

### Natural medicinal plants of Karakalpakstan used in folk medicine

**Abstract:** The article analyzes ethnobotanical data on the use of natural medicinal plants in Karakalpakstan. Currently, there are 63 families of naturally growing medicinal plants in the region, 444 species belonging to 240 genera, which is 40% of the total flora. The use of herbs identified in the course of interviews with physicians in the form of questionnaires on the use of these medicinal plants in folk medicine.

**Key words:** Karakalpakstan, natural medicinal plants, life forms, local names, ethnobotany.

#### INTRODUCTION

The Republic of Karakalpakstan is located in the northwestern part of Uzbekistan, with an area of 167.1 thousand square kilometers, or more than 37 percent of the entire territory of Uzbekistan. Karakalpakstan is delimited from the north and northeast of the country by Kazakhstan, from the east and southeast by the Bukhara region, from the south by Turkmenistan and the Khorezm regions.

The territory of Karakalpakstan is 167.1 thousand km<sup>2</sup>. The northern and southern coordinates of the Republic of Karakalpakstan are 40° 55' and 45° 35' in northern latitude, as well as in the western and eastern latitudes, the most extreme points occupy 56°-62.5 and 45° 35' eastern lengths. Karakalpakstan includes Ustyurt, Kyzylkum and the lower reaches of the Amu Darya, as well as a complex of sandy-saline landscapes of Aralkum.

The flora and vegetation of the territory of Karakalpakstan has been studied by many scientists: S. Erezhepova (1978), O.N. Korovin et al. (1983), B.Sh. Sherbaev (1978; 1982; 1988) and others. The studies carried out by B.Sh. Sherbaev (1988) in recent years. It is of great importance, he noted the presence of 1110 species of higher plants for this territory, which belong to 467 genera and 97 families. A thorough analysis of this flora makes it possible to isolate medicinal plants from them.

Today, the need for drugs derived from natural plants is increasing. Currently, 60% of medicinal plants used in scientific medical practice are products isolated from plants. For example, almost 100% of cardiac preparations are made from plants (*Valeriana officinalis* L., *Leonurus panzerioides* M.Pop., *Digitalis purpurea* L.). As indicated in scientific sources, medicines made from natural plants have some advantages from drugs made artificially. Medicinal products made up of herbal products are harmless [1].

#### MATERIALS AND METHODS

In determining the Latin names of families, genera and species of medicinal plants distributed in the foothills of the Karakalpakstan: S.K. Cherepanov [7] also published the International Plants Names Index ([www.ipni.org](http://www.ipni.org)) [8], [www.plantarium.ru](http://www.plantarium.ru) [9], and The Plant List ([www.theplantlist.org](http://www.theplantlist.org)) [10]. In determining: Plants determiner of Central Asia [5], data were used.

Based on the research and data collected during the scientific expedition, we report the following. In order to collect information about medicinal plants used in folk medicine on the territory of Karakalpakstan and their use in the treatment of various diseases, interviews were conducted with 16 local residents from different regions. During the conversations, the most widely used medicinal plants, their medicinal properties and methods of application in medicine were studied. 50 species of medicinal plants, their medicinal properties and use in medicine were

returned 60 times by the local population. They corresponded to Takhtakupyr (21), Chimbay (2), Kegeyli (4) and Ellikkala (13), Turtkul (20) districts [Table 1].

## RESULTS AND DISCUSSION

According to the available reviews, the use of medicinal plants in the treatment of diseases of the local population is associated with colds (15), diarrhea (9), digestive diseases (15), lowering blood pressure (8), hepatitis (6), pain relief (2), boosting immunity (5) times. Herbarium specimens of these plants were collected, their geographic coordinates were determined and photographed, reflecting the points of their growth in natural conditions.

Among plants with medicinal properties, locals call *Glycyrrhiza glabra* L., *Polygonum aviculare* L., *Capparis herbacea* Willd, *Capsella bursa-pastoris* (L.) Medic., *Centaurum spicatum* L., *Cichorium intybus* L., *Cistanche salsa* (C.A. Mey.) G. Beck, *Tribulus terrestris* L., *Salsola richteri* (Moq.) Karel ex Litv. The most widespread was *Rheum tataricum* L., of which in medicine for digestion, diarrhea, pain in the intestines, kidneys. When blood pressure occurs, it is used to relieve pain, diarrhea, colds, toothache. When blood pressure occurs, with diarrhea, in the treatment of peptic ulcer, bolus in the intestines, kidneys. when widely used, other species have local characteristics depending on the degree of use.

**Table 1 Medicinal plants of Karakalpakstan used in traditional medicine**

№	Family	Botanical name	Herbarium samples voucher (KK)
1	Malvaceae Juss.	<i>Althaea armeniaca</i> L.	specimen voucher A.Baxiev, 23.06.1977
2	Fabaceae	<i>Alhagi pseudalhagi</i> (M. Bieb.) Desv.	specimen voucher A.Baxiev, 29.06.1974
3		<i>Anabasis aphylla</i> L.	specimen voucher A.Baxiev, 25.06.1977
4	Apocynaceae	<i>Apocynum scabrum</i> Russan.	specimen voucher B.Saribayev 28.06.1988
5	Asteraceae	<i>Artemisia annua</i> L.	specimen voucher G.Abdiniyazova 26.06.2015.
6		<i>Artemisia vulgaris</i> L.	specimen voucher B.Saribayev 18.06.1989
7		<i>Bidens tribartita</i> L.	specimen voucher B.Saribayev 18.06.1979
8		<i>Centaurum spicatum</i> L.	specimen voucher B.Saribayev

			19.06.1976
9		<i>Cichorium intybus</i> L.	specimen voucher G.Abdiniyazova 25.06.2015.
10		<i>Xanthium strumarium</i>	specimen voucher B.Saribayev 22.06.1989
11	Asparagaceae	<i>Asparagus officinalis</i> L.	specimen voucher G.Abdiniyazova 26.06.2015.
12	Capparaceae	<i>Capparis herbacea</i> Willd.	specimen voucher A.Baxiev, 20.06.1977
13	Brassicaceae	<i>Capsella bursa-pastoris</i> (L.) Medik.	specimen voucher B.Saribayev 18.06.1994
14		<i>Eruca sativa</i> Mill.	specimen voucher B.Saribayev 22.05.2015
15	Chenopodiaceae	<i>Chenopodium vulvaria</i>	specimen voucher specimen voucher G.Abdiniyazova 25.06.2014.
16		<i>Chenopodium album</i>	specimen voucher B.Saribayev 25.05.1994
17		<i>Haloxylon ammodendron</i> (C.A. Mey.) Bunge	specimen voucher A.Baxiev, 25.06.1977
18		<i>Salsola richteri</i> (Moq.) Karel ex Litv.	specimen voucher A.Baxiev, 20.06.1977
19		<i>Salsola paletzkiana</i> Litv.	specimen voucher B.Saribayev 22.05.1994
20	Orobanchaceae Vent.	<i>Cistanche salsa</i> (C.A. Mey.) G.Beck	specimen voucher B.Saribayev 29.06.1989.

21	Asclepiadaceae R.Br.	<i>Cynanchum sibiricum</i> Willd.	specimen voucher G.Abdiniyazova 17.06.2012.
22	Solanaceae Juss.	<i>Datura stramonium</i> L.	specimen voucher G.Abdiniyazova 17.06.2012.
23	Elaeagnaceae	<i>Elaeagnus angustifolia</i> L.	specimen voucher G.Abdiniyazova 17.06.2012.
24	Ephedraceae	<i>Ephedra distachya</i> L.	specimen voucher G.Abdiniyazova 17.06.2012.
25	Brassicaceae Burnett	<i>Erysimum canescens</i> Roth	specimen voucher G.Abdiniyazova 17.06.2012.
26	Apiaceae	<i>Ferula foetida</i> (Bunge) Regel	specimen voucher G.Abdiniyazova 17.06.2012.
27	Papaveraceae	<i>Fumaria vaillantii</i> L.	specimen voucher G.Abdiniyazova 14.06.2010.
28	Fabaceae	<i>Glycyrrhiza glabra</i> L.	specimen voucher G.Abdiniyazova 18.08.2014.
29		<i>Medicago lupulina</i> L.	specimen voucher G.Abdiniyazova 17.06.2012.
30		<i>Melilotus officinalis</i> (L.) Pall.	specimen voucher G.Abdiniyazova 17.05.2012.
31		<i>Sphaerophysa salsula</i> (Pall.)DC.	specimen voucher G.Abdiniyazova 17.06.2014.
32	Solanaceae Juss.	<i>Hyoscyamus niger</i> L.	specimen voucher G.Abdiniyazova 18.06.2014.

33		<i>Lycopus europaeus</i> Murray	specimen voucher G.Abdiniyazova 24.05.2012. №109
34		<i>Solanum nigrum</i> L.	specimen voucher B.Saribayev 25.06.1978. №37
35	Lamiaceae Lindl.	<i>Mentha asiatica</i> Boriss.	specimen voucher A.Baxiev 15.06.1989
36	Moraceae	<i>Morus alba</i> L.	specimen voucher A.Baxiev 05.06.1991
37		<i>Morus nigra</i> L.	A.Baxiev 18.06.1993
38	Nitrariaceae Lindl.	<i>Peganum harmala</i> L.	specimen voucher G.Abdiniyazova 18.06.2014. №23
39	Plantaginaceae Juss.	<i>Plantago major</i> L.	specimen voucher G.Abdiniyazova 17.05.2012.
40		<i>Plantago lanceolata</i> L.	specimen voucher G.Abdiniyazova 17.06.2014.
41	Portulacaceae Juss.	<i>Portulaca oleracea</i> L.	specimen voucher G.Abdiniyazova 18.06.2014.
42	Polygonaceae	<i>Polygonum aviculare</i> L.	specimen voucher G.Abdiniyazova 24.05.2012. №135
43		<i>Polygonum amphibium</i> L.	specimen voucher B.Saribayev 25.06.1978. №39
44		<i>Rheum tataricum</i> L.	specimen voucher A.Baxiev 15.06.1989
45	Ranunculaceae	<i>Ranunculus sceleratus</i>	specimen voucher A.Baxiev 05.06.1991
46	Rubiaceae Juss.	<i>Rubia tintorum</i> L.	A.Baxiev

			18.06.1993
47	Lamiaceae	Mentha asiatica Boriss.	specimen voucher G.Abdiniyazova 18.06.2014. №23
48	Zygophyllaceae R. Br.	Tribulus terrestris L.	specimen voucher G.Abdiniyazova 18.06.2015. №235
49	Urticaceae	Urtica dioica L.	specimen voucher G.Abdiniyazova 15.06.2014.
50	Verbenaceae	Verbena officinalis L.	specimen voucher G.Abdiniyazova 18.06.2014.

In the *Ferula foetida* (Bunge) Regel is a monocarpous plant with a height of 1.0-1.5 meters. (Kovrak-Uzbek, Sassi Gewrek-Karakalpak) (photo-3). It contains 9.35-65.15% of resins, 12-48% of glue and 5.8-20% of essential oil, and from resins are extracted ferulic acid, asarezen, asarezenanol, asarezenol and their esters with ferulic acid, as well as farnisiferol, umbelliferon compounds [1]. In sandy stony soils, in sandy soils, water is resistant. In particular, the city of Nukus in Karakalpakstan (around Achchik Lake, Sassi Lake) is distributed in the Lower Amudarya, Berdakh, Chilpik, Beruni, Sultan Uvays, Aralkum, Ustyurt plateau. Karakalpak doctors recommend taking a pure resin of this plant and rubbing it under the tongue once a day (like the head of a match).

*Glycyrrhiza glabra* L.- perennial herbaceous plant of the legume family - Fabaceae, from 70 to 220 cm high. From the licorice root, the following targeted drugs were obtained: based on glycyrrhizic acid - glycyram (for the treatment of bronchial asthma, allergic dermatitis, eczema and other diseases), based on flavonoids - liquiriton and flacarbine (for the treatment of gastric ulcer and duodenal ulcer) from licorice root is used as an analgesic, anti-inflammatory, choleric and hepatoprotective, laxative, diuretic, anti-allergic and antispasmodic. Licorice root in the form of a decoction, infusion, extract or powder is prescribed as an expectorant for lung diseases accompanied by cough; as an anti-inflammatory and antispasmodic agent - with hyperacid gastritis, peptic ulcer of the stomach and duodenum; in the composition of medicinal mixtures - as a diuretic and laxative [1].

*Polygonum aviculare* L.- annual plant. family of the Polygonaceae. The drug is prescribed in obstetric and gynecological practice as uterine bleeding, high blood pressure, gastritis, peptic ulcer of the stomach and duodenum, hemorrhoids, bronchitis, kidneys, liver and antiseptic.

Thus, only 80 (18.2%) species of medicinal plants growing in natural and cultural conditions are currently used in the scientific medicine of the region. When identifying new species of medicinal plants, as well as in the preparation of medicines, it is necessary to pay sufficient attention to the phylogenetic proximity of species (genera and families).

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