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Collection, Identification and Survey the Traditional Medicinal Uses of Medicinal Plants of Maneh and Semelghan Region in North Khorasan Province of Iran

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Abstract: The Maneh-Semelghan county of North Khorasan province because of climate diversity and topography has a very diverse and valuable vegetation reserves that constitutes a high percentage of medicinal plants. Due to people familiar with medicinal plants, many of these plants are known by local names and people are in widespread use in traditional medicine. During a survey that was conducted for 5 years in the years 2010 till 2014, 123 species of medicinal plants belonging to 32 plant families, from different parts of the county were collected and identified. Profile identified species include the scientific name of the species, family, life form, Chorotype and applied parts of collected species were recorded in forms. Based on the results of this study, the family of Asteraceae with 20 species of medicinal plants accounted for the largest number of species. Then the family of Lamiaceae with 18 species of medicinal plants had the most species. Rosaceae and Apiaceae families with 12 and 13 species respectively were next in line.

Keywords: Rangeland, Medicinal Plants, Floristic List, Maneh-Semelghan

1. Introduction

Identifying Vegetation of each region is important for accomplishing other pure and applied researches in ecology. Especially in the Northern Khorasan Province that unique ecological and climatic conditions make it a special habitat for the floristic studies. Rangelands comprise a large fraction of Maneh-Semelghan region. People in this area are highly dependent on rangelands; they use range plants as sources for food, medicine, livestock production etc. Therefore, identifying floristic list of medicinal plants of this region is beneficial for protecting the endangered plants, and for planning a sustainable use of medicinal plants [21, 22]. In addition to the many medicinal plant species are threatened with extinction in the region for various reasons and it is necessary to identify and protected [20].

Several reference e.g. Rechinger [36], Boissier [13], Assadi *et al*. [9] provide valuable information on the native and exotic plants of Northern Khorasan province. However, they are mainly adopted from the large-scale studies and do not provide detailed information on the flora of this region. On the other hand several studies have been conducted on the flora of Northern Khorasan province e.g. Shaad and Sanjari [38, 10, 40], Aydani [10]; Sobhani *et al*., [40] and Akhani [2] have studied flora of Golestan National Park, in which small parts of Garmeh and Maneh-Semelghan counties (Northern Khorasan province) were also included. Other researchers have studied geographic distribution of plant species for only one family or one genus in Northern Khorasan Provinces, e.g. Compositae [40], Cupressaceae [37], and genus of *Bromus* L. [25]

Juniper evergreen forests, broadleaf forests of oak, hawthorn and pistachios and protected areas of Golestan and Darkesh are important resources and valuable reserves of

medicinal plants and rangelands in Maneh-Semelghan. Due to people familiar with medicinal plants, many of these plants are known by local names and people are in widespread use in traditional medicine. The county has a great diversity of medicinal plants so that in the Darkesh region of Maneh-samalghan, about 79 species of medicinal plants are known [10].

Accordingly, a lack of comprehensive information on the medicinal plants of Maneh-Semelghan was the most important reason behind this research. The main aim was to do a survey the flora and to identify the major plant phenotype and chorotypes of the medicinal plants in Maneh-Semelghan region. Result of this study can also be used for the applied researchers and natural resources experts such as rangeland management and conservation.

2. Materials and Methods

Maneh-Semelghan County with an area of 6053 square kilometers centered on the town of Ashkhaneh in the north west of North Khorasan Province is located between 37º 17' to 38º 7', northern latitude and 55º 59' to 57º 17' eastern longitude. The County has 8 km common border with Turkmenistan Country and is limited from the north to the County of Raz and Jargalan, from West to Golestan Province (Counties of Kalaleh and Maraveh tappe), from the south to the Counties of Jajarm and Garmeh and from East the County of Bojnoord (Figure 1), [6].

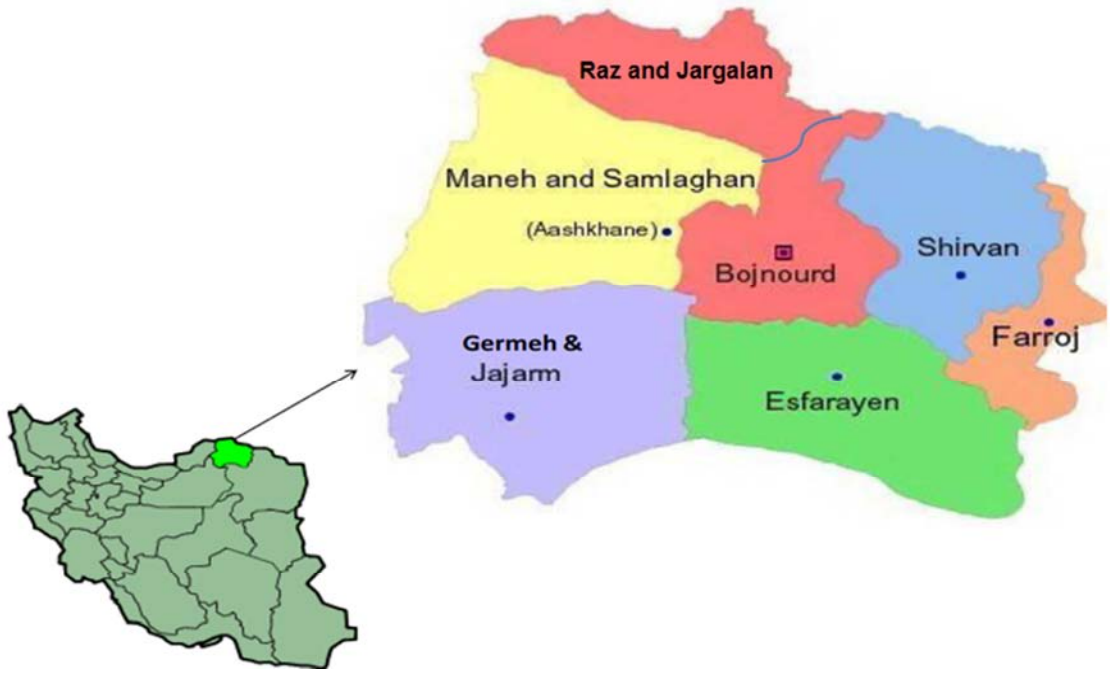

Figure 1. *Maneh-Semelghan County in Northern Khorasan Province in the Northeast of Iran.*

Maneh-Semelghan County due to altitude and topography, rivers and plains, has a larg weather variation and in general has mountainous, temperate and semi-desert climates. So that the relative humidity is low in the County and this amount increases from East to West. The absolute maximum temperature is 40° that accured in July and August (the warmest months) and an absolute minimum temperature is -18º that happens in January (the coldest month) and average annual rainfall is 252 mm.

During five years of research, at first based on the documented and undocumented sources of plants considered as pharmaceutical ones, the list of medicinal plants were prepared. Given that different parts of the Maneh-Semelghan region had climatic diversity and differ in terms of the phenology and flowering, Calendar of admission to various parts of the region were prepared. Then the medicinal plants had been gathered from the region. Along with the gathering of medicinal plants, a number of ecological parameters had also been considered.

The samples were transferred to the herbarium; then, they identified with the use of various Floras such as Iran Flora [9], Iranica flora [36], Iranica Flora [33], Flora of Iran [27] and Colored Flora of Iran [14]. Also, in order to obtain information regarding the functional sections and other issues, some sources had been utilized [16, 17, 4, 3, 26, 45, 31, 30]. The applied parts of species had been derived from various sources such as local knowledge and especially Identification of Medicinal and Aromatic Plants of Iran [29]. In this manner the status of distribution of these species has been determined according to these Flora. Determining the life form was done by Raunckiaer [35] criterion.

3. Results

Based on the findings from the research, total of 123 medicinal plant species were identified belonging to 32 families. Specifications the identified species such as scientific name, family name, life form, chorotype and

applied parts has shown in Table 1.

Table 1. *List of Medicinal Plants in Maneh-Semelghan Rangelands.*

Row	Scientific name	Family	Life form	Chorotype	Applied parts
1	*Achillea biebersteinii* Afan	Asteraceae	He	IT, ES	Flowering top branch, Leaf, Root
2	*Achillea eriophora* DC.	Asteraceae	He	IT, ES	Flowering top branch, Leaf, Root
3	*Achillea millefolium* L.	Asteraceae	He	IT, ES	Flowering top branch, Leaf, Root
4	*Achillea pachycephala* Rech. f.	Asteraceae	He	IT, ES	Flowering top branch, Leaf, Root
5	*Agrimonia eupatoria* L.	Rosaceae	He	IT, ES, M	Leaf, Flower
6	*Agropyron repens* (L.) P. Beauv.	Poaceae	He	IT	Aerial organs, Shoot, Seed
7	*Alcea rosea* L.	Malvaceae	He	IT	Leaf, Flower, Root
8	*Alliaria petiolata* (M. Bieb.) Cavara & Grande	Brassicaceae	Ch	IT, M	All organs
9	*Althaea officinalis* L.	Malvaceae	He	IT	Leaf, Flower, Root
10	*Alhagi camelorum* Fisch.	Fabaceae	Ch	IT	Leaf, Gum on shoot
11	*Alyssum desertorum* Stapf	Brassicaceae	He	Cosm	Seed
12	*Amaranthus cruentus* L.	Amaranthaceae	Th	Pl	Aerial organs, Seed
13	*Amaranthus retroflexus* L.	Amaranthaceae	Th	Pl	Aerial organs, Seed
14	*Ammi majus* L.	Apiaceae	He	IT, M	Seed
15	*Amygdalus scoparia* Spach.	Rosaceae	Ph	IT	Seed
16	*Anchusa italica* Retz.	Boraginaceae	Th	IT, ES	inflorescence
17	*Apium graveolens* L.	Apiaceae	He	IT	Leaf, Root, Seed
18	*Artemisia biennis* Wild.	Asteraceae	Ch	IT	Inflorescence, Leaf
19	*Artemisia absinthium* L.	Asteraceae	Ch	IT, M	Inflorescence, Leaf
20	*Artemisia annua* L.	Asteraceae	Th	IT, M	Leaf, Stem
21	*Artemisia scoparia* Waldst. & Kit.	Asteraceae	He	IT, ES, M	Inflorescence, Leaf
22	*Artemisia vulgaris* L.	Asteraceae	Ch	IT	Inflorescence, Leaf, Root
23	*Berberis integerrima* Bunge	Berberidaceae	Ph	IT	Root, Leaf, Fruit
24	*Berberis khorasanica* Browiez	Berberidaceae	Ph	IT	Root, Leaf, Fruit
25	*Bunium cylindericum* (Boiss. & Hausskn.) Drude.	Apiaceae	Th	IT	Fruit
26	*Bupleurum exaltatum* M. B.	Apiaceae	He	IT, M	Leaf, Seed
27	*Bupleurum falcatum* L.	Apiaceae	He	IT, M	Leaf, Seed
28	*Bupleurum rotundifolium* L.	Apiaceae	He	IT, M	Leaf, Seed
29	*Caparis spinosa* L.	Capparidaceae	Ph	IT, ES, M	Flower, Root, Leaf, Fruit
30	*Capsella bursa-pastoris* (L.) Medicus	Brassicaceae	Th	Cosm	All organs
31	*Cardaria draba* (L.) Desv.	Brassicaceae	He	M	Leaf, Seed
32	*Centaurea behen* L.	Asteraceae	He	IT	Root
33	*Cercis siliquastrum* L.	Fabaceae	He	IT	Leaf, Hull
34	*Chenopodium vulvaria* L.	Chenopodiaceae	Th	Cosm	Aerial organs
35	*Cichorium intybus* L.	Asteraceae	He	IT, ES, M	Leaf, Root
36	*Cirsium arvense* (L.) Scop.	Asteraceae	He	IT	Root
37	*Cnicus benedictus* L.	Asteraceae	He	IT	Flowering top branch
38	*Colchicum persicum* Baker	Colchicaceae	Ge	IT	Bulb
39	*Colutea arborescens* L.	Fabaceae	Ph	IT	Leaf, Pod
40	*Conium maculatum* L.	Apiaceae	He	Pl	Fruit, Leaf
41	*Crataegus atrosanguinea* Pojark.	Rosaceae	Ph	IT	Flower, Fruit
42	*Crataegus azarolus* L.	Rosaceae	Ph	IT	Flower, Fruit
43	*Crataegus melanocarpa* M. Bieb.	Rosaceae	Ph	IT	Flower, Fruit
44	*Crataegus microphylla* K. Koch	Rosaceae	Ph	IT	Flower, Fruit
45	*Crataegus pseudohetrophylla* Pojark.	Rosaceae	Ph	IT	Flower, Fruit
46	*Cyperus longus* L.	Cyperaceae	Ge	IT, M	Rhizome, Root
47	*Cyperus rotundus* L.	Cyperaceae	Ge	IT, M	Rhizome, Root
48	*Daucus broteri Ten.*	Apiaceae	Th	IT, ES, M	Leaf, Seed, Root
49	*Descurainia Sophia* (L.) Webb& Berth.	Brassicaceae	Th	IT	Flower, Leaf, Seed
50	*Dipsacus laciniatus* L.	Dipsaceaa	He	IT	Root
51	*Dorema ammoniacum* D. Don	Apiaceae	He	IT	Root, Shoot
52	*Echinophora platyloba* DC.	Apiaceae	He	IT	Leaf, Flower
53	*Echinops ritrodes* Bunge	Asteraceae	He	IT	All organs
54	*Echinops robustus* Bunge	Asteraceae	He	IT	All organs
55	*Epilobium hirsutum* L.	Onagraceae	Ge	Pl	Leaf, Stem
56	*Eremurus spectabilis* M. Bieb.	Asphodelaceae	He	IT	Aerial organs, Root
57	*Erodium cicutarium* (L.) L'Hér. ex Aiton	Geraniaceae	Th	IT, ES, M	All organs
58	*Eryngium bornumlleri* Nab.	Apiaceae	He	IT	Aerial organs
59	*Eryngium caeruleum* M. B.	Apiaceae	He	IT	Aerial organs
60	*Ferula gummosa* Boiss.	Apiaceae	He	IT	Root
61	*Fritillaria imperialis* L.	Liliaceae	Ge	IT	Bulb
62	*Fumaria vaillantii* Loisel.	Fumariaceae	Th	Cosm	All organs
63	*Galium aparine* L.	Rubiaceae	Th	IT, ES	Aerial organs

Row	Scientific name	Family	Life form	Chorotype	Applied parts
64	*Galium verum* L.	Rubiaceae	He	IT, M	inflorescence
65	*Geranium robertianum* L.	Geraniaceae	Th	IT, ES, M	Aerial organs
66	*Glycyrrhiza glabra* L.	Fabaceae	He	IT, ES, M	Root
67	*Goldbachia laevigata* (M. Bieb.) DC.	Brassicaceae	Th	IT, M	Aerial organs
68	*Gundelia tournefortii* L.	Asteraceae	He	IT, M	Aerial organs
69	*Gypsophila bicolor* (Freyn. & Sint.) Grossh.	Caryophyllaceae	He	IT	Aerial organs
70	*Hibiscus trionum* L.	Malvaceae	Th	IT	Leaf, Flower, Root
71	*Hymenocrater platystegius* Rech. F.	Lamiaceae	He	IT	Leaf, Fruit
72	*Hyoscyamus niger* L.	Solanaceae	He	IT	Leaf, Seed
73	*Hypericum perforatum* L.	Hypericaceae	He	IT, M	Inflorescence, Leaf
74	*Inula salicina* L.	Asteraceae	Ge	IT, ES, M	Root
75	*Lathyrus aphaca* L.	Fabaceae	Th	IT, M	Mature Seed
76	*Leonurus cardiaca* L.	Lamiaceae	Th	IT	Aerial organs
77	*Lithospermum officinale* L.	Boraginaceae	Th	IT	Aerial organs, Seed
78	*Lycopus europaeus* L.	Lamiaceae	Th	IT	Leaf
79	*Malus orientalis* Uglitzk.	Rosaceae	Ph	IT	Fruit
80	*Malva neglecta* Wallr.	Malvaceae	Th	IT, ES	Leaf, Flower, Seed
81	*Mespilus germanica* L.	Rosaceae	Ph	IT	Fruit, Leaf
82	*Muscari neglectum* Guss.	Liliaceae	Ge	IT, ES, M	Bulb
83	*Myrtus communis* L.	Myrtaceae	Th	IT	All organs
84	*Nepeta cataria* L.	Lamiaceae	He	IT, ES, M	inflorescence
85	*Nepeta glomerulosa* Boiss.	Lamiaceae	He	IT	All organs
86	*Ononis spinosa* L.	Fabaceae	Ch	IT	Root, Leaf, Flower
87	*Paliurus spina-christi* Miller	Rhamnaceae	Ph	IT, ES, M	Fruit
88	*Perovskia abrotanoides* Karel.	Lamiaceae	Ch	IT	inflorescence
89	*Phlomis anisodonta* Boiss.	Lamiaceae	He	IT	Aerial organs
90	*Plantago lanceolata* L.	Plantaginaceae	He	IT, M	Seed
91	*Plantago major* L.	Plantaginaceae	He	SCosm	Seed
92	*Prunus spinosa* L.	Rosaceae	Ph	IT, ES	Froot, Flower, Leaf
93	*Pulicaria dysenterica* (L.) Gaertn.	Asteraceae	He	IT, ES, M	All organs
94	*Rosa persica* Michx. Ex Juss.	Rosaceae	Ch	IT	Froot, Flower, Leaf
95	*Rumex acetosa* L.	Polygonaceae	Th	IT	young leaves, Stem
96	*Rumex obtusifolius* L.	Polygonaceae	Th	IT	Root
97	*Salsola kali* L.	Chenopodiaceae	Th	IT	Aerial organs
98	*Salvia aethiopis* L.	Lamiaceae	He	IT	Leaf, Flower
99	*Salvia chorassanica* Bunge	Lamiaceae	He	IT	Leaf, Flower
100	*Salvia macrosiphon* Boiss.	Lamiaceae	He	IT	Leaf, Flower
101	*Salvia nemurosa* L.	Lamiaceae	He	IT	Aerial organs
102	*Salvia sclarea* L.	Lamiaceae	He	IT, M	Leaf, Flower
103	*Salvia spinosa* L.	Lamiaceae	He	IT	Aerial organs
104	*Sangnisorba minor* Scop.	Rosaceae	He	IT, ES, M	Aerial organs
105	*Satureja mutica* Fisch. et C. A. Mey.	Lamiaceae	Ch	IT	Aerial organs
106	*Scirpus maritimus* L.	Cyperaceae	Ge	IT, M	Root
107	*Scutellaria pinnatifida* A. Hamilt.	Lamiaceae	Ch	IT	Aerial organs
108	*Serratula arvensis* L.	Asteraceae	He	IT	Flower
109	*Silene conoidea* L.	Caryophyllaceae	He	IT, ES	Aerial organs
110	*Sinapis arvensis* L.	Brassicaceae	Th	IT	Seed
111	*Sisymbrium altissimum* L.	Brassicaceae	Th	IT, ES, M	Leaf, Flower
112	*Solanum nigrum* L.	Solanaceae	Th	Cosm	Root, Leaf, Flower, Fruit
113	*Sorghum halepense* (L.) Pers.	Poaceae	Ge	Cosm	Seed
114	*Stachys lavandulifolia* vahl	Lamiaceae	Ge	IT	Aerial organs
115	*Thymus kotschyanus* Boiss. & Hohen	Lamiaceae	Ch	IT	Aerial organs
116	*Tulipa michelina*	Liliaceae	Ge	IT	Bulb
117	*Tulipa wilsoniana* Hoog	Liliaceae	Ge	IT	Bulb
118	*Vaccaria grandiflora* (Fisch, ex DC.) Jaub. & Spach	Caryophyllaceae	He	IT, M	Aerial organs, Root
119	*Verbascum songaricum* Scherenk ex Fisch. & C. A. Mey.	Scrophulariaceae	He	IT, ES	Flower, Leaf
120	*Viscum album* L.	Loranthaceae	Th	IT	Leaf, Fruit
121	*Xanthium spinosum* L.	Asteraceae	Th	IT, M	Aerial organs
122	*Ziziphora clinopodioides* Lam.	Lamiaceae	Ch	IT	Aerial organs
123	*Zygophyllum fabago* L.	Zygophyllaceae	Th	IT	Leaf, Root

Symbols and abbreviations used in the table:
Life form: Ch =chamaephyte, Ge =geophyte,, He =hemicryptophyte, Ph =phanerophyte, Th =therophyte.
Chorotype: Cosm = Cosmopolitan, ES= Euro-Sibirian, IT = Irano- Turanian, M = Mediterranean, PL = Pluriregional, SCosm = Subcosmopolitan.

The family of Asteraceae with 20 species of medicinal plants accounted for the largest number of species. Then the family of Lamiaceae with 18 species of medicinal plants had the most species. Rosaceae and Apiaceae families with 12 and 13 species respectively were next in line (Figure 2).

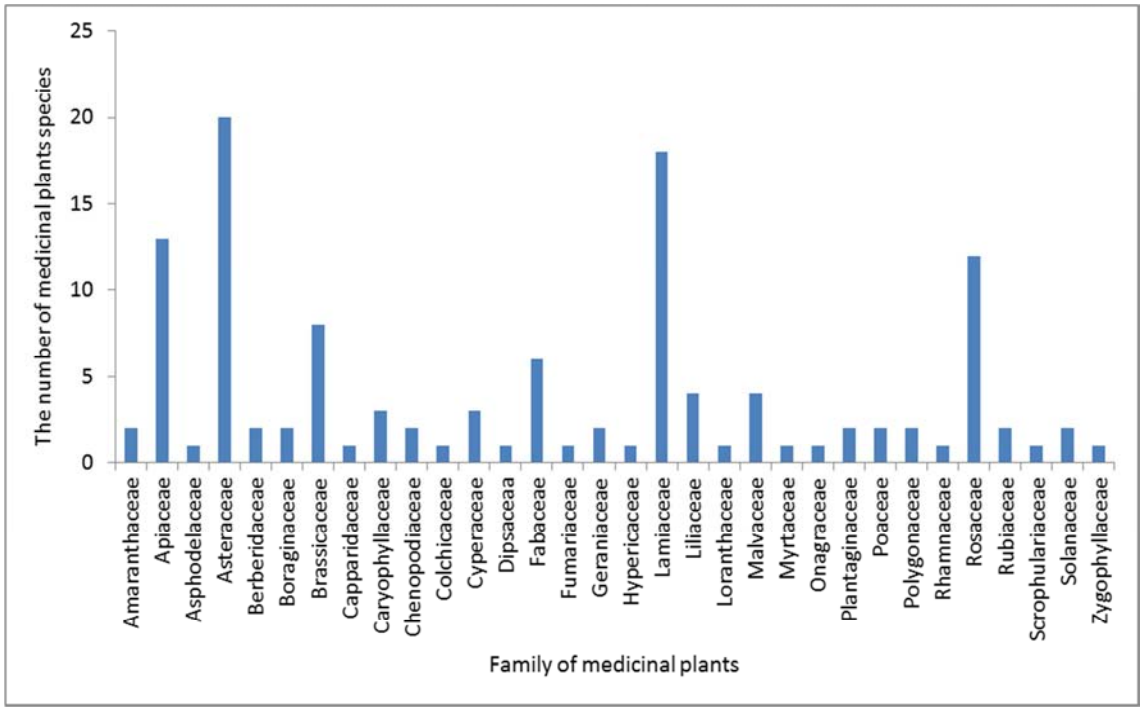

Figure 2. *The Number of Plants Species in Families in Flora of Medicinal Plants in Maneh-Semelghan Rangelands.*

Among the 32 plant families found in the Maneh-Semelghan region, Asteraceae and Lamiaceae were the most abundant. These families respectively contained 16%, and 15% species. Other families included Apiaceae, Rosaceae, Brassicaceae, Fabaceae, Malvaceae and Liliaceae respectively contained 11%, 10%, 7%, 5%, 3% and 3% species (Figure 3).

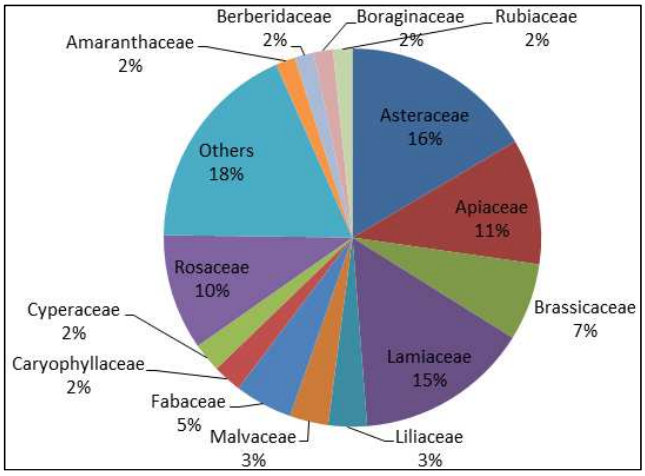

Figure 3. *Proportional Contribution of Plant Families in Flora of Medicinal Plants in Maneh-Semelghan Rangelands.*

Plant classification, based on Raunkiaer's life forms showed Hemicryptophytes as the most abundant (44% of total) species in flora of medicinal plants in Maneh-Semelghan region. Other life forms included Therophytes, Phanerophytes, Chamaephytes, and Geophytes, contained 25, 11, 10 and 10 percent of total plant species, respectively (Figure 4).

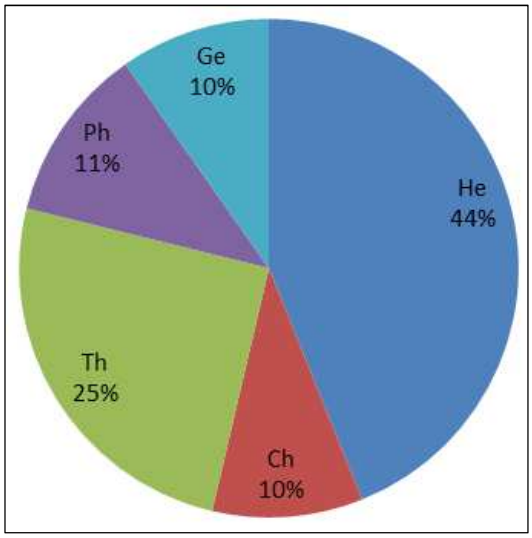

Figure 4. *Plant Life Forms and Their Relative Percentage in Flora of Medicinal Plants in Maneh-Semelghan Rangelands (Ch =Chamaephyte, Ge =Geophyte, He =Hemicryptophyte, Ph =Phanerophyte, Th =Therophyte).*

Chorotype and Phenotype of each plant species were compared. About 55% of the total plant species in Maneh-Semelghan region were belonged to the Irano-Turanian Chorotype, whereas Irano-Turanian-Mediterranean and Irano-Turanian-Mediterranean-Euro- Siberian, chorotypes

contained 15% and 12% of species respectively. Irano-Turanian-Euro-Siberian, Cosmopolitans and Pluriregional plant species respectively contained 8, 5 and 3 percent of all plant species. Less than 2% of total plant species were belonged to the other Chorotypes like Mediterranean and Subcomopolitans (Figure 5).

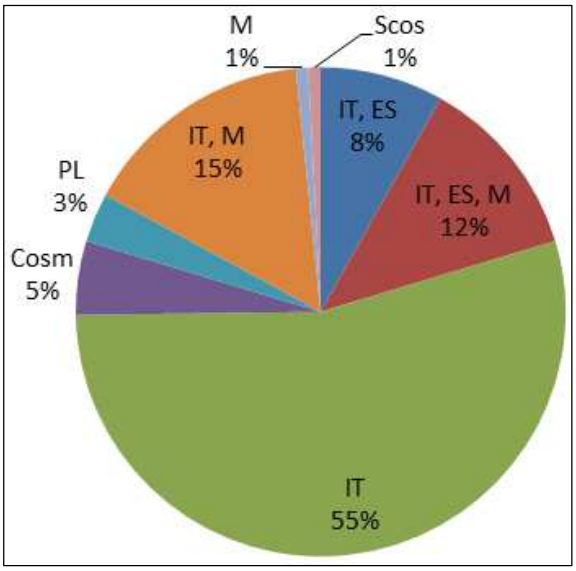

Figure 5. *Plant Chorotypes and Their Relative Percentage in Flora of Medicinal Plants in Maneh-Semelghan Rangelands (Cosm = Cosmopolitan, ES= Euro-Sibirian, IT = Irano- Turanian, M = Mediterranean, PL = Pluriregional, Scosm = Subcosmopolitan).*

4. Discussion

Some of the species in this area seem to be 'naturally rare'. Most of the documented recent population decline is attributed to human activity increasing the risk of extinction as a result of their reduced population size. For instance, the construction of a public road seriously altered the population size. Other biological factors such as plant longevity and absence of significant levels of herbivore demolition do not appear to compromise the species survival in the short term. Based on the obtained results in chorotype percentage of medicinal plants in the studied area, the percentage of endemic specimens has shown a relatively noticeable percentage of all species.

Hemicryptophytes and Therophytes were the most abundant life from in Maneh-Semelghan Rangelands. Several other studies in Khorasan Razavi Province have also reported higher abundance of Therophytes and Hemicryptophytes life forms. Amiri *et al*. [5] studied floristic of Tiregan in Hezar Masjed Mountains. Memariani *et al*., [24] also studied floristic of Fereizi in Chenaran, and both found higher abundance of Hemicryptophytes as compared to other life forms.

In Fereizi at Khorasan Razavi, Therophytes and Hemicryptophytes were commonly the most abundant life forms [24], in Khabr National Park and Rouchoun wildlife refuge [19] and in Meimand [43] both in Kerman, and in Kalat highlands of Gonabad in Khorasan Razavi [44] Hemicryptophytes were the most abundant plant life forms.

Results obtained from Malek Mohammadi and Mirzavash Azar [23] in Ghasemloo Valley, West Azerbaijan, Iran, show that Hemicryptophytes encompass 31.54% of the most important biological forms of the region while Therophytes, Phanerophytes, Cryptophytes and Chamaephytes include 22.15%, 22.82%, 10.74% and 12.75%, respectively. The 23% presence of Phanerophyte plants in this region gives it a forest, like appearance. The Hemicryptophyte plants are the dominant covering of the region and protect the region soil fairly well.

The life form of medicinal plant species was determined by Toupchi [42] in Arshadchamani Rangelands of East Azarbaijan. Iran. The results of research showed the life form of medicinal plant were including 57.89% Hemicryptophytes, 28.42% Therophytes, 7.36% Chamaephytes and 5.26% Geophyte.

Higher frequency of Therophytes and Hemicryptophytes in Maneh-Semelghan region can be related to their high adaptation to the Mediterranean climate conditions [46]. The active growth periods of these life forms are concurrent with the rainy season in late winter and early spring [41]. During most of the summer and all winter season, Hemicryptophytes loose their aboveground parts while Therophytes remain as seed. Therefore, these plants avoid summer drought and winter cold stresses [11]. Akbarlou and Nodehi [1] research in Ghorkhud Protected Region, Northern Khorasan Province, Iran, showed the distribution of plant communities associated with environmental factors. In this study, the most important factors, affecting the distribution of vegetation cover were OM, N, pH, sand, altitude, slope and EC.

Moghaddam [28] showed that environmental factors including altitude, rainfall, and temperature played an important role in the distribution of vegetation. Another factor contributing to the establishment of plant communities is the geographical factor; water availability, soil temperature and the amount of light received by the plant as well as difference in light intensity in different directions are affected by the changes to the hillside [8].

Life form study in Behbahan region, Iran, showed that the most important groups were Therophytes. In this study, Therophytes were included 78%, Geophytes 7.2%, Phanerophytes 7.1%, Hemicryptophytes 4.9% and Chamaephytes 2.4% of the life forms species. In terms of geographical distribution, chorotypes such as Irano-Turanian, Polyregional, Cosmopolite, Mediterranean, European-Siberian and Sudanian with amounts of 19.5%, 6%, 4.9%, 2.4%, 1.2% and 1.2% respectively were having in the highest and lowest levels between vegetative elements [12].

Investigation of life forms in Sarshiv Area of Marivan, Iran, showed that there were various plants in different life form. Among all of them, Terophytes (35%) and Chamaephytes (3%) had the highest and the lowest plant species, respectively. The review of the geographical distribution of plants in the region showed that the species belonged to different Chorotypes and Irano-Turanian (50%) and European–Siberian (1%) had the highest and the lowest

plant species of the region, respectively [18].

Life forms have close relationships with environmental factors [32]. According to Archibold [7], the frequency of hemicryptophytes in a region represents the cold and mountainous climate. Note that the regional climate is cold and wet and Hemicryptophytes plants have been influenced by the climate and are abundant.

Rahimi and Atri [34] in a research on flora of Miandasht Wildlife Refuge in Northern Khorassan Province, Iran, reported that the most of identified species were Irano-Turanian. Basiri *et al*. [12] also mentioned that a large number of plant species in River Forest Behbahan, Iran, belonging to the regions of Irano- Turanian and common areas of Irano- Turanian and Mediterranean eruption, were the most important ecological groups.

In the Northern areas of Khorassan research showed that 11.6% (29 of all 256) plant species were endemic [34].

5. Conclusion

Medicinal plants are an important aspect of Maneh-Semelghan Rangelands. They are important because of they provide accessible health care to the local population. With the introduction of new methods of health in many indigenous communities, non-indigenous pharmaceuticals are taking the place of traditional medicines. Medicinal plant knowledge has been shown to be more susceptible to the acculturation than other categories of plant knowledge. Medicinal plants resources are a valuable genetic pool that should be protected. Although they may not be used today, there may be a fundamental need for them in near future.

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