

THE HISTORY OF THE ACTIVITIES OF SCIENTIFIC RESEARCH INSTITUTES IN
THE DEVELOPMENT OF AGRICULTURE IN THE UZBEK SSR

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Abstract

Due to its location along the Great Silk Road, Central Asia had attracted Russia's attention since ancient times. This region, serving as an important hub connecting East and West, was naturally appealing for trade and exchange of goods, attracting merchants and scholars alike. Later, in the 19th century, the Russian Empire expanded its territories in Central Asia to ensure border security, while simultaneously gaining access to raw materials such as cotton. Rich in cotton and oil fields, Central Asia was vital for Russia's economy. To promote the region's economic development, study natural resources, establish administrative systems, and strengthen political control over the territory, the Russian Empire created scientific research institutes in Central Asia. Their research focused on agriculture, industry, geography, and ethnography, enabling Russia to better govern and exploit newly acquired lands.

The Soviet government was particularly interested in studying the lands of the Uzbek SSR, which were rich in agricultural crops such as grain, vegetables, fruits, berries, and grapes. This article provides information on the scientific activities and achievements of research institutes and other organizations in the field of agriculture in the Uzbek SSR. Evidence is presented regarding the necessity of creating new types and varieties of crops, studying soil conditions, land fertility, and climate in certain regions of the republic, such as the Fergana Valley. The article also mentions factors hindering agricultural development, such as pests (insects), and notes that recommendations from institutes on combating them were often ignored by local authorities.

Keywords: research institute, station, seed production, various fiber varieties, research, center, staff, cotton, selection, seed breeding, laboratory, canals, raw materials.

Purpose: The development of agricultural sciences in the Uzbek SSR aimed to improve the efficiency of producing crops such as vegetables, fruits, berries, grapes, and raw materials, as well as to improve the living conditions of the rural population. This was essential for the country's industrialization and for meeting the growing needs of the population.

Materials and Methods: The scientific research institutes of the Uzbek SSR played a crucial role in developing agriculture, conducting studies in areas such as breeding, crop production, animal husbandry, mechanization, and plant protection. These institutes developed and introduced new technologies and varieties that contributed to higher yields and efficiency in agricultural production. The main sources used in this article include materials from the historical archives of Uzbekistan from the Soviet period, as well as those preserved in the Alisher Navoi National Library of Uzbekistan.

Introduction: The Horticulture and Viticulture Experimental Station of the Uzbek SSR was renamed the Fruit and Vegetable Research Institute in 1947, and in 1956 it became the Uzbek Horticulture and

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Viticulture Research Institute. The institute included the Uzbek Viticulture Research Institute, the Samarkand Fruit Breeding Experimental Station, the Subtropical Fruits Experimental Plot of Southern Uzbekistan, the Namangan Base Point, the Bostanlyk Experimental Plot, the Charz Experimental Point, as well as the Mirzachul and Fergana base points [1, p.75].

In 1934, a subtropical fruit experimental plot was established in Denov, Surkhandarya, in the southern part of the Uzbek SSR. Based on the climatic conditions of Denov, this station and the Uzbek Fruit and Viticulture Breeding Station began cultivating oriental persimmons brought from China and Japan, virgin persimmons from North America, and various subtropical fruits from Asia Minor, Afghanistan, Iran, and other countries. The station also experimented with and adapted crops such as sugarcane, date palm, pomegranate, and sweet potato to the conditions of Uzbekistan [2, p.75].

Over the years, the station successfully acclimatized citrus fruits, particularly the Meyer lemon. Around five thousand pomegranate saplings were planted, and their frost resistance was studied. As a result, pomegranate varieties capable of withstanding frosts below -18°C were developed. Selective breeding also produced the Denov Sweet Persimmon, yielding up to 135 kg per tree, and the "Pioneer of Uzbekistan" variety. The station distributed more than 10,000 persimmon saplings and over 60,000 other fruit seedlings to collective and state farms in Surkhandarya Region [3, p.75].

Since 1959, the station developed 62 varieties of pomegranate, 37 of fig, 20 of persimmon, 72 of grape, 32 of pear, 64 of apple, and other fruit trees. Methodological manuals on irrigation and fertilization of persimmon trees were prepared, and from 1964 subtropical fruit plantations were established on 20 hectares of land at the Zhdanov Collective Farm and the "40 Years of October" Collective Farm in Termez District. By this period the station managed 127.5 hectares [4, p.3].

The Uzbek Fruit and Viticulture Breeding Station was later transferred to the All-Union Research Institute of Horticulture, Viticulture, and Winemaking named after R. R. Schroeder. Institute scientists carried out research on biological, agronomic, and breeding issues of fruit crops, analyzing the soil and water requirements of fruit and berry plants. Based on experimental results, by 1957, farms in the Uzbek SSR began cultivating three types of onion, three varieties of carrot, and 14 melon varieties. Through hybrid methods, two varieties of pickling cucumber and four tomato varieties were produced. In total, 48 new varieties were created, 37 of which were cultivated in Uzbekistan, with 11 passing state trials. Potato varieties suitable for warm regions were also developed. Out of 2,000 studied varieties, 14 matched Uzbekistan's specific conditions, and seven were zoned and recognized as promising [5, p.32]. Selective breeder Obidov developed the promising potato varieties "Obidov-1" and "Obidov-2," which underwent state trials in 1957 [6, p.78].

In addition, across other parts of the Uzbek SSR, research was conducted on cultivating seedlings adapted to cold and drought, as well as on improving productivity. This included studies in the Fergana Valley, virgin lands, the lower Amu Darya, and newly developed foothill and mountain areas. Institute scientists also studied wild fruit species of the Western Tien Shan, along with cultivated varieties in Uzbek orchards, other Soviet regions, and foreign countries. During these studies, 59 fruit species were recorded in the Fergana Valley, 70 in the Amu Darya basin, and 100 in Bostanlyk District of Tashkent Region. In 1957 alone, 1,700 local and imported fruit varieties were studied, focusing not only on yield and appearance but also on drought, salinity, and disease resistance. As a result, new types of apricot, apple, pear, quince, walnut, almond, pomegranate, fig, and others were developed. By 1957, the institute managed 1,718 hectares of experimental plots, planting about 1.5 million seedlings of grape, subtropical fruits, and berries.

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In the saline soils of the lower Amu Darya, it was discovered that due to the extremely dry climate and the absence of fungal diseases, apricot cultivation was more promising than horticulture or viticulture.

Based on research, scientists of the R. R. Schroeder Institute of Horticulture and Viticulture divided the republic into 20 zones according to four main criteria for horticultural and viticultural development. These included the Tashkent zone (pistachio and grape), Bostanlyk zone (horticulture and viticulture), Parkent zone (walnut, wine grapes, and local orchards), Dalvarzin zone (local orchards and viticulture), Fergana zone (fruit and subtropical orchards for dried fruit), Kokand zone (stone fruits and dried fruit), Chust-Pop zone (stone fruits and viticulture), Namangan zone (stone subtropical fruits), Samarkand zone (raisins, pistachios, and stone fruits), Kattakurgan–Jizzakh zone (export raisins and local orchards), Bukhara zone (stone fruits, dried fruits, raisins), Shakhrisabz zone (pistachios, stone fruits, subtropical fruits, viticulture), Denov zone (pistachios, stone fruits, viticulture), and local-value zones of Karshi, Termez, Khorezm, and northern and southern Karakalpakstan. The climate and soils of each were carefully studied [7, pp.28–29].

In 1971, the Central Committee of the Communist Party of Uzbekistan issued a resolution (20 July 1970) “On increasing the cultivation of melons, potatoes, fruits, and grapes, improving processing, and ensuring supply to the local population.” Based on this, at the Samarkand Fruit Breeding Experimental Station under the Uzbek Institute of Horticulture and Viticulture, out of 1,700 fruit varieties studied, 50 were identified as promising, most of which were included in the standard varieties of the Uzbek SSR. These included eight varieties of apricot, ten of peach, eight of apple, and nine of pear, totaling 35 high-grade varieties.

Cold-resistant pear varieties and disease-resistant quince varieties were developed. Methods of viticulture in reclaimed lands, mountainous regions, and high water table areas were also studied. Rare grape varieties such as Delicat, Tana Kozi, Shtur-Angur, Kora-Kaltak, Black Andijan, and Shakar-Angur were researched and included in the standard assortment of Uzbekistan. Hybrid varieties were also introduced. In the rain-fed lands of Kok-Buloq, Dehkanabad, and Miraki districts of Kashkadarya, and Qoraqishloq and Urgut districts of Samarkand, viticulture was found to be feasible.

Together with subtropical fruit experimental plots and base points (Namangan, Bostanlyk, Mirzachul, Fergana), scientists identified 150–200 hectares of rain-fed lands suitable for horticulture and viticulture in the Fergana Valley, Kashkadarya, Surkhandarya, Samarkand, and Tashkent regions.

The institute also developed elite apple varieties. At the Bostanlyk station, scientists studied wild plants of the Western Tien Shan, while in the Fergana Valley, research was carried out on increasing productivity on both small and large clod soils across 60,000 hectares of land.

However, yields of orchards and vineyards declined mainly due to failure to follow basic agronomic rules, low specialization and concentration of production, and thinning of perennial plantations. Pest and disease control measures against spider mite, fruit moth, powdery mildew, scale insects, and whitefly were neglected. Quarantine pests such as California scale, oriental fruit moth, and Colorado beetle spread further each year. Preliminary calculations showed that in 1988 alone, farms in Samarkand, Tashkent, Kashkadarya, and Jizzakh regions lost over 34,000 tons of fruit, worth 10.2 million rubles [8, pp.2–3].

Although Uzbekistan accumulated extensive experience in pest and disease control for cotton, this was not effectively applied to fruit and vegetable cultivation. The irresponsibility of managers and specialists of the Republican “Uzselkhozkhimiya” Scientific-Production Association also hindered

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resolution of these issues. Farms were not adequately supplied with chemical and biochemical protective agents, while improper storage and use of toxic chemicals in some regions led to environmental pollution. The specialists of “Uzselkhozkimiya” deemed the measures taken against pests and diseases of orchards, vineyards, and vegetables unsatisfactory [9, p.5].

Conclusion. It can be stated that the Soviet government was interested in studying the lands of Central Asia, and especially the Uzbek SSR, which was rich in crops, vegetables, fruits, berries, and grapes. At the same time, it must be emphasized that the Soviet authorities paid special attention to developing these crops. Entire committees, agricultural complexes, and research institutes were established to monitor the development of fruit and grape cultivation.

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