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# History and Methods of Studying Medical Plants

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**Abstract:** The formation and development of beekeeping mentioned in this article is directly related to honey-bearing (nectar-bearing, honey-bearing) plants that serve as their food source. undefined Today, based on the Decree of the President of the Republic of Uzbekistan No. 239 dated June 12, 2023 Resolution of the Cabinet of Ministers of the Republic of Uzbekistan On additional measures to support the beekeeping industry and pollination of agricultural crops by bees In order to develop the beekeeping industry in the republic on the basis of modern scientific approaches, create more favor the further development of beekeeping in our republic, the timely and complete pollination of our vast plantations should be one of the urgent measures of today.

**Keywords:** Species composition of honey plants, nectar productivity, nectar release dynamics, pollinating plants, nectar productivity of cultivated plants, increased yields when pollinated by bees, honey plants of Uzbekistan, beekeeping, pollination of agricultural crops by bees.

**Introduction:** It is known that the comprehensive study of honey-bearing plant species, which are the wealth of our country's flora, and their effective use are the main ones. Abu Rayhan Beruni dedicates a chapter of his book "As-Saydana fit-tib" to honey. In it, he collects and presents information about honey and beekeeping up to the 11th century. The types of honey and its origin are discussed. The work tells about the juicy and delicious honey obtained from mint, thyme, astragalus, shambala, and balcuray plants.

The in-depth study of honey plants and flower juice began in the late 19th and early 20th centuries. The journal "Turkestan Agriculture," published in Tashkent since 1906, plays an important role in the development of beekeeping and the study of honey plants. A.A.Aleksandrov (1906) was among the first to describe the main honey plants of Kattakurgan, Samarkand, Khujand, and Tashkent on the pages of the journal, noting that white acacia is their "queen."

He writes that the temperate climatic conditions of Central Asia and the diverse plant world contributed to the development of beekeeping in these areas. In the hot climate of Uzbekistan, egg and linden have good honey content. Also, I.A. Brjezicius (1907) notes that capers, honeysuckle, qashqarbeda, and other plants produce nectar well.

A. Mikhailov (1909), V. Yuferov (1911), O. T. Zemlyanov V.L. Komarov, S.N. Korzhinskiy, B.A. Fedchenko, and others extensively studied honey plants and the plant world of the Turkestan region. V.D.Layoc (1949 - 1950) determined the amount of nectar in some fruit trees and hemp plants.[2]

The richness of honey plants in the Pskem, Ugam, and Maidantal ranges of the Western Tien Shan is noted by G.I. Pechisheva (1962) and V.A. Rogov (1968, 1969, 1970). In Tashkent and adjacent beekeeping regions, more than 100 species of honey plants have been identified. Bulgakova, Suvorin (1961), and L.L.

Bulgakova (1972, 1973, 1975, 1976, 1978) identified 220 species of honey plants in the arid regions of the Syr Darya. It has also been established that lipa flowers acclimatized in the Tashkent Botanical Garden produce 4-6 to 16-18 mg of nectar, and the nectar concentration is 55-60% (Shumaeva, 1972).

In the Khorezm region, R.S.Sobirov (1972, 1982) identified 236 species of honey plants belonging to 142 genera and 47 families. Under the scientific supervision of G. Hamidov, the postgraduate student R. Mukhamatzyanov (1977, 1980) studies the honey plants of the Surkhandarya region. There are 487 species of honey plants in this region. According to R.Kh.Khudoyberganov (1959), when cultivating capers, the nectar yield reached 990 kg/ha. [3]

A number of researchers Golovkova (1966), Ziyadov (1967), Linov (1970, 1971, 1972), Kashchenko, Bushkova (1971), and Rahmonov (1971) studied honey plants in neighboring Kyrgyzstan and Tajikistan.

When cross-pollinated by bees, the yield of alfalfa and legumes increases by 35-40%, sunflower by 50-60%, and melons by 100-150% (Ponomareva, 1973, Gluxov, 1974, Krivtsov, et al.).

**METHODS**

Since 1960, at the Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan, G. Hamidov has been widely studying honey plants and their resources in almost all regions, as well as in the border regions of Kyrgyzstan, Tajikistan, and Kazakhstan (Arslanbob, Shahimardan, Pochchaota, Zamin, Sangardak, Bobotoğ, Kuhitangtoğ). The nectar extraction and nectar concentration of the medium-staple (28 varieties) and fine-staple (17 varieties) cotton varieties common in Uzbekistan are determined. For the first time, the resources of honey plants in the context of desert, foothill, mountain, and pasture zones of our country's vegetation cover have been determined. A total of 38 species of plants were planted in the experimental plots, including sainfoin, rapeseed, lion's tail, bluegrass, Kashkarbeda, Togray khon, lemon grass, sage, and their bio-ecological state and nectar extraction were studied. All nectar resources, natural species, cultivated species, cotton, hemp, fruit orchards, melons, and others are counted.[5]

The impact of ecological factors on Uzbekistan's honey plants and nectar production and other data were presented at the International Congresses on Beekeeping. A monograph and several brochures have been published on this topic. For the first time, the author compiled a map of Uzbekistan's honey plants. (Map of honey-bearing lands of Uzbekistan, scale 1: 1000 000, G.Hamidov, 1985). [1]

Beekeeping is an important branch of agriculture, and about 70 enzymes, vitamins, hormones, and other chemically active substances have been found in honey, which is an extremely beneficial food for humans, and in bee milk, propolis, bee products, which are considered raw materials for industry. They are an important source for treatment.

In addition, beekeeping plays an important role in increasing crop yields. It turned out that 80% of flowering plants in our biosphere are susceptible to cross-pollination, and the proportion of bees among insects ensuring their cross-pollination is 80% (Beekeeping of Entomophile Crops and Honey Base,1981).

The development of beekeeping depends on providing it with sufficient fodder. Their food source is nectar and pollen released by the plants' flowers. In our country, the main food source for beekeeping industries is natural meadows, large orchards, flower beds, cotton fields, shrubs, sunflowers, hemp plantations, melon crops, ornamental plants, and others. Bees play an important role in cross-pollination of cotton plantations and increasing their yields.

The results of the conducted experiments show that the yield of cotton fields pollinated by bees increased by 10-23%. Advanced experience in beekeeping has shown that with each bee colony placed in cotton fields, up to 20-40 kg of honey can be obtained (G. Khmidov, 1976). [1]

Calculations show that the income from the pollination of all agricultural crops by bees is several times greater than the income from their direct products.

On the instructions of the regional administration of the Fergana Regional Beekeepers Association, within the framework of the Agrolinx project, which manages the activities of farmers caring for fruit trees in the region, a study will be conducted on the industrial pollination of fruit orchards and its impact on yields. Experimental work was carried out in the conditions of the Quvasoy and Fergana districts. The experiment was conducted on fruit crops widely distributed in the Fergana Valley, as well as across the republic: peach, quince, persimmon, apricot, apple, plum, almond, cherry, and sweet cherry (a total of 9 species). It was also established that when cotton and sunflower plants were pollinated by bees according to the above-mentioned project, their yield increased by 4.8 and 11.2 centners/ha.[3]

These and other studies have shown that pollinating fruit trees, sunflowers, alfalfa, sainfoin, melons, and other crops by bees significantly increases their yield.

**FINDINGS**

Considering the prospects for studying beekeeping and honey plants in our country, it is necessary to consider the timely, efficient, and comprehensive use of natural and cultivated plant resources. We have enormous opportunities for the development of beekeeping, which is considered a highly profitable industry. It is necessary to consider the distribution of vegetation cover by vertical zones, the sequence of flowering of plants according to their biological properties, and the duration of their ontogenesis. To increase the productivity of beekeeping industries, it is necessary to use advanced technologies and experience. Using strong bee colonies, increasing labor productivity, using strong and healthy bee colonies in the farm, providing them with sufficient and quality feed throughout the year is an important factor. For the development of a healthy bee colony in spring, it is desirable to have 6-8 kg of honey and one or two frames of pollen.[5]

It is necessary to search for prospects for providing the beekeeping industry of our republic with feed sources. In this matter, we must pay attention to the following:

Timely and effective use of the entire vegetation cover of our republic;

- Timely placement of bee colonies in orchards (agrocenoses) consisting of all fruit trees and shrubs;

- Placement of bee colonies in all cotton fields;

- Effective use of sunflower, alfalfa, sainfoin, rapeseed, and other plants;

- If possible, create an artificial source of honey plants by planting such important honey plants as qashqarbeda, rapeseed, arslonquyruq, tog'rayxon, kiyikuti, kokuti (sinyak) in limited areas;

Identifying factors that positively influence the production of nectar by plants;

- Determination of nectar secretion dynamics;

- Conducting research aimed at determining the function of nectar secreted by plant flowers;

- Study of the coevolution of bees and nectar plants;

- Studying agrotechnical and other factors that positively.[6] The beautiful nature and climatic conditions of our republic allow for the successful development of beekeeping, as well as all branches of agriculture. Our vast meadows, diverse hills, boundless orchards, cotton fields, ornamental shrubs, trees, and flower beds serve as a great source of food for bees. Nevertheless, we can say that at present, the level of development of this sector of the economy cannot fully meet the growing demand and needs of our people.

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