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Ethnobotanical Data on the Use of Medicinal Plants Distributed Wild in Bukhara Region in Folk Medicine

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Abstract: In the article, 1127 ethnobotanical data of medicinal plants belonging to 17 families, 57 genera and 80 species, which the inhabitants of Bukhara region recorded most in the treatment of various diseases, were studied. During the research, interviews were conducted with local residents of 67 villages located in 11 districts of Bukhara city and region. According to ethnobotanical records, species belonging to the Lamiaceae family (mint, mint) are widely used for medicinal and other purposes by the local population. For this reason, species belonging to this family were recorded 147 times, which made up 13.04% of the total number of records.

Keywords: Bukhara, ethnobotany, folk medicine, decoction, tincture, application, WHO, ArcGIS.

According to the World Health Organization (WHO), today, about 80% of the world's population uses medicinal plants, and more than 35% of the drugs used are derived from medicinal plant species [2]. The traditional use of medicinal plants depends mainly on socio-economic factors rather than climatic conditions or flora richness [1]. Ethnobotanical research plays a key role in the deeper study of these processes and finding practical solutions. Ethnobotanical studies are of great importance to identify species of medicinal plants of local importance and to formalize the extensive knowledge of endangered species. Ethnobotanical studies will be the main source for the development of natural and synthetic medicines. Ethnobotanical knowledge has become the center of research conducted by world scientists in recent years. All this information can serve for the preservation, protection and effective use of plants in the research area in folk medicine.

2. Methods of research.

2.1. Research area: Bukhara region is located in the south-west of Uzbekistan, its total area is 40,220 km2 (http://geografiya.uz) [9]. Bukhara Region borders Khorezm, Navoi, Kashkadarya Regions, the Autonomous Republic of Karakalpakstan and the Republic of Turkmenistan, and 90% of the territory consists of sand dunes. Bukhara region ranks 9th in terms of population among 14 regions of Uzbekistan. The population consists of 1 million 990 thousand 400 people (https://stat.uz) [8], 62% of them are rural residents and 38% are urban residents. There are 11 districts and 107 villages in the province. 92.54% of the population of Bukhara region are Uzbeks, 3.13% are Tajiks, 1.28% are Russians, and 3.05% are other nationalities.

Picture 1. **Bukhara region, research area**

2.2. Ethnobotanical data collection. In order to collect ethnobotanical data, interviews were conducted in the form of a questionnaire based on the consent of local residents. Ethnobotanical data were collected in accordance with the ISE Code of Ethics 2006 (www.ethnobiology.net) [7]. The questionnaire consists of two parts: the first part covers the demographic information of the local population (gender, age, profession), and the second part covers the information about medicinal plants (scientific and local names of the plant, parts used in folk medicine, methods of drug preparation, and diseases used) [4] . Most of the conversations with local residents were recorded in audio form.

3. Obtained results.

3.1. Taxonomic information of medicinal plants. 1127 ethnobotanical data of medicinal plants belonging to 17 families, 57 genera and 80 species recorded by local residents during the interviews conducted in the research area. ("table 1.1") According to ethnobotanical records, species belonging to the Lamiaceae family (mint, mint) are mostly used by the local population for medicinal and other purposes. Species belonging to this family have been recorded 147 times, which make up 13.04% of the total. In the next figures, Asteraceae was recorded 132 times (11.71%) and Nitrariaceae was recorded 98 times (8.69%) [3].

"Table 1.1". Taxonomic structure of mentioned medicinal plants

№	Family	Category	Species	Recorded	Percent %
1	***Amaranthaceae***	6	28	64	**5,67**
2	***Asteraceae ceae***	9	12	132	**11,71**
3	***Apiaceae ceae***	5	7	58	**5,14**
4	***Brassicaceae***	4	6	39	**3,46**
5	***Convolvulaceae***	2	5	67	**5,94**
6	***Cyperaceae***	1	1	19	**1,68**
7	***Euphorbiaceae***	2	3	35	**3,10**
8	***Fabaceae baceae***	8	9	43	**3,81**
9	***Lamiaceae ceae***	4	4	147	**13,04**
10	***Malvaceae ceae***	3	4	46	**4,08**
11	***Nitrariaceae***	2	2	98	**8,69**
12	***Orobanchaceae***	2	3	61	**5,41**
13	***Papaveraceae***	2	3	89	**7,89**
14	***Plantaginaceae***	1	2	78	**6,92**
15	***Polugonaceae e***	2	4	53	**4,70**
16	***Ranunculaceae***	2	3	36	**3,19**
17	***Solanaceae***	2	4	62	**5,50**
	Жами	**57**	**80**	**1127**	**100**

According to the results of all the above analyzes, 49% of the medicinal plants recognized by local residents and doctors are used in tinctures, 51% in decoctions, ointments and other forms. It was found that leaves of medicinal plants are mainly 28%, stems 27%, seeds and fruits 14%, flowers 10% and roots 17%, and other parts have 14% indicators [3].

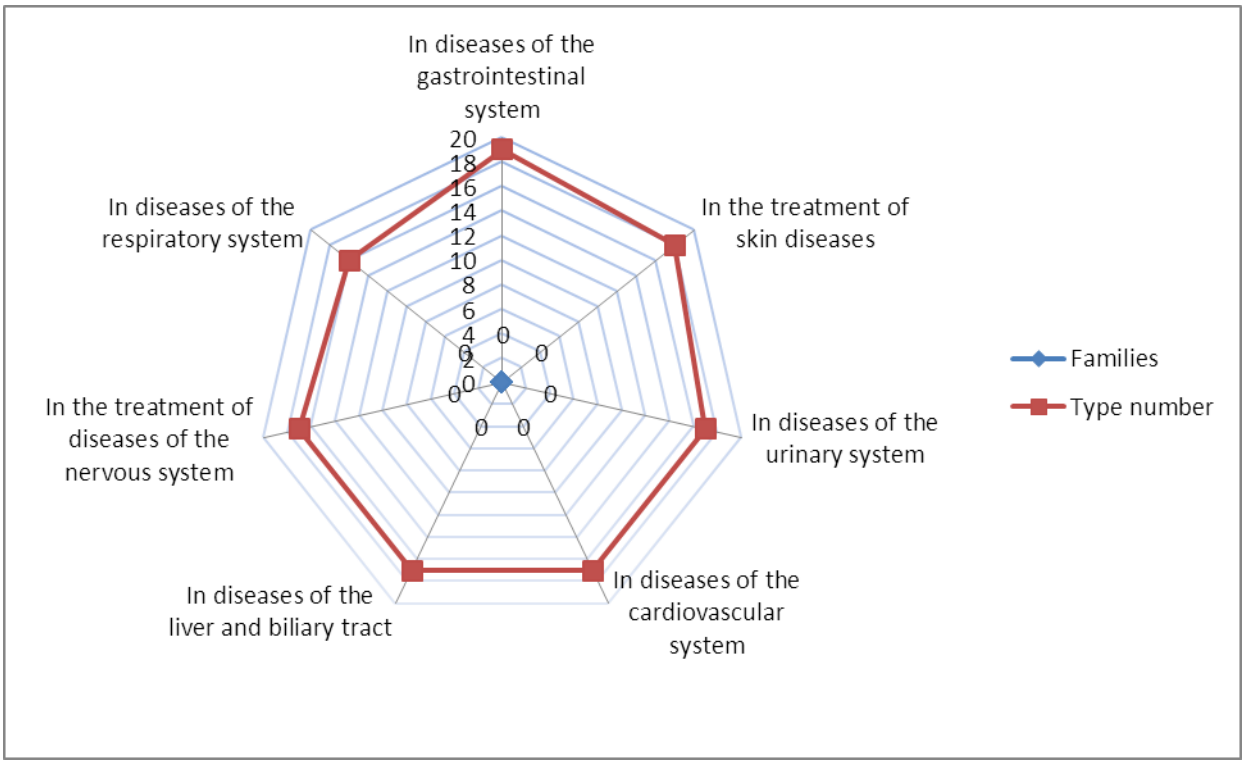
3.2. Application in diseases.

According to the World Health Organization (WHO), more than 20,000 different diseases have been identified and more than 15,000 drugs are used to treat them [5]. Medicinal plants distributed in Bukhara region, taking into account the natural geographical location and ecology of the region, 2008 O.Q. The classification developed by Hozhimatov based on 20 main groups of diseases was taken as a basis [5]. Medicinal plants in the region were analyzed according to this classification. They are as follows:

1. Diseases of the cardiovascular system;
2. Musculoskeletal system diseases;
3. Respiratory diseases;
4. Treatment of various forms of tuberculosis;
5. Diseases of the gastrointestinal system;
6. Liver and biliary system diseases;
7. Diseases of the urinary system;
8. Endocrine system diseases;
9. Diseases of the nervous system;
10. Skin diseases;
11. Gynecological diseases;
12. Oncological (tumor, cancer) diseases;
13. Parasitic (helminthic) diseases;
14. Diseases of the teeth and oral cavity;

15. Medicinal plants used in eye diseases;
16. Immune system diseases;
17. Mental illnesses;
18. In the treatment of venereal diseases;
19. Mechanical injuries and burns;
20. Medicinal plants used in the treatment of diseases of the blood system.

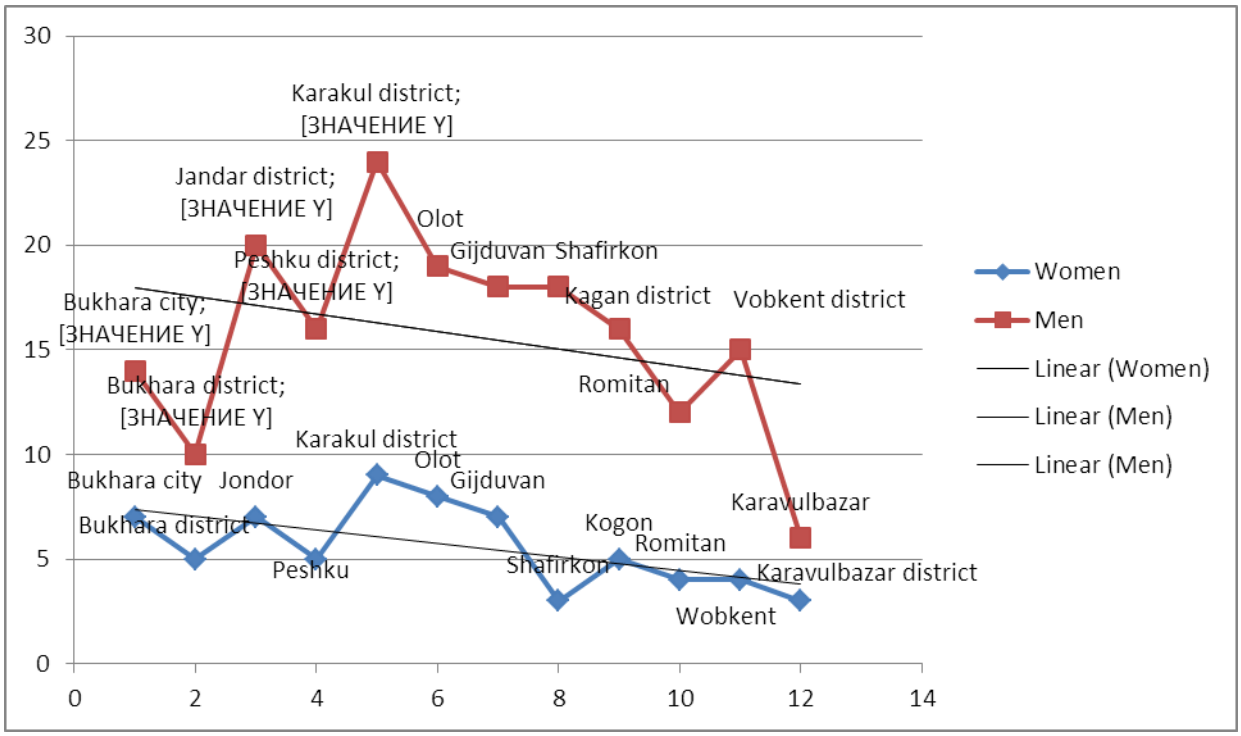
Medicinal plants are used in the treatment of various diseases due to their rich content of vitamins, biologically active substances and wide effects. According to the obtained results, the following medicinal plant families are the most; Apiaceae - 15, Asteraceae - 18, Amaranthaceae - 15, Brassicaceae - 17, Convolvulaceae - 17, Fabaceae - 17, Lamiaceae - 19, Plantaginaceae -16, Polygonaceae - 15, Rosaceae - 16 and Solanaceae - 17 groups were found to be used against diseases [4]. The result of the research shows that there are many types of the above families in the region.



Picture-1. Medicinal plants widely used in the region.

3.3. Demographic information of interviewed participants.

In the interviews conducted with the local population, a total of 249 representatives of the local population with various professions were interviewed. 67 (26.90) percent of them were women, 182 (73.09) percent were men [1]. During the research period, all interviews were conducted by asking neighborhood activists in the study area about people from whom ethnobotanical information could be obtained, and more interviews were conducted with these residents. It was also done with those who are active in social life, elderly people with local knowledge and those who practice medicine in the region (diagram 2). According to the exact age of the interviewees, the most information about medicinal plants was obtained from the participants aged 58-76 years.



Picture-1. Demographic information of interviewees.

Summary. The following conclusions can be drawn from the ethnobotanical interviews. First of all, the population from which ethnobotanical information can be obtained is almost all elderly people, and with the passage of time, the possibility of preserving this information (the rich experience of folk medicine) decreases even more. Secondly, the people who use local medicinal plants are also old, or the healers do not fully pass on the information about their medicinal secrets, because these secrets are often passed down from generation to generation. Third, the area is rich in wild medicinal plants, but the local population uses most of these plants as fodder for livestock. There is not enough information about the medicinal or beneficial properties of these plants in the population. In order to prevent the loss of ethnobotanical knowledge in the near future, it is necessary to document the collected data and create programs that highlight the distribution of medicinal plants in the area and their healing properties.

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