer (50), Traditional tannery (15), Relaxing (1) | RES-R, GAS-D, OTH-A, GAS-D, OTH-A, NER-N | Decoction, Infusion | Oral                | 114 B, C      |
| Ephedraceae       | Ephedra strobiacea Bunge | Khimook 189                      | Young branches, Fruit | Pain relief (37), Gastric discomfort (53), Relaxing (1)                         | NER-N, GAS-D, NER-N | Decoction   | Oral                | 91 A          |
| Family         | Scientific name                  | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                                                                 | ICPC category                  | Preparation | Mode of application | (UR) | A, B, C |
|----------------|----------------------------------|-----------------------------------|----------------|----------------------------------------------------------------------------------|-------------------------------|-------------|---------------------|------|---------|
| Euphorbiaceae  | Euphorbia bussei Pax              | Shirsag 470                       | Young leaf     | Treatment of Blisters (5), Skin stimulant (3), Reduced vision (3), Anemia (2) | DER-S, DER-S, EYE-F, Blood-B | Decoction   | Oral, Topical       | 13   | A, C    |
| Euphorbiaceae  | Euphorbia granulata Forsk.        | Shirbeng 472                      | Latex          | Eczema (2)                                                                         | DER-S                         | Latex       | Topical             | 2    | B, C    |
| Euphorbiaceae  | Euphorbia helioscopia L.          | Shirbeng 484                      | Leaf, Seed     | Joint pains (3), Skin rash (3), Reduce rheumatic pain (2)                          | SKE-L, DER-S, SKE-L           | Decoction, Poultice | Oral, Topical       | 8    | A       |
| Euphorbiaceae  | Euphorbia peplus L.               | Alafe zergi 1445                  | Latex          | Eczema (2)                                                                         | DER-S                         | Latex       | Topical             | 2    | B, C    |
| Euphorbiaceae  | Euphorbia serpens Kunth          | Gazeroo 477                       | Latex          | Eczema (10)                                                                        | DER-S                         | Latex       | Topical             | 10   | B, C    |
| Euphorbiaceae  | Euphorbia turcomanica Boiss.      | Farfyeon 478                      | Latex          | Eczema (3)                                                                         | DER-S                         | Latex       | Topical             | 3    | B, C    |
| Euphorbiaceae  | Ricinus communis L.               | Kenton 499                        | Seed           | Laxative (3), Skin patches (2), Hair tonic (5), Disinfectant (4)                  | GAS-D, DER-S, DER-S, OTH-A    | Poultice, Oil Decoction | Oral, Topical       | 13   | A       |
| Fabaceae       | Alhagi mauorum Medik.             | Adoor 675                         | Aerial parts   | Urinary stone (13), Hemorrhoid (2), Reduce rheumatic pain (1)                     | URO-U, CAR-K, SKE-L           | Decoction, Poultice | Oral, Topical       | 17   | A, C    |
| Fabaceae       | Alhagi pseudalhagi (M. Bieb.) Desv. ex B. Keller & Shap. | Adoor 674 | Aerial parts | Urinary stone (13), Child jaundice (4)                                             | URO-U, GAS-D                  | Aromatic water, Decoction | Oral | 15 A    |
| Fabaceae       | Astracantha lateritia (Boiss. & Hausskn) Podlech | Khar 640 | Stem     | Hair tonic (22), Eczema (45)                                                       | DER-S, DER-S                  | Gel         | Topical             | 67   | B, C    |
| Fabaceae       | Astragalus eremophilus Boiss.     | Gavan 643                         | Seed           | Reinforcing sexual desire (3), Asthma (5), Preventing of the Blood coagulation (2), Expectorant (5) | OTH-A, RES-R, Blood-B, RES-R | Decoction | Oral               | 15   | A       |
| Fabaceae       | Astragalus fasciculifolius subsp.arbusculinus (Bornm. & Gaubal Tietz) | Anizaroot 645 | Gum, Stem bark | Ear infection (3), Earache (2), Cough (3), Stomachache (5), Livestock parasite (6), Common cold (4), Detoxification (5), Foot-and-mouth disease of livestock (10), Wart (6), Eye ache (2) | Der-S, Gas-D, Gas-D, OTH-A, Gas-D, Der-S, EYE-F | Decoction | Oral, Topical       | 46   | B, C    |
| Fabaceae       | Astragalus gossipinus Fisch.      | Gavan 641                         | Gum, Stem bark | Traditional kohl (67), Hair beauty (15), Hair tonic (15)                           | Der-S, Der-S, Der-S           | Gel, Poultice | Oral, Topical       | 97   | B, C    |
| Fabaceae       | Astragalus ovoideus Sij. & Rech.f. | Margin 685 | Gum | Anti-stress (4), Relaxing (4)                                                       | Ner-N, Ner-N                  | Decoction   | Oral               | 8    | B, C    |
| Fabaceae       | Cercis siliquastrum L.            | Aragan 646                        | Leaf, Stem bark | Gastric discomfort (3), Expectorant (2)                                           | Gas-D, RES-R                  | Oral        | Topical             | 5    | B, C    |
| Fabaceae       | Cicer arietinum L.                | Nikhod kermani 659                | Seed           | Hair tonic (2), Diuretic (3)                                                        | Der-S, URO-U, CAN-C           | Decoction, Poultice | Oral, Topical       | 5    | A, C    |
| Fabaceae       | Cicer kermanense Bomm.            | Nikhod-e kermani 660              | Fruit          | Hair tonic (2), Diuretic (3), Menstrual regulation (2)                            | Der-S, URO-U, GYN-X           | Decoction | Oral, Topical       | 7    | A       |
| Fabaceae       | Colutea persica Boiss.            | Feh 652                           | Stem bark      | Wound healing (3)                                                                 | Der-S                         | Poultice | Oral, Topical       | 3    | B, C    |
| Fabaceae       | Dalbergia sissoo DC.              | Jag 653                           | Stem bark      | Abortion (2), Expectorant (7), Anti-parasitic (2), Bum healing (2), Anti-nausea (2), Reducing thirst (1) | Pré-R, RES-R, Gas-D, Gas-D, Gas-D | Decoction | Oral, Topical       | 16   | A       |
| Fabaceae       | Genista tinctoria L.              | Rangine 654                       | Aerial parts   | Anti-diarhea (2), Gastric discomfort (4), Abdominal pains (3), Constipation (2)    | Gas-D, Gas-D, Gas-D, Gas-D | Decoction | Oral               | 11   | A       |
| Fabaceae       | Glycyrrhiza glabra L.             | Marli 650                         | Root           | Stomach ulcers (28), Aphthous ulcer (83), Expectorant (9), Breaking bone healing (14), Prostate (4) | Gas-D, Gas-D, RES-R, SKE-L, URO-U | Decoction, Poultice | Oral, Topical       | 138  | A, C    |
| Fabaceae       | Lathyrus sativus L.               | Karoo 661                         | Aerial part    | Laxative (5), Common cold (2), Fatty liver (2), Jaundice (3),                     | Gas-D, Gas-D, RES-R, GAS-D, Edible | Oral        | Oral, Topical       | 14   | B, C    |
| Family   | Scientific name            | Local name | Plant part used | Medicinal use (UR) | ICPC category | Preparation Mode of application (UR) | A, B, C |
|----------|---------------------------|------------|-----------------|-------------------|---------------|--------------------------------------|---------|
| Fabaceae | Lens culinaris Medik.     | Adas 663   | Seed            | Body tonic (10)    | OTH-A         | Edible Oral                           | 10 A, C |
| Fabaceae | Medicago sativa L.        | Yonjeh 665 | Young Leaf      | Intestinal parasites (1), Eyesight tonic (7), Appetizing (2), Anemia (8) | GAS-D, EYE-F, OTH-A, OTH-A | Decoction Oral                       | 28 A    |
| Fabaceae | Mella tus officinalis (L.) Pall. | Kalilalmolk 697 | Leaf and young stem | Common cold (4), Diuretic (2), Relaxing (9), Antispasmodic (5) | RES-R, URO-U, NER-N, NER-N | Decoction Oral                       | 18 B, C |
| Fabaceae | Onobrychis altissima Grosh. | Espees 670 | Leaf, Flower    | Jaundice (7), Appetizing (2) | GAS-D, OTH-A | Decoction Oral                       | 9 A     |
| Fabaceae | Ononis spinosa L.          | Kharkhar 668 | Root            | Inflammation of the urinary tract (6), Diuretic (6) | URO-U, URO-U | Decoction Oral                       | 12 B, C |
| Fabaceae | Phaseolus vulgaris L.      | Loobia sabz 669 | Fruit          | Cardiovascular diseases (5), Diuretic (2), Cancer (1) | CAR-K, URO-U, CAN-C | Mixed with food Oral                | 8 B, C |
| Fabaceae | Prosopis cineraria (L.) Druce | Kahoor 655 | Latex            | Eczema (10)       | DER-S | Latex of burning stem Topical       | 26 B, C |
| Fabaceae | Prosopis farcta (Banks & Sol.) J.F. Macbr. | Kahoorak 684 | Dried Fruit | Antihistamine (2), Preventing of nose bleeding (2) | OTH-A | Decoction Oral                       | 4 B, C |
| Fabaceae | Sophora alopecuroides L.   | Talikhe 687 | Whole plant     | Antihypertensive (1), Antibacterial (2), Constipation (2), Pain-relief (1) | CAR-K, OTH-A, GAS-D, NER-N | Decoction Oral                       | 6 B, C |
| Fabaceae | Sophora malis (Royle) Baker | Talikhe 688 | Seed            | Antihypertensive (1), Antibacterial (2), Constipation (2), Pain-relief (1) | CAR-K, OTH-A, GAS-D, NER-N | Mixed with food Oral                | 6 B, C |
| Fabaceae | Sophora pachycarpa C.A.Mey. | Talikhe 690 | Seed            | Antihypertensive (1), Antibacterial (2), Constipation (2), Pain-relief (1) | CAR-K, OTH-A, GAS-D, NER-N | Mixed with food Oral                | 6 B, C |
| Fabaceae | Taverniera cuneifolia (Roth) Ali | Lati 614 | Leaf             | Wound healing (9) | DER-S | Poultice Topical                    | 9 B, C |
| Fabaceae | Taverniera nummularia DC.  | Daf 615    | Leaf            | Wound healing (9) | DER-S | Poultice Topical                    | 9 B, C |
| Fabaceae | Tragacantha fasciculiflora (boiss.) Kunzle | Khaar 680 | Stem and leaf   | Hair tonic (3), Gingival inflammation (5) | DER-S, GAS-D | Gum, Powder Topical, Oral          | 8 B, C |
| Fabaceae | Trifolium repens L.        | Shabare sefid 693 | Aerial parts | Blood purifier (3), Cough (2), Cardiovascular disorders (1), Anti-diabetes (3), Digestive (4), Bum healing (6) | OTH-A, RES-R, CAR-K, GAS-D, GAS-D, DER-S | Decoction, vegetable Oral | 9 A, C |
| Fabaceae | Trigonella foenum-graecum L. | Shanballeh 694 | Leaf and young stem | Antihypertensive (6), Reduce blood sugar (5) | CAR-K, MET-T | Decoction Oral                       | 21 A    |
| Fabaceae | Vicia faba L.              | Bagla 689   | Seed            | Reduce the blood fat (3), Constipation (4) | Blood-B, GAS-D | Food Oral                          | 7 A     |
| Fabaceae | Vicia sativa L.            | Mash 617    | Seed            | Anti-diabetes (2), Diuretic (1), Gumboil (2) | GAS-D, URO-U, GAS-D | Eat as food Oral                   | 5 A     |
| Fabaceae | Lens culinaris Medik.      | Adas 630    | Seed            | Anti-diabetes (2), Diuretic (1), Gumboil (2) | GAS-D, URO-U, GAS-D | Eat as food Oral                   | 5 A     |
| Geraniaceae | Erodium cicutarium (L.) L'Hérr. | Soozan Kalaghoo 1411 | Aerial parts | Antibacterial (2), Wound healing (5), Anti-diabetes (3), Intestinal infection (4) | OTH-A, DER-S, GAS-D, GAS-D | Decoction, Poultice Oral           | 14 B, C |
| Family          | Scientific name                      | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR) | ICPC category | Preparation | Mode of application | (UR) A, B, C |
|-----------------|--------------------------------------|-----------------------------------|-----------------|--------------------|---------------|-------------|---------------------|-------------|
| Geraniaceae     | Geranium rotundifolium L.            | Soozani 1412                      | Bulb            | Intestinal infection (3), Anti-diarrhea (1) | GAS-D, GAS-D | Decoction | Oral | 4 A, C |
| Gentianaceae    | Centaurium pulchellum (Sw) Druce     | Ghontorionasa 1413                | Aerial parts    | Fibrinogen (4), Body tonic (3), Carminative (3) | OTH-A, OTH-A, GAS-D | Decoction | Oral | 10 B, C |
| Gisekiaceae     | Gisekia pharmaeoides L.              | Bagdyerei 1416                    | Aerial parts    | Remove skin burn (5) | DER-S | Dressing | Topical | 5 A |
| Hypericaceae    | Hypericum perforatum L.              | Raee 859                          | Leaf and flower | Burn wound (3) | DER-S | Poultice | Topical | 3 A, C |
| Iridaceae       | Iris germanica L.                    | Zanbagh 314                       | Aerial parts    | Febrifuge (4), Body tonic (3), Carminative (3) | OTH-A, OTH-A, GAS-D | Decoction | Oral | 4 B, C |
| Iridaceae       | Moraea styrinicum (L) Ker Gawl.      | Zanbagh 317                       | Aerial parts    | Cough (3), Common cold (5) | OTH-A, OTH-A, GAS-D | Decoction | Oral | 8 A, C |
| Juglandaceae    | Juglans regia L.                     | Gerdoo 1450                       | Leaf            | Beans pest (12), Arthritis (1), treatment of Secretions of the womb (2) | GAS-D | Decoction | Oral | 16 A, C |
| Lamiaceae       | Ajuga chamaecistus Ging. ex Benth.   | Sameesk 811                       | Leaf and flowering | Detoxification (7), Peptic ulcer (6), Dry cough (8), Expectorant (8) | OTH-A, OTH-A, GAS-D | Decoction | Oral | 12 B, C |
| Lamiaceae       | Clinopodium gracilens (M.Bieb.) Kuntze. | Melangoo 813                   | Fruit, Seed, Aerial parts | Detoxification (7), Peptic ulcer (6), Dry cough (8), Expectorant (8) | OTH-A, OTH-A, GAS-D | Decoction | Oral | 29 B, C |
| Lamiaceae       | Dracocephalum polychaetum Bomn.      | Zarab 834                         | Leaf, flowering branches | Reduce rhematic pain (2), Stomachache (34), Too thache (13), Headache (12), Reduce blood sugar (8), Anti-diarrhea (26), Detoxification (33), Body tonic (37), Reliving (9), Back pain (23), Blood purifier (17) | SKE-L, GAS-D, GAS-D, NER-N, MET-T, GAS-D, OTH-A, OTH-A, NER-N, SKE-L, CAR-K | Decoction, Infusion | Oral | 216 B |
| Lamiaceae       | Lallemantia royleana (Benth) Benth.  | Melangoo 821                      | Fruit           | Carminative (3), Cough (4), Constipation (4), Expectorant (3), Vermicide (5), Dysentery (3) | GAS-D, RES-R, GAS-D, SKE-L, GAS-D, GAS-D-GAS-D | Decoction | Oral | 22 A |
| Lamiaceae       | Lamium album L.                      | Gazaneh 816                       | Flowering branches, Root | Anti-diarrhea (2), Wound healing (2), Reduce rhematic pain (3) | GAS-D, DER-S, SKE-L | Decoction, Poultice | Oral, Topical | 7 A |
| Lamiaceae       | Lavandula angustifolia Mill.         | Otokhodoos 823                    | Leaf            | Bone and joint pains (20), Reduce rhematic pain (12), Reliving (10) | SKE-L, SKE-L, NER-N | Decoction | Oral | 62 A, C |
| Lamiaceae       | Leonurus cardiaca L.                 | Dorn shir 825                     | Leaf            | Cardiac distress (4) | CAR-K | Decoction | Oral | 4 A |
| Lamiaceae       | Marrubium vulgare L.                 | Boogandoor 820                    | Leaf and flower | Bone and joint pains (4), Reduce blood sugar (7), Antibacterial (1), Reinforcing sexual desire (3), Prostate (4), Anti-diarrhea (6), Women diseases (3) | SKE-L, MET-T, OTH-A, OTH-A, URO-U, GAS-D, GYN-X | Decoction | Oral | 28 B, C |
| Lamiaceae       | Melissa officinalis L.               | Badranjbooye 830                  | Foliage         | Bone and joint pains (12), Appetizing (10), Headache (5), Dizziness (8) | SKE-L, - , NER-N, NER-N | Decoction | Oral | 33 A, C |
| Lamiaceae       | Mentha longifolia (L.) L.            | Poodehne 827                      | Leaf and Flower | Stomach ache (31), Edible (44), Common cold (6), Anti-diarrhea (30), Carminative (14), Cough (6), Gastrointestinal pains (27), Antispasmodic (3) | GAS-D, - , RES-R, GAS-D, GAS-D, GAS-D, NER-N | Decoction | Oral | 161 A |
| Lamiaceae       | Mentha spicata L.                    | Pooneh sonboolchee                | Leaf and Flower | Anti-diarrhea (10), Carminative (5), Antispasmodic (6), Pain relief (7) | GAS-D, GAS-D, GAS-D, NER-N | Decoction | Oral | 28 A |
| Family       | Scientific name                  | Local name (Persian); Voucher no. | Plant part used                  | Medicinal use (UR)                                                                 | ICPC category | Preparation  | Mode of application | (UR) A, B, C |
|--------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------------------------------------------------------|----------------|---------------|---------------------|---------------|
| Lamiaceae    | *Nepeta bornmuelleri* Hauskn. ex Borrm. | Poodeneh 837 | Aerial parts                      | Relaxing (4), Anti-diarrhea (12), Carminative (2)                                | NER-N, GAS-D   | Decoction     | Oral                | 18 A          |
| Lamiaceae    | *Nepeta braeusta* Benth.          | Zooofa 840                      | Flowering branches                | Disinfectant (9), Common cold (15)                                               | OTH-A, RES-R   | Decoction, Powder| Oral                | 24 A          |
| Lamiaceae    | *Nepeta cataria* L               | Nana 841                        | Leaf                             | Cough (17), Febrifuge (22), Colic (18), Stomachache (42), Edible (62), Common cold (35), Anti-diarrhea (68), Carminative (19), Cough (9), Antispasmodic (7), Gastrointestinal pains (31) | RES-R, OTH-A, GAS-D, GAS-D, -, RES-R, GAS-D, GAS-D, GAS-D, RES-R, GAS-D, GAS-D | Infusion, Mixed with food, Aromatic water | Oral                | 328 A         |
| Lamiaceae    | *Nepeta daenensis* Boiss.        | Poodeneh 842                    | Leaf and flowering branches       | Antimicrobial (2), Stomachache (5), Anti-diarrhea (14)                            | OTH-A, GAS-D, GAS-D | Aromatic water | Oral                | 21 A          |
| Lamiaceae    | *Lophanthus dischuparensis* (Borm.) Levin | Poodeneh 843 | Leaf and flowering branches       | Antimicrobial (2), Stomachache (5), Anti-diarrhea (14)                            | OTH-A, GAS-D, GAS-D | Aromatic water | Oral                | 21 B, C       |
| Lamiaceae    | *Nepeta glomerulosa* Boiss.      | Badrange golmowroo 844          | Aerial parts                      | Disinfectant (6), Joints pain (2)                                                 | OTH-A, SKE-L   | Decoction, Powder| Oral                | 8 A           |
| Lamiaceae    | *Nepeta ispahanica* Boiss.       | Gole Zoofa 845                  | Leaf, Flower                      | Anti-inflammatory (6), Antifungal (5), Antispasmodic (3)                          | SKE-L, OTH-A, NER-N | Aromatic water, Decoction | Oral                | 14 A          |
| Lamiaceae    | *Nepeta rivularis* Bormm.        | Poodeneh 846                    | Leaf and flowering branches       | Antimicrobial (1), Stomachache (7), Anti-diarrhea (15)                            | OTH-A, GAS-D, GAS-D | Aromatic water | Oral                | 23 A          |
| Lamiaceae    | *Nepeta saccharata* Bunge.       | Poodeneh 847                    | Leaf and flowering branches       | Antimicrobial (2), Stomachache (5), Anti-diarrhea (14)                            | OTH-A, GAS-D, GAS-D | Aromatic water | Oral                | 21 A          |
| Lamiaceae    | *Nepeta supina* Steven           | Makhlueseh 848                 | Leaf and flowering branches       | Anti-nausea (7)                                                                   | GAS-D          | Aromatic water | Oral                | 7 A, C         |
| Lamiaceae    | *Nepeta teucrifolia* Willd.      | Poodeneh 837                    | Leaf and flowering branches       | Antimicrobial (2), Stomachache (5), Anti-diarrhea (14), Anti-nausea (8), Gastrointestinal pains (4), Carminative (3) | OTH-A, GAS-D, GAS-D, GAS-D, GAS-D, GAS-D, GAS-D, GAS-D | Aromatic water | Oral                | 36 A          |
| Lamiaceae    | *Ocimum basilicum* L.            | Reyhan 835                      | Aerial parts                      | Sore throat (2), Common cold (8), Flavoring of food (16), Digestive (5), Asthma (2) | OTH-A, RES-R, -, GAS-D, RES-R | Edible, decoction | Oral                | 33 A          |
| Lamiaceae    | *Origanum vulgare* L.            | Mirzangoo 810                   | Aerial parts                      | Carminative (2), Diuretic (3), Disinfectant (3), Flavoring of food (5)          | GAS-D, URO-L, ETH-A, OTH-A | Decoction, Poultice, mixed with food | Oral, Topical | 13 A, C       |
| Lamiaceae    | *Rydingia persica* (Burm.f) Scheen &V.A.Albort | Goldar 822                   | Leaf, Flower                      | Reduce blood sugar (26), Liver diseases (10), Leaving addiction (28), Bone and joints pains (69), Bone tonic | MET-TGAS-D, NER-N, SKE-L, SKE-L, OTH-A, | Decoction | Oral                | 254 B, C      |
| Family          | Scientific name                  | Local name (Persian); Voucher no. | Plant part used                      | Medicinal use (UR)                                                                 | ICPC category | Preparation | Mode of application | (UR) | A, B, C |
|-----------------|----------------------------------|-----------------------------------|--------------------------------------|-----------------------------------------------------------------------------------|---------------|-------------|---------------------|------|---------|
| Lamiaceae       | *Salvia compressa* Vent.          | Morporzoo 806                     | Aerial parts                         | Stomachache (47), Anti-diarrhea (25), Gastric discomfort (23), Women infection (18) | NER-N         | Decoction   | Oral                | 110  | A       |
| Lamiaceae       | *Salvia leiocarpa* Benth.         | Nowroozak 807                    | Foliage                              | Carminative (5), Stomach tonic (9)                                               | GAS-D, GAS-D  | Decoction   | Oral                | 14   | A, C    |
| Lamiaceae       | *Salvia macrocephala* Boiss.     | Mooreshak 812                    | Seed                                 | Menstrual disorders (13), Leaving addiction (16), Anti-diarrhea (5), Antibacterial (4), Carminative (2), Reduce blood sugar (4), Wound healing (7), Blood purifier (1), Respiratory infection (2), Expectorant (3) | GYN-X, NER-N, GAS-D, OTH-A, GAS-D, MET-T, DER-S, CAR-K, RES-R, RES-R | Decoction, Poultice, Oral, Topical | | 20   | A       |
| Lamiaceae       | *Salvia mirzayanii* Rech.f. & Esfand | Mourporzoo 814                  | Leaf and young branches              | Stomachache (54), Leaving addiction (11), Anti-diarrhea (46), Women infection (6) | GAS-D, NER-N, GAS-D, GYN-X | Decoction, Poultice | Oral                | 117  | A       |
| Lamiaceae       | *Stachys lavandulifolia* Vahl     | Gole moureshak 831               | Leaf                                 | Antifungal (5)                                                                 | OTH-A         | Decoction   | Oral                | 5    | A, C    |
| Lamiaceae       | *Stachys inflata* Benth.          | Gole moorshak 805                | Leaf and flower                      | Febrifuge (4), Body tonic (4), Anti-inflammatory (4), Respiratory ailments (2)    | OTH-A, OTH-A, SKE-L, RES-R | Decoction | Oral                | 14   | A       |
| Lamiaceae       | *Teucrium polium* L.             | Kalpooreh 819                   | Leaf and young branches              | Menstrual disorders (17), Bone pain (21), Child diarrhea (58), Stomachache (70), Febrifuge (34), Carminative (15), Reduce rheumatic pain (2), Anti-nausea (4), Anti-diarrhea (16), Reduce blood sugar (3), Gastrointestinal infection (23) | GYN-X, SKE-L, GAS-D, GAS-D, OTH-A, GAS-D, SKE-L, GAS-D, GAS-D, GAS-D | Decoction | Oral                | 260  | A       |
| Lamiaceae       | *Teucrium scorodum* L.           | Mayamgoli 815                   | Flowering branches                  | Stomachache (17)                                                                | GAS-D         | Decoction   | Oral                | 17   | A       |
| Lamiaceae       | *Thymus foetidus* Ronneger.      | Avishan 828                      | Leaf and flower                      | Cough (102), Expectorant (31), Common cold (65), Antibacterial (20), Sore throat (32) | RES-R, RES-R, RES-R, OTH-A | Decoction | Oral                | 240  | A       |
| Lamiaceae       | *Zataria multiflora* Boiss.      | Avishane-shirazi 807             | Leaf and young stem                  | Cough (104), Expectorant (36), Common cold (64), Sore throat (43), Antibacterial (32) | RES-R, RES-R, RES-R, OTH-A | Decoction | Oral                | 281  | A       |
| Lamiaceae       | *Ziziphora clinopodioides* Lam.  | Aghalaleh 804                    | Leaf and flower                      | Flavouring of food (30), Common cold (20), Nerve tonic (13), Relaxing (15)       | OTH-A, RES-R, NER-N, NER-N | Edible, Decoction | Oral                | 83   | A       |
| Lamiaceae       | *Ziziphora tenuior* L.           | Kakooti 803                      | Bulb                                 | Gastrointestinal pains (18), Body tonic (9), Stomach tonic (5), Flavouring of food (30) | GAS-D, OTH-A, GAS-D | Decoction | Oral                | 62   | A       |
| Liliaceae       | *Tulipa biloba* Pall.             | Laleh 1010                       | Bulb                                 | Cough (9)                                                                      | RES-R         | Powder     | Oral                | 6    | A       |
| Linaceae        | *Linum album* Ky. ex Boiss.      | Gol-sefido 604                   | Seed                                 | Prostate (3), Weight loss (2), Anorexia (4)                                     | URO-U, OTH-A, PSY-P | Infusion       | Oral                | 14   | B, C    |
| Linaceae        | *Linum usitatissimum* L.         | Ketan 606                        | Seed                                 | Prostate (3), Weight loss (2), Anorexia (4)                                     | URO-U, OTH-A, PSY-P | Infusion       | Oral                | 9    | A, C    |
| Lythraceae      | *Lawsonia inermis* L.            | Hana 1020                        | Leaf                                 | Jaundice (63), Fingernail and hair tonic (57), Ecema (18), Burn scar (21)     | GAS-D, DER-S, DER-S, DER-S, DER-S | Bath, Decoction, Poultice | Oral, Topical | 164  | A       |
| Lythraceae      | *Punica granatum* L.             | Anar 1021                        | Peel skin                            | Diuretic (3), Bronchitis (2)                                               | DER-S, RES-R | Decoction | Oral                | 77   | A       |
| Family       | Scientific name                     | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                                                                 | ICPC category             | Preparation | Mode of application | (UR) | A, B, C |
|--------------|-------------------------------------|-----------------------------------|-----------------|---------------------------------------------------------------------------------|--------------------------|-------------|---------------------|------|-------|
| Malvaceae    | Althaea aucheri Boiss.              | Khatmi 584                        | Leaf            | Laxative (30), Cough (3), Antihypertensive (7), Jaundice (15), Skin discomfort (8) | GAS-D, RES-R, CAR-K, GAS-D, DER-S | Maceration | Oral                | 63   | A     |
| Malvaceae    | Grewia tanax (Forsk.) Fiori.        | Pootoorak 570                     | Stem            | Cough (2)                                                                          | RES-R                    | Decoction   | Oral                | 2    | B, C  |
| Malvaceae    | Hibiscus sabdariffa L.              | Chay tosh 571                     | Leaf            | Antihypertensive (10)                                                             | CAR-K                    | Decoction   | Oral                | 10   | A, C  |
| Malvaceae    | Malva microcarpa Pers.              | Khatmi 574                        | Seed, Leaf      | Pain relief (13), Anti-inflammatory (10), Disinfectant (3), Jaundice (19), Infectious wound (6) | NER-N, SKE-L, OTH-A, GAS-D, DER-S | Decoction, Maceration, Poultice | Oral, Topical | 51   | A     |
| Malvaceae    | Malva neglecta Wallr.               | Khatmi safid 575                  | Seed, Leaf      | Diuretic (5), Anti-inflammatory (3)                                               | URO-U, SKE-L             | Maceration | Oral                | 8    | A, C  |
| Malvaceae    | Malva sylvestris L.                 | Khatmi 577                        | Seed, Leaf      | Heatstroke (4), Febrileghe (4), Mouth and throat protuberance (5), Cough (6)      | OTH-A, OTH-A, GAS-D, RES-R | Maceration | Oral                | 19   | A     |
| Menispermaceae | Cocculus pendulus (UR-Forst. & G.Forst) Diels | Pichakoo 1030 | Leaf            | Febrileghe (9)                                                                    | OTH-A                    | Decoction   | Oral                | 9    | B, C  |
| Moraceae     | Ficus carica L.                     | Anjir 1040                        | Fruit, Leaf     | Constipation (5), Memory improvement (3), Common cold (5), Sore throat (6)        | GAS-D, NER-N, RES-R, OTH-A | Infusion    | Oral                | 19   | B, C  |
| Moraceae     | Ficus johannis Boiss.               | Anjire dalmi 1042                 | Leaf            | Stomach tonic (15)                                                                | GAS-D                    | Decoction   | Oral                | 15   | B, C  |
| Moraceae     | Morus alba L.                       | Toot-e safid 1043                 | Fruit, Leaf     | Reduce blood sugar (2), Relaxing (2), Diuretic (1)                                | MET-T, NER-N, URO-U      | Edible      | Oral                | 11   | A     |
| Moraceae     | Morus nigra L.                      | Shahtoot 1044                     | Fruit, Leaf     | Reduce blood sugar (2), Relaxing (2), Diuretic (1)                                | OTH-A                    | Edible      | Oral                | 11   | A     |
| Myrtaceae    | Eucalyptus camaldulensis Dehnh.     | Kalitus 1700                      | Leaf            | Common cold (8), Sore throat (7), Urinary infection (2)                           | RES-R, OTH-A, URO-U      | Syrup       | Oral                | 17   | A     |
| Myrtaceae    | Myrtus communis L.                  | Moordanemeh 1050                  | Leaf, Seed      | Common cold (14), Relaxing (3), Removing the armpit odor (5)                     | RES-R, NER-N, OTH-A      | Decoction, Poultice | Oral, Topical | 22   | A     |
| Myrtaceae    | Syzygium cumini (L.) Skeels         | Jam1051                           | Ash of Leaf and seed | Blood purifier (4), Gastric discomfort (4)                                      | OTH-A, GAS-D             | Burnt ash   | Oral                | 8    | B, C  |
| Nitrariaceae | Peganum harmala L.                  | Esferd 1060                       | Fruit, Seed     | Disinfectant (52), Reduce rheumatic pain (2), Reduce blood sugar (9), bruise (18) | OTH-A, SKE-L, MET-T, SKE-L | Poultice, Decoction | Topical, Oral | 81   | A     |
| Oleaceae     | Jasminum officinale L.              | Ys safid 1065                     | Flower          | Antivirus (2), Relaxing (6)                                                       | OTH-A, NER-N             | Infusion    | Oral                | 8    | B, C  |
| Oleaceae     | Olea europea L.                     | Zeytoon 1066                      | Leaf, Fruit     | Antihypertensive (21), Bone and joint pains (5), Appetizing (2), Urinary, (5), Hair tonic (3) | CAR-K, DER-S, SKE-L, OTH-A, URO-U | Decoction, Oil, Pickle | Oral, Topical | 61   | A     |
| Oleaceae     | Olea angustifolia Glend.             | Bid alaf 1070                     | Leaf, Fruit     | Antibacterial (4)                                                                 | OTH-A                    | Decoction, Poultice | Topical, Oral | 61   | A     |
| Oleaceae     | Syringa persica L.                  | Yas 1069                          | Stem bark, Fruit | Relaxing (3)                                                                       | NER-N                    | Infusion    | Oral                | 3    | B, C  |
| Onagraceae   | Epilobium angustifolium L.           | Bid alaf 1070                     | Leaf, Fruit     | Pesticide (4), Anti-inflammation of mucosa and mouth                             | OTH-A, OTH-A, DER-S, OTH-A | Decoction, Poultice | Oral, Topical | 34   | A     |
| Family          | Scientific name                  | Local name (Persian); Voucher no. | Plant part used               | Medicinal use (UR)                                                                 | ICPC category | Preparation | Mode of application (UR) | (UR) | A, B, C |
|-----------------|----------------------------------|-----------------------------------|-------------------------------|----------------------------------------------------------------------------------|---------------|-------------|--------------------------|------|---------|
| Onagraceae      | Epilobium hirsutum L.            | Bid alfi kokee 1072               | Leaf, Root                    | (6), Wound healing (9), Heart tonic (8), Febrifuge (7)                           | CAR-K, OTH-A  | Infusion    | Oral                     | 5    | B, C    |
| Orobancheae     | Orobanche ramosa L.              | Poor 1080                        | Stem                          | Stomachache (19)                                                               | GAS-D         | Edible, Decoction        | Oral                     | 19   | B, C    |
| Papaveraceae    | Fumaria indica (Hausskn.) Pugsley. | Shatereh 1090                    | Leaf and young branches       | Anti-diarrhea (5), Anti-nausea (4), Stomachache (5)                             | GAS-D, GAS-D, GAS-D | Decoction  | Oral                     | 14   | A       |
| Papaveraceae    | Fumaria officinalis L.           | Shatereh 1091                    | Foliage                       | Blood purifier (6)                                                             | OTH-A         | Infusion    | Oral                     | 6    | A       |
| Papaveraceae    | Fumaria parviflora Lam.          | Shatereh 1093                    | Leaf and young branches       | Anti-diarrhea (3), Anti-nausea (4), Stomachache (4), Blood purifier (8), Diuretic (5), Cutaneous itching (5) | GAS-D, GAS-D, GAS-D, OTH-A, URO-U, DER-S | Decoction  | Oral                     | 25   | A       |
| Papaveraceae    | Fumaria vaillantii Loisel.        | Shatereh 1095                    | Leaf and young branches       | Anti-diarrhea (3), Anti-nausea (4), Stomachache (4)                             | GAS-D, GAS-D, GAS-D | Decoction  | Oral                     | 11   | B, C    |
| Papaveraceae    | Hypericum pendulum L.            | Shatereh 1096                    | Root, Leaf                    | Cough (3), Anti-diarrhea (2)                                                   | RES-R, GAS-D  | Decoction  | Oral                     | 5    | B, C    |
| Papaveraceae    | Papaver dubium L.                | Taryakoo 1098                    | Bulb, Leaf                    | Eczema (3), Acne (4), Anti-inflammatory (5), Bronchitis (6), Cough (5), Pain relief (3) | RES-R, DER-S, SKE-L, RES-R, RES-R, DER-S | Mixed with vinegar, Decoction | Oral, Topical, Oral | 32   | B, C    |
| Papaveraceae    | Roemeria hybrid. (L.) DC.         | Shagayeg 1099                    | Flower                        | Prevention of hair loss (24), Blood fat (5)                                     | NER-N         | Decoction | Oral                     | 9    | B, C    |
| Pedaliaceae     | Sesamum indicum L.               | Konjed 1140                      | Seed                          | Prevention of hair loss (24), Blood fat (5)                                     | DER-S, Blood-B | Decoction | Oral, Topical             | 29   | A       |
| Plantagoaceae   | Plantago amplexicaulis Cav.       | Tangbar 491                      | Leaf, Seed                    | Wound healing (5), Allergy (3), Heartstroke (2), Infectious disease (3), Stomachache (2), Respiratory ailments (2) | DER-S, OTH-A, OTH-A, OTH-A, GAS-D, RES-R, RES-R, NER-N | Poulaise, Decoction, Syrup | Topical, Oral, Oral | 17   | B, C    |
| Plantagoaceae   | Plantago ciliata Desf.           | Kowchak 493                      | Leaf, Seed                    | Antibacterial (4), Burns (9), Anti-inflammatory (2), Constipation (3)           | OTH-A, DER-S, SKE-L, GAS-D | Poulaise, Decoction, Syrup | Topical, Oral, Oral | 13   | A       |
| Plantagoaceae   | Plantago gentianoides Sm.         | Tangbar 494                      | Leaf, Seed                    | Constipation (5), Anti-inflammatory (5), Cough (4)                              | GAS-D, SKE-L, RES-R | Decoction | Oral                     | 14   | B, C    |
| Plantagoaceae   | Plantago indica L.               | Kowchak 495                      | Seed                          | Anti-inflammatory (2), Constipation (3)                                         | SKE-L, GAS-D  | Decoction | Oral, Topical, Oral      | 5    | B, C    |
| Plantagoaceae   | Plantago lanceolata L.           | Kowchak 490                      | Leaf, Root, Seed              | Baby jaundice (22), Constipation (18), Blood coagulation (3), Arthritis (4), Stomachache (8) | OTH-A, GAS-D, Blood-B, RES-R, GAS-D | Dressing, Decoction | Topical, Oral | 40   | A       |
| Plantagoaceae   | Plantago major L.                | Barhang 492                      | Aerial parts                  | Dry cough (6), Itchy throat (8), Alzheimer (5), Cancer (2), Anti-inflammatory (3), Baby jaundice (21), Cough (2), Expectorant (4), Burn healing (4) | RES-R, RES-R, NER-N, CANC, SKE-L, OTH-A, RES-R, RES-R, DER-S | Dressing, Decoction | Topical, Oral | 28   | A       |
| Plantagoaceae   | Plantago ovata Forsk.            | Tolkhim sefid 499                | Seed                          | Anti-inflammatory (2), Constipation (3)                                         | SKE-L, GAS-D  | Decoction | Oral, Topical             | 5    | B, C    |
| Plantagoaceae   | Veronica anagallis L.            | Sizab 489                        | Aerial parts                  | Stomach tonic (10), Diuretic (7)                                               | GAS-D, URO-U  | Decoction | Oral                     | 17   | B       |
| Family         | Scientific name          | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR) | ICPC category | Preparation | Mode of application (UR) | (UR) | A, B, C |
|----------------|--------------------------|----------------------------------|-----------------|---------------------|----------------|-------------|----------------------------|------|---------|
| Platanaceae    | Platanus orientalis L.    | Chenar 487                       | Fruit, Root, Leaf, Stem bark | Acne (3), Snakebite (3), Hoarseness (2) | DER-S, DER-S, OTH-A | Poultice, Decoction | Oral, Topical                | 8    | B, C    |
| Plumbaginaceae | Acantholimon scorpius (Jaub.&Spach) Boiss | Kharposht 511 | Root | Livestock wound healing (6), Washing powder (10) | DER-S, OTH-A | Poultice, Powder | Topical                   | 16   | B, C    |
| Poaceae        | Avena sativa L.           | Jow dosar 334                    | Leaf, Seed | Disinfectant (3) | OTH-A | Decoction | Topical                   | 3    | B, C    |
| Poaceae        | Cymbopogon schoenanthus (L.) Spreng. | Kaboo 335                       | Leaf and stem | Body tonic (4) | OTH-A | Decoction | Oral                      | 4    | B, C    |
| Poaceae        | Cynodon dactylon (L.) Pers. | Marg 337                        | Aerial parts | Anti-diarrhea (3), Asthma (2) | GAS-D, RES-R | Decoction | Oral                      | 8    | B, C    |
| Poaceae        | Desmostachya bipinnata (L.) Stapf | Kerteh 339                      | Root | Body tonic (4) | OTH-A | Decoction | Oral                      | 4    | B, C    |
| Poaceae        | Hordeum distichon L.      | Jow 329                          | Fruit | Febrifuge (2), Reducing thirst (3) | OTH-A, OTH-A | Decoction | Oral                      | 7    | B, C    |
| Poaceae        | Hordeum vulgare L.        | Jow 328                          | Fruit | Reduce blood sugar (3) | MET-T | Decoction | Oral                      | 7    | A       |
| Poaceae        | Melica persica Kunth      | Oshlom 325                       | Aerial parts | Washing powder (7) | OTH-A | Powder | -                         | 7    | B, C    |
| Poaceae        | Phragmites australis (Cav.) Trin. ex Steud. | Nee 324                       | Root and Rhizome | Breast milk reduction (5) | OTH-A | Pickle | Oral                      | 5    | A, C    |
| Poaceae        | Setaria italica (L.) P. Beauv. | Garch 340                       | Seed | Hair tonic (5), Carminative (2) | DER-S, GAS-D | Poultice, Decoction | Topical, Oral                | 7    | A       |
| Poaceae        | Sorghum halpense (L.) Pers. | Garch 342                       | Seed | Diuretic (6) | URO-U | decoction | Oral                      | 5    | A       |
| Poaceae        | Triticum aestivum L.      | Gandom 345                      | Oil of seed | Eczema (6) | DER-S | Poultice | Oral                      | 6    | B, C    |
| Poaceae        | Zea mays L.               | Zorat 347                       | Style | Kidney stone (27) | URO-U | Decoction | Oral                      | 37   | A, C    |
| Polygonaceae   | Polygonum persicaria L.   | Bandkash 430                    | Leaf and flower | Asthma (8), Constipation (5) | RES-R, GAS-D | Infusion, Oil, Aromatic water | Oral | 13 | B, C |
| Polygonaceae   | Pteropyrum acheri Jaub. and Spach | Perent 425                    | Foliage | Acne (4), Infectious wounds (5) | DER-S, ER-S | Poultice | Topical                   | 9    | B, C    |
| Polygonaceae   | Rheum ribes L.            | Rohoo 432                       | Aerial parts | Reduce blood sugar (5), Stomach and liver tonic (3), Appetizing (2), Laxative (6), Blood purifier (3), Vermicide (2), Bone tonic (4), Sight Enhancement (6) | MET-T, GAS-D, OTH-A, GAS-D, OTH-A, GAS-D, SKE-L, EYE-F | Decoction | Oral                      | 31   | B, C    |
| Polygonaceae   | Rumex crispus L.          | Torshak 437                     | Aerial parts | Laxative (4), Acute pulmonary embolism (7), Detoxifiant of body (5) | GAS-D, RES-R, GAS-D | Decoction | Oral                      | 16   | B, C    |
| Polygonaceae   | Rumex vesicarius L.       | Torshak 438                     | Leaf and petiole | Reduce blood sugar (2) | GAS-D | Vegetable | Oral                      | 2    | A       |
| Portulacaceae  | Portulaca oleracea L.     | Gholleh 561                     | Leaf, Seed | Stomach tonic (1), Reducing thirst (2), Febrifuge (1), Cough (6), Blood purifier (12) | GAS-D, OTH-A, RES-R, OTH-A | Vegetable | Oral                      | 21   | B, C    |
| Primulaceae    | Anagallis arvensis L.     | Delpasand 1145                 | Aerial parts | Liver cysts (4), Urinary stones (4) | GAS-D, URO-U | Infusion | Oral                      | 8    | A       |
| Primulaceae    | Lysimachia maritima (L.) Galasso, Banfi & Soldano. | Shaibdari 1147 | Whole plant | Antispasmodic (5), Bronchitis (3) | NER-N, RES-R | Decoction | Oral                      | 8    | B, C    |
| Family       | Scientific name                        | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                                                                 | ICPC category                      | Preparation | Mode of application (UR) | (UR) | A, B, C |
|-------------|----------------------------------------|-----------------------------------|-----------------|-----------------------------------------------------------------------------------|------------------------------------|-------------|--------------------------|------|---------|
| Primulaceae | Primula capilliflora Boiss.            | Pamchoo 1149                      | Root and flower | Vermicide (4), Antispasmodic (8)                                                  | GAS-D, NER-N                      | Aromatic water | Oral                    | 12   | B, C    |
| Primulaceae | Samolus vanderlandi L.                 | Alaf 1150                         | Aerial parts    | Body tonic (4)                                                                     | OTH-A                              | Decoction    | Oral                    | 4    | A       |
| Pteridaceae | Adiantum capillus-veneris L.           | Siahlingoo 1170                   | Leaf            | Common cold (49), Expectorant (51), Relaxing (3), Menstrual disorders (2), Earache (3) | RES-R, RES-R, NER-N, GYN-X, Ear-H | Decoction    | Oral                    | 110  | A, C    |
| Ranunculaceae | Adonis aestivalis L.                      | Chashm gargavo 1180               | Whole plant     | Anti-inflammatory (5)                                                              | SKE-L                              | Decoction    | Oral                    | 5    | B, C    |
| Ranunculaceae | Adonis microcarpa DC.                    | Chashm gargavo 1182               | Flower          | Anti-inflammatory (3)                                                              | SKE-L                              | Decoction    | Oral                    | 3    | B, C    |
| Ranunculaceae | Anemone billora DC.                       | Shagayeg neman 1185               | Flower          | Common cold (6)                                                                    | RES-R                              | Decoction    | Oral                    | 6    | B, C    |
| Ranunculaceae | Clematis katharina Boiss.                | Chaspakoo 1187                    | Aerial parts    | Diuretic (3), Joint pain (3), Headache (3), Eczema and psoriasis (3)              | URO-U, SKE-L, NER-N, DER-S         | Decoction    | Oral                    | 12   | A       |
| Ranunculaceae | Consolida rugulosa (Boiss.) Schrödinger | Zaban moocho 1189                | Aerial parts    | Anti-inflammatory (4)                                                              | SKE-L                              | Decoction    | Oral                    | 4    | B, C    |
| Ranunculaceae | Nigella sativa L.                       | Siahdaneh 1190                    | Seed            | Blood pressure (7), Blood fat (7), Asthma (2)                                     | CAR-K, Blood-B, RES-R              | Infusion     | Oral                    | 16   | B, C    |
| Ranunculaceae | Ranunculus arvensis L.                   | Alaleh 1192                       | Flower          | Urinary disease (3)                                                                | URO-U                              | Aromatic water | Oral                    | 3    | B, C    |
| Ranunculaceae | Ranunculus muricatus L.                  | Alaleh 1193                       | Root, Leaf, Flower | Skin diseases (2)                                                                  | DER-S                              | Poultice     | Topical                 | 2    | B, C    |
| Ranunculaceae | Thalictrum minus L.                      | Sadabi 1195                       | Aerial parts    | Gastric discomfort (4)                                                            | GAS-D                              | Decoction    | Oral                    | 4    | A       |
| Resedaceae  | Ochradenus aucheri Boiss.                | Kolitim 1200                      | Leaf            | Parasite repellent (2), Wound healing (3)                                         | GAS-D                              | Decoction, Poultice | Oral                   | 5    | B, C    |
| Resedaceae  | Reseda aucheri Boiss.                    | Varas 1205                        | Leaf            | Laxative (1), Diuretic (3), Reducing thirst (3)                                   | GAS-D, URO-U, OTH-A                 | Decoction, Row | Oral                   | 5    | B, C    |
| Rhamnaceae  | Rhamnus persica Boiss. & Hohen            | Titoomari 1210                    | Fruit           | Anti-diarrhea (11)                                                                | GAS-D                              | Decoction    | Oral                    | 11   | B, C    |
| Rhamnaceae  | Rhamnus prostrata Jacq.                  | Titoomari 1211                    | Fruit           | Anti-diarrhea (5)                                                                 | GAS-D                              | Decoction    | Oral                    | 5    | B, C    |
| Rhamnaceae  | Sageretia thea (Osbeck) M.C. Johnst. Ch. | Bastel 215                        | Fruit           | Laxative (2), Blood purifier (2)                                                  | GAS-D, CAR-K                       | Decoction    | Oral                    | 4    | A       |
| Rhamnaceae  | Ziziphus jujuba Mill.                    | Annab 1218                        | Fruit           | Bronchitis (3), Common cold (4), Laxative (20)                                    | RES-R, RES-R, GAS-D                 | Infusion, Edible | Oral                   | 24   | B, C    |
| Rhamnaceae  | Ziziphus nummularia (Burn.)Wight & Am.   | Konar 1220                        | Leaf            | Common cold (3), Antimicrobial (1)                                                | RES-R, OTH-A                       | Decoction, Poultice | Oral, Topical        | 4    | A       |
| Rhamnaceae  | Ziziphus spin-christi (L.) Desf.         | Konar 1221                        | Leaf, Fruit     | Stomach tonic (5), Hair tonic (4), Infectious tuber (2), Skin rash (7)            | GAS-D, DER-S, DER-S, DER-S          | Decoction, Poultice | Oral, Topical        | 18   | A       |
| Rosaceae    | Agrimonia eupatoria L.                   | Ghafes 370                        | Aerial parts    | Wound healing (18), Fatty liver (8), Anti-diarrhea (7)                            | DER-S, GAS-D, GAS-D                | Poultice, Decoction | Topical                | 33   | A, C    |
| Rosaceae    | Amygdalus elaeagnifolia                 | Arjan 372                         | Stem, Fruit     | Nuts (18), Eczema (7)                                                             | OTH-A, DER-S                       | Burning of shampoo | Oral                   | 25   | B, C    |
| Family | Scientific name | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR) | ICPC category | Preparation | Mode of application (UR) A, B, C |
|--------|-----------------|----------------------------------|-----------------|-------------------|----------------|-------------|---------------------------------|
| Rosaceae | Amygdalus wendelboi Freitag | Archen 373 | Latex | Eczema (4), Bone and joint pains (3) | DER-S | semi dried wood, Edible | Topical |
| Rosaceae | Cotoneaster kotschyi (C.K.Schneid.) G. Noé | Siahchoo 375 | Leaf, Leaf | Jaundice (5), Constipation (6), Dry cough (4) | GAS-D, GAS-D, RES-R | Infusion Oral | 15 A |
| Rosaceae | Crataegus ambigua C.A.Mey. ex A. K.Beer | Kalkoohi 365 | Leaf, Fruit, Flower | Relaxing (5), Spasms (4), Cardiac distress (4), Hypertension (4), Anti-diarrhea (7) | NER-N, NER-N, CAR-K, CAR-K, GAS-D | Decoction, Salad Oral | 24 B, C |
| Rosaceae | Crataegus azarolus L. | Kalkoohi 380 | Leaf and Fruit | Antihypertensive (6), Relaxing (11), Antispasmodic (10), Cardiac distress (5) | CAR-K, NER-N, NER-N, CAR-K | Decoction Oral | 32 A |
| Rosaceae | Crataegus meyer Pojark. | Kalkoohi 381 | Leaf, Fruit, Flower | Relaxing (5), Spasms (4), Cardiac distress (4), Antihypertensive (4) | | | |
| Rosaceae | Cydonia oblonga Mill. | Beh 351 | Seed | Sore throat (4) | OTH-A | Decoction Oral | 4 B, C |
| Rosaceae | Prunus dulcis (Mill.) D.A.Webb | Badam-e shirin 353 | Seed | Hair tonic (5), Preventing of hair loss (9) | DER-S, DER-S | Oil Topical | 14 B, C |
| Rosaceae | Prunus eburnea (Spach) Aitch. & Hemsl. | Archen 354 | Fruit, Gum | Bone and joint pains (6), Allergies (5), Hair tonic (3) | OTH-A, DER-S | Decoction, Poultice Oral, Topical | 14 B, C |
| Rosaceae | Prunus lycioides (Spach) C.K.Schneid. | Badame koochi 355 | Leaf and Fruit | Preventing of hair loss (5) | DER-S | Poultice, Oil Topical | 8 B, C |
| Rosaceae | Prunus mahaleb L. | Mahlab 356 | Leaf bark | Relaxing (5), Liver cysts (4), Parasite repellent (4), Joint pain (4) | NER-N, GAS-D, GAS-D, SKE-L | Decoction, Dressing Oral, Topical | 17 A |
| Rosaceae | Prunus orientalis (Mill.) Koehne | Archen 357 | Fruit | Bone and joint pains (6), Allergies (5), Hair tonic (3) | OTH-A, DER-S | Decoction, Poultice Oral, Topical | 14 B, C |
| Rosaceae | Prunus persica (L.) Batsch | Holo 358 | Fruit | Laxative (8) | GAS-D | Nuts, Maceration Oral | 6 B, C |
| Rosaceae | Prunus scaparia (Spach) C.K.Schneid. | Badame koochi 376 | Seed | Anti-dandruff (29), Preventing of hair loss (27), Earache (3), Health and beauty of the skin (8), Cancer prevention (3), Burned wound healing (4) | DER-S, DER-S, Ear-H, DER-S, CANC, DER-S | Poultice, Nut, Oil Topical, Oral | 74 B |
| Rosaceae | Prunus avium (L.) L. | Gilas 378 | Pedicel | Stomach tonic (4) | GAS-D | Decoction Oral | 24 A, C |
| Rosaceae | Prunus cerasus L. | Albaloo 359 | Pedicel | Kidney stone (7) | URO-U | Decoction Oral | 5 A, C |
| Rosaceae | Rosa beggeriana Schrenk ex Fisch. & C.A.Mey. | Roz sefid 360 | Flower | Stomach tonic (5), Relaxing (8) | GAS-D, NER-N | Decoction Oral | 13 B, C |
| Rosaceae | Rosa canina L. | Korik 362 | Leaf, Flower | Relaxing (5) | NER-N | Decoction Oral | 5 B, C |
| Rosaceae | Rosa damascena Herm. | Gole mohammadi 374 | Flower | Flavoring of food (8), Laxative (25), Nervous tonic (43) | OTH-A, GAS-D, NER-N | Aromatic water Oral | 76 B, C |
| Family       | Scientific name                                | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                  | ICPC category | Preparation | Mode of application | (UR) | A, B, C |
|--------------|------------------------------------------------|----------------------------------|-----------------|-------------------------------------|---------------|-------------|---------------------|------|---------|
| Rosaceae     | *Rosa moschata* Herrm.                         | Korrik 377                       | Flower          | Nervous tonic (3)                   | NER-N         | Decoction   | Oral                | 3    | B, C    |
| Rosaceae     | *Rubus caesius* L.                             | Saghder 371                      | Leaf, Fruit     | Laxative (14)                       | GAS-D         | Decoction, Syrup | Oral                | 14   | A       |
| Rosaceae     | *Sanguisorba minor* Scop.                      | Gheitaran 379                    | Fruit           | Common cold (3), Relaxing (4), Cough (4), Jaundice (5), Toothache (6) | RES-R, NER-N, NER-N, GAS-D, GAS-D | Decoction | Oral                | 32   | A       |
| Rubiaceae    | *Placoma aucheri* (Guill.) M.Baklud & Thulin   | Khargo 15:20                     | Foliage         | Bone and joint pain (3), Reduce rheumatic pain (2), Reduce blood sugar (3), Digestive (3) | SKE-L, SKE-L, MET-T, GAS-D | Decoction, Infusion, Poultice | Topical, Oral | 11   | B, C    |
| Rubiaceae    | *Rubia albicaulis* Boiss.                      | Roomask 523                     | Fruit           | Bone tonic (4), Constipation (3)     | SKE-L, GAS-D  | Decoction, Infusion | Oral                | 7    | B, C    |
| Rubiaceae    | *Rubia tinctorum* L.                           | Roomask 524                     | Root            | Bone tonic (4), Constipation (3)     | SKE-L, GAS-D  | Decoction, Infusion | Oral                | 7    | B, C    |
| Rutaceae     | *Citrus aurantium* L.                          | Nareng 527                      | Flower          | Anti-diarrhea (5), Relaxing (8), Eye diseases (8), Traditional kohl (3) | GAS-D, NER-N, EYE-F | Decoction, Kohl | Oral                | 24   | B, C    |
| Rutaceae     | *Citrus limon* (L.) Osbeck                     | Limoo torsh 528                 | Fruit, Seed     | Eye diseases (1:5), Traditional kohl (3) | EYE-F         | Juice, Kohl | Eye Drop            | 18   | B, C    |
| Rutaceae     | *Haplophyllum robustum* Bunge                  | Sadoo 530                       | Aerial parts    | Gastric discomfort (1)               | GAS-D         | Decoction   | Oral                | 1    | B, C    |
| Rutaceae     | *Haplophyllum tuberculatum* Juss.              | Gahich 531                      | Aerial parts    | Febrifuge (2), Headache (2)          | GAS-D, NER-N  | Decoction, Poultice | Oral, Topical      | 4    | A       |
| Rutaceae     | *Ruta graveolens* L.                           | Soddab 535                      | Leaf            | Urinary stone (6)                    | URO-U         | Decoction   | Oral                | 6    | A       |
| Salicaceae   | *Populus alba* L.                              | Sepidar 600                     | Stem bark and leaf | Blood purifier (4), Pain relief (3) | OTH-A, NER-N  | Decoction   | Oral                | 7    | A       |
| Salicaceae   | *Populus euphratica* Oliv.                     | Senexbar 601                    | Stem bark       | Parasite repellent (7)              | GAS-D         | Decoction   | Oral                | 4    | A       |
| Salicaceae   | *Salix aegyptiaca* L.                          | Beedmeshk 605                   | Inflorescence   | Laxative (3), Anti-diarrhea (2), Gastrointestinal pains (2), Menstruation pains (3) | GAS-D, GAS-D, GAS-D, GYN-X | Decoction, Aromatic water | Oral                | 10   | A       |
| Salicaceae   | *Salix alba* L.                                | Beed 606                        | Stem bark, Leaf | Febrifuge (2:1), Common cold (6)     | OTH-A, RES-R  | Decoction, Aromatic water | Oral                | 27   | A       |
| Salvadoraceae| *Salvadora oleaoides* Decne.                   | Pir 1230                        | Fruit           | Appetizing (7), Laxative (4), Parasite repellent (10), Hemosroids (4), Bronchitis (3) | OTH-A, GAS-D, GAS-D, CAR-K, RES-R | Decoction, Edible | Oral                | 28   | B, C    |
| Salvadoraceae| *Salvadora persica* L.                         | Chooch1231                      | Fruit           | Appetizing (5), Expectorant (8)      | OTH-A, RES-R  | Decoction, Edible | Oral                | 15   | B, C    |
| Scrophulariaceae | *Scrophularia scopoli* Hoppe ex Pers.     | Makhliseh 842                   | Young stem, Fruit | Waist pain (3), Respiratory diseases (2) | OTH-A, SKE-L  | Poultice, Decoction | Topical, Oral      | 5    | A, C    |
| Scrophulariaceae | *Scrophularia striata* Boiss.                  | Makhliseh 840                   | Fruit           | Gastric discomfort (2), Respiratory diseases (2), Waist pain (3), Wound healing (2) | GAS-D, RES-R, OTH-A, DER-S | Decoction, Poultice | Oral, Topical       | 9    | A, C    |
| Solanaceae   | *Datura stramonium* L.                         | Tatooreh 1250                  | Leaf, Seed      | Sexual tonic (6), Bone and joint pains (8), Reduce rheumatic pain (5), Asthma (5), Cough (4), Burn (5) | OTH-A, SKE-L, SKE-L, RES-R, RES-R, DER-S | Decoction, Poultice | Oral, Topical       | 33   | B, C    |
| Solanaceae   | *Hyoscyamus reticulatus* L.                    | Bonji 1255                      | Aerial parts    | Pain relief (9), Leaving addiction (9), Narcotic (15) | NER-N, NER-N, RES-R | Infusion     | Oral                | 33   | A, C    |
| Family       | Scientific name                     | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)          | ICPC category | Preparation  | Mode of application (UR) A, B, C |
|--------------|-------------------------------------|----------------------------------|----------------|-----------------------------|---------------|--------------|----------------------------------|
| Solanaceae   | Hyoscyamus senecionis Willd.        | Bangdaneh 1256                   | Flower         | Pain relief (8)             | NER-N         | Decoction    | Oral                             | 8                      |
| Solanaceae   | Hyoscyamus squarrosus Griff.        | Bangdaneh 1257                   | Whole plant    | Pain relief (8)             | NER-N         | Decoction    | Oral                             | 8                      |
| Solanaceae   | Lycium barbarum L.                  | Zeel 1260                        | Fruit          | Sleeplessness (4)           | NER-N         | Eat as fruit | Oral                             | 8                      |
| Solanaceae   | Lycium depressum Stocks             | Zeel 1261                        | Fruit          | Antiinflammatory (11)       | OTH-A, NER-N  | Decoction    | Oral                             | 11 B                   |
| Solanaceae   | Lycium shawii Roem. & Schult.       | Dahir 1262                      | Leaf           | Vision enhancement (2)      | EYE-F         | Crushed Juice | Topical                          | 2                      |
| Solanaceae   | Physalis allegheni L.               | Aroosak-e posht-e pardeh 1265   | Fruit          | Kidney diseases (3), Laxative (5), Expectorant (2) | OTH-A, GAS-D, RES-R | Edible | Oral                             | 10 B, C                |
| Solanaceae   | Solanum nigrum var. villosum L.     | Roopas 1268                      | Fruit          | Feverish (6), Blood coagulation (5), Pain relief (4) | OTH-A, Blood-B, NER-N | Decoction | Oral                             | 15 A                   |
| Solanaceae   | Solanum lycopersicum L.             | Gewjeh 1251                      | Fruit          | Infectious wounds (5)       | DER-S         | Poultice     | Topical                          | 5                      |
| Solanaceae   | Withania somnifera (L.) Dunal       | Kahkenn 1270                     | Aerial parts   | Nerve tonic (5)             | NER-N         | Decoction    | Oral                             | 5                      |
| Tamaricaceae | Tamarix aphylla (L.) Karst.          | Koor gaz 1350                    | Latex of burning stem | Eczema (16), Skin disease (8) | DER-S, DER-S | Poultice | Topical                          | 24 B, C                |
| Tamaricaceae | Tamarix kotchyli Bunge               | Gole kist 1351                   | Latex of burning stem | Eczema (16), Skin disease (8) | DER-S, DER-S | Poultice | Topical                          | 24 B, C                |
| 1Thymelaeace | Daphne mucronata Royale             | Terveet 704                      | Leaf           | Influenza (3), Arthritis (3), Blood cancer (1) | MET-T, RES-R, SKE-L, CANCE | Decoction, Dressing | Oral, Topical                   | 7 A                    |
| Thymelaeace  | Daphne oeleoides Schreib.           | Terveet 705                      | Foliage        | Traditional dyeing (10), Natural color for textile (10) | OTH-A, OTH-A | Decoction, Fume | -                                | 24 B, C                |
| Thymelaeace  | Daphne stapfi Bornm. & Keisslere.   | Terveet 706                      | Fruit          | Influenza (3), Arthritis (3) | MET-T, RES-R, SKE-L | Decoction, Fume, Poultice | Oral, Inhale, Topical            | 6 B, C                  |
| Thymelaeace  | Diarthron lessertii (Wikstr.) Kit Tan | Gole bidli 708                  | Leaf and flowering branches | Stomachache (2), Stomach and liver tonic (2), Arthritis (2) | GAS-D, GAS-D, SKE-L | Aromatic water | Oral, Topical                   | 6 B, C                  |
| Urticaceae   | Parietaria judaica L.               | Goohe Moosh 323                  | Leaf and flower | Diuretic (3), Acute pulmonary embolism (4) | URO-U, RES-R | Decoction | Oral                             | 7                      |
| Urticaceae   | Urtica dioica L.                    | Soosonakoo 320                   | Leaf and flower | Urinary stone (7), Reduce blood sugar (4) | URO-U, MET-T | Infusion | Oral                             | 11 A                   |
| Urticaceae   | Urtica usara L.                     | Soosonakoo 321                   | Aerial parts   | Furcifuge (5), Gastrointestinal pains (4), Relieving (2), Antony parasite (2), Toothache (3) | OTH-A, GAS-D, NER-N, GAS-D | Decoction, Aromatic water | Oral                             | 15 B, C                |
| Violaceae    | Viola odorata L.                    | Gol-e banafa sheh 1370           | Leaf and flower | Laxative (8), Chronic cough (5), Expectorant (3) | GAS-D, RES-R, RES-R | Decoction | Oral                             | 16 B, C                |
| Family          | Scientific name                          | Local name (Persian); Voucher no. | Plant part used | Medicinal use (UR)                                      | ICPC category | Preparation Mode of application | (UR) | A, B, C |
|-----------------|------------------------------------------|-----------------------------------|-----------------|--------------------------------------------------------|---------------|---------------------------------|-------|--------|
| Verbenaceae     | Verbena officinalis L.                   | Shahpasand 1380                   | Aerial parts    | Fiebrufuge (3), Nerve tonic (7)                         | OTH-A, NER-N  | Poultice, Decoction             | Topical | 10 A   |
| Vitaceae        | Vitis vinifera L.                        | Maviz 1390                        | Dried Fruit     | Memory improvement (5)                                 | NER-N         | Nuts                            | Oral   | 5 A    |
| Xanthorrhoeaceae| Aloe vera (L.) Burm.f.                   | Alovera 1500                      | glazed materials| Diabetic wound (7), Eczema (22)                        | DER-S, DER-S  | Poultice                         | Topical | 29 A   |
| Xanthorrhoeaceae| Asphodelus tenuifolius Cav.              | Peermazoo 1505                    | Seed            | Diuretic (15)                                          | URO-U         | Decoction                       | Oral   | 17 A   |
|                 |                                          |                                   | Root            | Herbal adhesive (2)                                    | OTH-A         | Crushed extract                 | -      |        |
| Xanthorrhoeaceae| Eremurus kopetdaghensis M.Pop.ex B.Redtch.| Horishoo 1510                    | Root, Leaf and flower | Herbal adhesive (4), Vegetable (8), Jaundice (6), Liver Disease (5), Disinfectant (4) | OTH-A, OTH-A, GAS-D, GAS-D, OTH-A | Vegetable, Decoction, Poultice | Topical, Oral | 27 B, C |
|                 |                                          |                                   | Flower          | Flavoring of food (15), Laxative (6), Herbal adhesive (4), Vegetable (7), Disinfectant (3), Jaundice (8), Liver and kidney Disease (2) | OTH-A, GAS-D, OTH-A, OTH-A, GAS-D, GAS-D | Powder, Vegetable, Decoction, Poultice | Topical, Oral | 52 B, C |
| Zygophyllaceae  | Fagonia bruguieri DC.                    | Alaf kharoo 1550                  | Aerial parts    | Appetizing (2), Vermicide (2), Carminative (5)         | GAS-D         | Powder                           | Oral   | 9 A    |
| Zygophyllaceae  | Tribulus terrestris L.                   | Kharkhesak 1555                   | Aerial parts    | Kidney stone (43)                                      | GAS-D         | Decoction                       | Oral   | 43 A   |
| Zygophyllaceae  | Zygophyllum eurypterum Boiss. & Buhse.   | Gich 1560                         | Seed            | Lactiferous (4), Anti-nausea (3), Stomach tonic (4), Laxative (4), Vermicide (3) | PRE-W, GAS-D, GAS-D, GAS-D, GAS-D | Decoction | Oral   | 18 B, C |
| Zygophyllaceae  | Zygophyllum fabago L.                    | Gich 1561                         | Seed            | Lactiferous (4), Anti-nausea (3), Stomach tonic (4), Laxative (4), Vermicide (3) | PRE-W, GAS-D, GAS-D, GAS-D, GAS-D | Decoction | Oral   | 18 B, C |

C: indicate the medicinal plants which reported in this region for the first. A: indicate the ethno-medicinal uses of the medicinal plants which quoted in the in the Persian ethnobotany. B: was not quoted in the in the Persian ethnobotany.
development of natural and traditional products, could play an important role in shaping people’s inclination towards traditional medicine [34]. Moreover, the medicinal plants’ availability, low cost, positive experiences, and reliable Iranian references like Avicenna could be the other reasons to form positive attitudes. Kerman province is a pivotal state in the ancient Iran (Persia) and it is estimated that the human civilization emerged from Jiroft in the south of this province [11]. Therefore, with a rich history, it has developed a sound traditional health care system.

**Plant parts used**
To prepare crude drugs (Fig. 3) from 15 plant parts, the most common plant parts used were leaf, flower, fruit, and seeds with 26.03, 15.36, 13.85, and 12.73 percentages, respectively. According to many reports, the leaf is the most common medicinal plant part used in the ethnopharmacological applications [35, 36]. Field discussion and other similar reports [30] indicated that availability, abundance, efficiency of use, and attention to the conservation points are the main reasons for the maximum usage of the leaves by local healers. In fact, local informants believed that different parts of the medicinal plants could have different therapeutic effects. In other words, plant organs have received varying degrees of attention based on traditional herbal medicine experiences of the ethnic communities. For instance, the root of *Berberis integerrima* is decocted and taken orally to treat diabetes while its leaf is used to treat hypertension. In addition, latex of *Calotropis procera* was used to cure eczema but its leaf is taken in the form of poultice to treat bruise and diabetes.

**Preparation and application modes**
The medicinal herbs were prepared in 14 forms including decoction, poultice, infusion, aromatic water, powder, vegetable, maceration, syrup, mask, fume, brush,
and shampoo by local communities. The most common form of the crude drug was decoction (52.99%), followed by poultice (18.32%) and infusion (7.56%) (Fig. 4). The local informants of Kerman province believed that by decocting the medicinal plants parts, their extract becomes more concentrated and obtains better taste and stronger efficacy. Based on various reports [9, 16, 37–40], decoction is the most common method to prepare herbal medicine.

The medicinal drugs administrated in six categories included oral, topical, dressing, eye drop, inhale, and bath. Analyzing the ethnobotanical data showed that the most common administration route was oral, followed by topical (Fig. 5). Other ethnobotanical studies in Iran and other countries revealed that ethnic communities mostly prefer these two methods of preparation [5, 10, 41]. But some plant species such as Lawsonia inermis, Juniperus excels, Rhazya stricta, and Pistacia atlantica are utilized in both topical and oral administration routes. For example, bath with the aqueous extract of Lawsonia inermis leaves is known as an effective method for the treatment of jaundice. The poultice of this plant is used to cure skin disorders like eczema and wound scar while its root is decocted and used orally as a diuretic and for the treatment of bronchitis.

Informant consensus factors (ICF)
The ICF values for different ailment categories treated by the local informants in this survey ranged from 0.25 to 0.92 (Table 4). Endocrine (diabetes), dermatology, gastrointestinal, and respiratory with 0.92, 0.91, 0.90, and 0.89 ICF, respectively, were ranked as the most popular ailment categories for medicinal plants in this region. Diabetes disorder scored the highest ICF (0.92). This unexpected result is due to the high use report of few medicinal plants for treating diabetes mellitus such as Citrullus colocynthis, Berberis integerrima, and Tecomella undulata with 91, 61, and 41 use reports, respectively. In this case, C. colocynthis, a reputed medicinal plant in Kerman province, is well known due to its anti-diabetic properties [42]. Moreover, in this case, the locals extremely used the root of Berberis integerrima and stem bark of T. undulata in treating diabetes mellitus. Field surveys and discussion with herbalists revealed that stress caused by poor economic conditions and job pressures can be one of the reasons for the high prevalence of diabetes in this region, but it needs more investigation.

Second ICF was found in dermatological ailment category with 1563 use reports. These findings are due to high use reports for plant species such as Calotropis procera, Pergularia tomentosa, Rhazya stricta, and Tecomella undulata in the treatment of eczema, wound healing, and other skin disorders. High ICF of dermatological disorders in this region might be due to high and long-term sunlight exposure, which caused skin disorders [10]. In addition, based on the field surveys, some environmental problems such as dust and wind associated with the particles of sands especially in the cities of Shahdad, Roodbar, Bam, Baravat, Qale Ganj, and Fahraj can be considered critical risk factors. Heidari et al. reported that the main reason for the skin diseases in the desert areas of the Kerman province like city of Bam is the dusty winds [43].

The third highest ICF (0.90) was found in gastrointestinal ailment category for 243 medicinal plant species. Species like Artemisa spp. Glycyrrhiza glabra and Nepeta cataria were typical medicinal herbs for
gastrointestinal disorders. Such findings indicated the rich and high level of informant consensus on the variety of medicinal herbs used to treat gastrointestinal ailments, and confirmed the prevalence of gastrointestinal ailments among people who lived in a specific region [30]. Moreover, ITM (e.g., Canon) has attracted considerable attention for the treatment of gastrointestinal disorders [44, 45]. Several studies in Iran and other countries reported that the species *Nepeta cataria* [46, 47], *Glycyrrhiza glabra* [48, 49], and *Artemisia spp.* [50, 51] were traditionally used to treat gastrointestinal diseases.

The 4th disease category with ICF value of 0.89 was respiratory disorders. *Zataria multiflora*, *Thymus fedtschenkoi*, and *Cionura erecta* were major plant species for cough with 104, 102, and 87 use reports, respectively. The large number of use reports for respiratory disorder category might be attributed to undesirable working conditions of local populations, like agriculture and husbandry in the dry and dusty regions without quick access to the health care systems. In confirmation of the present findings, Khanjani et al. studied the relationship between air pollution and respiratory diseases in Kerman from 2006 to 2010 and reported that sandstorms and the dust content increase of the atmosphere exacerbate respiratory diseases in this region [52].

**Use report**

Medicinal plants of the families Lamiaceae (such as *Nepeta cataria* and *Zataria multiflora*), Asteraceae (like *Artemisia persica* and *Launaea acanthodes*), and Apio-ceae (such as *Bunium persicum*) had the largest number of use report in this area. Bibak and Moghbeli, and Sadat-Hosseini et al. studied the medicinal plants of the Jiroft and Kanaj in the south of Kerman and, similar to the findings of the current study, confirmed the importance of traditional medication of these three families [10, 16]. In addition, plant species of the Apocynaceae family (like *Cionura erecta*, *Rhzaya stricta*, and *Calotropis procera*) were ranked with a high use report. In this case, *Cionura erecta* is a well-known medicinal plant in the southern regions of Kerman for the treatment of sore throat and cough with no official records.

**Cultural importance and relative frequency of citation index**

The highest CI was found for *Nepeta cataria*, *Zataria multiflora*, *Teucrium polium*, *Rydinigia persica*, and *Thy- mus fedtschenkoi*. The second highest CI was found for *Dracocephalum polychaetum* and *Pistacia atlantica*. These findings revealed that the first CI of the medicinal plants in Kerman province belonged to the Lamiaceae family. Additionally, *Pistacia atlantica* was ranked as an important medicinal plant with high CI index in this region. High CI values show that these medicinal plants are either highly utilized, or their uses are rising in traditional herbal medicine in a specific region [53].

However, for the RFC index, *Lawsonia inermis*, *Arte- misia persica*, *Zataria multiflora*, and *Nepeta cataria* were classified as the first rank. In other words, the mentioned medicinal plants were referred by most of the informants. RFC value specifies the usefulness of medicinal plant species [5]. Table 5 shows the ranking based on each index (CI and RFC) for 20 dominant medicinal plant species with the highest CI and RFC indices.

Based on the independent samples t-test, women had more knowledge about the medicinal plants ($t = 1.87$, $p = 0.04$). Based on the field surveys, women in Kerman province are the preparers of the plant species for the medicinal applications, and it can be concluded that women had more practical experience in traditional medicine.
medicine in this region. The findings of Sadat-Hosseini et al. in the southern part of this region also confirmed our results [10].

The results of ANOVA showed that there were significant differences between the three age groups ($F = 3.17$, $p = 0.02$), and different levels of education ($F = 2.56$, $p = 0.03$). Also, based on Duncan’s test, the two older age groups (older than 45 years old) with low level of education had more traditional knowledge about the medicinal plants. Based on these results and other reports like that of Hu et al., despite the importance of the traditional medicine for the older inhabitants, the younger generation does not show interest, which means that the ethnobotanical knowledge does not further flourish [2].

Finally, based on the results of ANOVA and Duncan’s tests, occupation of the informants had a significant effect on their traditional medicinal knowledge ($F = 4.19$, $p = 0.01$), and genuine information belonged to the herbal healers, nomadic people, and villagers, respectively. Field surveys revealed that herbal healers, due to their job requirement, record and learn the relevant knowledge of the other ethnic groups like nomadic and villagers and usually have more comprehensive traditional knowledge.

### Ethnopharmacological knowledge of tribes and different area

In the hot and dry regions of Kerman province like Kahan, Roodbar, Anbarabad, Qale Ganj, Manojan, Faryab, Anbarabad, Qale Ganj, Manojan, Faryab, and other areas, the informants stated that the traditional knowledge has a significant role in their daily life. The knowledge is passed down from generation to generation and is used to treat various ailments, including those in the digestive, respiratory, and skin systems. The table below summarizes the informant consensus agreement for ailments in the Kerman province:

| ICPC categories                          | Recorded ailments                                                                 | Nt* | NUR** | ICF value*** |
|-----------------------------------------|----------------------------------------------------------------------------------|-----|-------|-------------|
| General and Unspecified (OTH-A)         | Health and body tonic (88), Fever (279), Disinfectant (116), Detoxification (51) | 136 | 1052  | 0.87        |
| Digestive (GAS-D)                       | Constipation (146), Toothache (127), Gastritis (395), Intestinal worm (69), Diarrhea (492), Jaundice (191), Nausea (54), Stomachic (781), Tooth germ (2), Liver ailment (115), Carminative (229), Vomiting (16), Digestive (32) | 243 | 2609  | 0.90        |
| Ophthalmological (EYE-F)                | Eye Sight enhancement (5), Pterygium (2), Eye diseases (8)                       | 6   | 15    | 0.64        |
| Ear (Ear-H)                             | Earache (9), Ear diseases (5)                                                    | 5   | 14    | 0.69        |
| Cardiovascular (CAR-K)                  | Blood pressure (105), Hemorrhoids (13), Heart tonic (13), Cardiovascular disease (6), Blood purifier (115) | 37  | 252   | 0.85        |
| Blood, Blood Forming Organs and Immune Mechanism (Blood-B) | Anemia (42), Blood coagulation (14), Blood fat (31) | 87  | 16    | 0.82        |
| Musculoskeletal (SKE-L)                 | Bone and Joint pains (215), Anti-inflammation (74), Muscular cramps (2), Rheumatism (58), Arthritis (9), Waist pain (6) | 60  | 364   | 0.83        |
| Neurological (NER-N)                    | Dizziness (9), Nervous problems (115), Migraine (7), Antispasmodic (93), Pain relief (161), Relaxing (246), Sleeplessness (33) Alzheimer (5), Memory Improvement (18), Depression (5), Headache (40), Leaving addiction (100), Anticonvulsant (7) | 112 | 852   | 0.86        |
| Psychological (Psy-P)                   | Anorexia (10)                                                                   | 4   | 10    | 0.66        |
| Respiratory (RES-R)                     | Cough (445), Asthma (37), Respiratory diseases (112), Colds (454), Bronchitis (48), Itchy throat (8), Acute pulmonary embolism (18), Influenza (6) | 121 | 1128  | 0.89        |
| Skin (DER-S)                            | Bites (32), Bruise (138), Burn (144), Wound (317), Eczema (368), Skin ailments (105), Skin rash (50), Beauty of skin and hair (13), Acne (22), Scar (61), Blister (5), Skin patches (2), Skin bur (22), Hair tonic (208), Dandruff (29), Hair leprosy (36), Warts (11) | 132 | 1563  | 0.91        |
| Endocrine/ Metabolic and Nutritional (MET-T) | Diabetes (310)                                                               | 25  | 310   | 0.92        |
| Urological (URO-U)                      | Urinary problems (75), Kidney stone (77), Kidney diseases (14)                 | 32  | 191   | 0.83        |
| Pregnancy, Childbearing, Family Planning (PRE-W) | Male infertility (11), Lactiferous (13)                         | 6   | 24    | 0.78        |
| Female Genital (GYN-X)                  | Menstrual irregular (79), Women infection (31), Ovarian augmentation (3)       | 113 | 16    | 0.86        |
| Cancer (CAN-C)                          | Tumorous cancer (9), Blood cancer (1)                                          | 7   | 9     | 0.25        |

Nt= number of plant species used in each ailment category; NUR= number of mentions in each used category; ICF= Informant Consensus actor.
Bam, Fahraj, Narmashir, Rigan, and plain part of Jiroft, most inhabitants are from Baluch tribe and the natives of Jiroft and Kahnooj. Based on the results, medicinal plants such as *Berberis integerrima*, *R. persica*, *Calotropis procera* (Aiton) Dryand., and *R. stricta* are widely used to treat dermatological diseases. The rate of drug abuse in these regions is more than in mountainous areas because these cities are in the neighborhood of Afghanistan and the availability of drugs is thus higher. Hence, medicinal plants such as the plant from the genus *Achillea* (*A. wilhelmsii*, *A. eriophora*, *A. santolinoides*), *Berberis integerrima* and *R. persica* are used individually or in combination by the locals for stopping drug abuse.

Tribal communities and folk people, who live in the mountainous areas such as Hezar, Sirch, and Jebal barez, mainly use the herbal medicine for the treatment of gastrointestinal disorders. Based on the field surveys and discussion with the herbal healers, the main food of the nomadic people is milk and its derivatives especially curd and buttermilk, and they do not have a diverse diet. There is a significant relationship between the consumption of low-diversity diets and the risk of non-communicable diseases [54, 55].

**New traditional medicinal uses**

According to the in-depth comparison of the current ethnobotanical findings with previous national reports, a large volume of unrecorded traditional medicine knowledge was gathered. A major implication of the current study is identification of traditional medicinal use of 292 plants in the Kerman province and 201 plants species in the Persian ethnobotany for the first time. This unrecorded knowledge is summarized based on the plant families as follows:

- **Amaranthaceae** (*Amaranthus retroflexus* for the treatment of jaundice; *Anabasis aphylla* and *Seidlitzia rosamurinus* as traditional washing powders), **Apiaceae** (*Eryngium billardieri* and *Eryngium bungei* in pain relief, *Prangos ferulacea* as parasite repellents), **Apocynaceae** (*Cionura erecta* for sore throat and cough, *Rhazya stricta* for joint pains and body ache, *Calotropis procera* in the healing of skin disorders like eczema), **Asteraceae** (*Launaea acanthodes* as intestinal parasite repellents, *Artemisia spp.* for the treatment of gastric infection and stomachache, *Calendula officinalis* for the treatment of pterygium), **Boraginaceae** (*Cordia myxa* for common cold, sore throat and kidney stone); **Ephedraceae** (*Ephedra distachya* and *Ephedra foliata* for peptic ulcer and as materials in traditional tannery), **Euphorbiaceae** (*Euphorbia serpens* for eczema); **Fabaceae** (*Astracantha lateritia* for hair tonic and eczema, *Prosopis cineraria* in preventing nose bleeding) **Lamiaceae** (*Dracocephalum polyantha* as potent and multipurpose medicinal plant);

| Table 5 | Comparison of dominant plants by using indices and species ranking based on each index (RFC and CI) |
|---|---|
| Family | Scientific name | RFC | CI | RFC ranking | CI ranking |
| Cucurbitaceae | *Citrullus colocynthis* (L) Schrad. | 0.42 | 0.55 | 4 | 4 |
| Asteraceae | *Launaea acanthodes* (Boiss.) Kuntze | 0.37 | 0.58 | 4 | 4 |
| Fabaceae | *Glycyrrhiza glabra* L. | 0.56 | 0.64 | 3 | 4 |
| Cupressaceae | *Juniperus excelsa* M.Bieb. | 0.41 | 0.66 | 4 | 4 |
| Apocynaceae | *Calotropis procera* (Aiton) Dryand. | 0.63 | 0.70 | 2 | 4 |
| Lamiaceae | *Mentha longifolia* (L.) L. | 0.49 | 0.74 | 3 | 3 |
| Lythraceae | *Lawsonia inermis* L. | 0.77 | 0.76 | 1 | 3 |
| Apocynaceae | *Cionura erecta* (L.) Griseb. | 0.31 | 0.77 | 4 | 3 |
| Apocynaceae | *Rhazya stricta* Decne. | 0.63 | 0.80 | 2 | 3 |
| Asteraceae | *Artemisia persica* Boiss. | 0.79 | 0.82 | 1 | 3 |
| Berberidaceae | *Berberis integrerrima* Bunge | 0.66 | 0.84 | 2 | 3 |
| Apiaceae | *Bunium persicum* (Boiss.) B.Fedtsch. | 0.73 | 0.85 | 2 | 3 |
| Bignoniaceae | *Tecomella undulata* (Sm.) Seem. | 0.51 | 0.89 | 3 | 3 |
| Anacardiaceae | *Pistacia atlantica* Desf. | 0.75 | 0.96 | 2 | 2 |
| Lamiaceae | *Dracocephalum polychaetum* Bomn. | 0.64 | 1.00 | 2 | 2 |
| Lamiaceae | *Thymus fedtschenkoi* Ronneg. | 0.86 | 1.11 | 1 | 1 |
| Lamiaceae | *Rydingia persica* (Burmf.) Scheen B.V.A.Albort | 0.67 | 1.17 | 2 | 1 |
| Lamiaceae | *Teucrium polium* L. | 0.72 | 1.20 | 2 | 1 |
| Lamiaceae | *Zataria multiflora* Boiss. | 0.87 | 1.29 | 1 | 1 |
| Lamiaceae | *Nepeta cataria* L. | 0.89 | 1.51 | 1 | 1 |
Plantaginaceae (*Plantago amplexicaulis*, *Plantago gentianoides* and *Plantago indica* for constipation and jaundice); Polygonaceae (*Pteropyrum aucheri* in healing of infectious wounds); Ranunculaceae (*Clematis ispahanica* in healing of eczema and psoriasis); Rosaceae (*Rosa moschata* as nerve tonic, *Prunus scoparia* in cancer prevention); Rubiaceae (*Placoma aucheri* in reducing rheumatic pain and blood sugar); Rutaceae (*Citrus limon* and *Citus aurantium* for the treatment of eye diseases and making the traditional kohl); Salvadoraceae (*Salvadora oleoides* as parasite repellent), Tamaricaceae (*Tamarix aphylla* and *Tamarix kotschyi* in healing of eczema and skin disease); Thymelaeaceae (*Daphne oleoides* in traditional dyeing); Violaceae (*Viola odorata* for chronic cough and as expectorant); and Zygophyllaceae (*Zygophyllum eurypterum* and *Zygophyllum fabago* as lactiferous and vermicide). These findings highlight the importance of the documentation of such valuable ethnobotanical information. Also, some of these medicinal plants can be targeted for pharmacological and bioactive studies with the aim of identifying phytochemical content and therapeutic applications.

**Conclusion**

Our extensive study in Kerman as the vastest province in Iran with 23 cities, 171,993 square kilometers area, and 89 tribal communities revealed rich traditional medicinal knowledge of its local populations. Traditionally, they used 402 medicinal plant species in 73 families to meet their pharmacological needs. Besides the common oral and topical utilization of the crude herbal drugs, dressing and bath with the medicinal plants are the exceptional mode of application in Kerman province. The highest ICF values belonged to diabetes, digestive, skin, and respiratory disorders, respectively.

Our findings suggested that Asteraceae and Apiaceae plants were dominantly used for the treatment of gastrointestinal disorders, Lamiaceae plants for respiratory and gastrointestinal ailments, and Apocynaceae plants for dermatological problems.

For several medicinal plants with high use reports such as *Cionura erecta*, *Tecomella undulata*, and *Launaea acanthodes*, scanty pharmacological and phytochemical data has been reported. On the other hand, the top list included *Rhazya stricta*: wound healing; *Calotropis procera*: eczema; *Berberis integrerrima*: diabetes and addiction cessation; *Dracocephalum polychaetum*: stomachache, diarrhea, detoxication and strengthening body; *Rydingia persica*: leaving addiction; *Launaea acanthodes*: parasite repellent; *Cionura erecta*: expectorant; and *Tecomella undulate*: skin ailments, eczema, and diabetes. These results highlight the need for further bioactive and phytochemical studies on the mentioned medicinal plants. Finally, some frequently used medicinal plants like *Cionura erecta*, *Dracocephalum polychaetum*, and *Tecomella undulata* are endangered and restricted in small parts of their habitats. Therefore, urgent conservation measures are needed.

**Abbreviation**

ITM: Iranian traditional medicine

**Acknowledgements**

We sincerely thank the ethnic communities and local herbal healers of Kerman province for their helps in data sampling and continuing support of this study. We would like to acknowledge the University of Jiroft for financial support.

**Authors’ contributions**

SHH and HB designed the work. AS, ARQ, and ASh participated in the organization of the ethnomedical and ethnopharmacological data. HB conducted the botanical analysis. SHH participated in all steps (designing, field work, data analysis, literature search, etc.). The authors read and approved the final manuscript.

**Authors’ information**

The authors have doctoral qualification in Medicinal plants, Plant systematic, Biology, Pharmacognosy, and Pharmaceutical Biotechnology. This work is based on the research project of SH, which is granted by the University of Jiroft.

**Funding**

This study was supported by research grants (No: 3818-97-6) from the University of Jiroft. We thank the University of Jiroft for technical and financial support.

**Availability of data and materials**

All data generated or analyzed during this survey are included in this article.

**Ethics approval and consent to participate**

This study was reviewed and approved by the Research Deputy at the University of Jiroft. The organization of the institute does not involve an Ethics Committee; therefore, there is no specific ethics code assigned to this study. However, each research proposal, like the one corresponding to the current study, is comprehensively reviewed by the university until an approval code is granted (No: 3818-97-6). We would like to clarify that this study did not involve any intervention and all questions from local informants were performed with prior verbal consent.

**Consent for publication**

Not applicable.

**Competing interests**

All the authors declare no conflict of interest.

**Author details**

1Department of Biology, Faculty of Science, University of Jiroft, Jiroft, Iran. 2Biotechnology Research Center, Pharmaceutical Technology Institute, Mashhad University of Medical Sciences, Mashhad, Iran. 3Neurogenic Inflammation Research Center, Mashhad University of Medical Sciences, Mashhad, Iran. 4Department of Pharmacognosy, School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran.

**Received: 18 September 2020 Accepted: 4 February 2021**

Published online: 28 April 2021

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