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# HISTORY OF DISTRIBUTION AND TRANSFORMATION PROCESSES OF NEW GRAPE VARIETIES IN TURKESTAN

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## ABSTRACT

***This article describes the history of the introduction of new grape varieties and transformation processes in the Turkestan region in the late XIX-early XX centuries.***

**KEY WORDS:** ***Turkestan, new grape varieties, viticulture, Ati-Vedro, Frank-pino, Merlo, Saperani Muscat, Yakrima, Kristi, Yakrima-Dolche, Black Ptiverdo, Frank-mens, Isabella, Caberno-Savinon, White Champagne, Riesling, Sotern, Oporto, Modern-Malvazi, White Muscat, Filatov, Prokhovskiy, Tolochinov, N.I.Pervushin, N.I.Ivanov.***

## INTRODUCTION

As a result of the occupation of Central Asia by the Russian Empire and the development of trade relations with the Russian state, the demand for domestically grown grapes and grape-made products such as raisins, muesli and molasses increased in the central markets of Russia. This, in turn, led to the gradual development of viticulture and winemaking in the country.

The attention of the colonial government was focused on the favorable natural climatic conditions of the country, the stability of fertile soils and the change of seasons, as well as water resources and the peasant population, the basic principles of traditional agriculture, cotton, fruit, grain, viticulture and animal husbandry.

The government has begun to mobilize leading experts in these areas. He also took control of the country's forests and deserts, distributed seeds of new crops, seedlings of fruit trees, vines, introduced them to the local agricultural culture, and taught them the experience of artificial irrigation.

## MATERIALS AND METHODS

Although the policy of the imperial government in the country was aimed at looting, violence, Russification of the population, turning the country into a raw material base and a market for industrial goods as soon as possible, administrators and naturalists, naturalists and agronomists were mobilized to the country. Regardless of the attitude of the agricultural specialists to the local population, they have done a good job in studying the nature and climate of the region, improving soil composition and soil fertility, acclimatizing new crops, applying fertilizers, bringing modern equipment to the farm. A number of measures have also been taken to establish the agricultural sector on a scientific basis and to form new branches in this area.

Turkestan has become a place of research and experimentation for scientists from central Russia as an "undiscovered reserve." On February 26, 1896, the State Council and the Ministry of Agriculture of the colonial government approved the proposals for the construction of the "Turkestan Experimental Agricultural Station" and adopted a special resolution to this effect[13:126].

In the autumn of 1897, the Turkestan Experimental Agricultural Station was opened on the Tashkent-Shimkent road, 12 km from Tashkent, to implement a special resolution on the implementation of the special decree for 1895-1897. Professor Garnik-Garnitsky was appointed the first director of this station, which had 66 acres of land, and later, from 1902 onwards, it was headed by R.R. Schroeder. The station operates in three main areas: a) field crop testing; b) dealing with fruit and viticulture issues; c) conducted laboratory observations, experiments on the study of the growing season of plants, etc. The experimental station also has important tasks, such as the introduction of new machinery and equipment in agriculture, tools, identification of the causes of diseases in crops, the creation of an important basis for their prevention and treatment, and experiments

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in horticulture and viticulture[13:127-129]. This experimental station also played an important role in bringing new varieties of agricultural crops to the region, including new varieties of grapes, adapting them to natural climatic conditions.

The Turkestan Experimental Agricultural Station has also played an important role in improving such works as the development of agro-technical methods of cultivation of vineyards, the establishment of special nurseries for the cultivation of fruit plants and vine seedlings. Since 1911, this experimental station has developed and implemented programs on agro-technical rules, which are important in the development of viticulture, the cultivation and processing of new vine seedlings, especially in the application of these measures in the vineyards. New, high-yielding and wine-friendly varieties of grapes were brought to Turkestan from Ukraine (mainly Crimea), Moldova, the Caucasus and other places. Later, in 1869, in addition to the Crimea, the Caucasus, Ukraine, European countries such as France, Germany, Hungary, Bulgaria, and even the American continent, new varieties of grapes were brought to Turkestan and localized.

The first new grape varieties were brought to Turkestan from abroad in 1868 in Tashkent district. Later, Samarkand became the main center of the region for the cultivation of new imported grape varieties, the establishment of large grape plantations. One of the oldest gardeners, Mr. Chuenko, noted that new varieties of grapes were first brought to the country from Europe by Colonel NN Raevsky and Mr. Fetisov, one of the leading experts in viticulture and winemaking. Later, Colonel Raevsky hired an experienced specialist, Mr. Chuenko, with the help of which he brought 3,000 European grape branches to Tashkent and planted and cared for them[8:94].

According to the sources, the propagation of new varieties of grapes on a planned basis was initiated by a Russian specialist NI Ivanov, who initially established a vineyard on 3 acres of land in Tashkent district. Along with new grape varieties brought from the Crimea, local (mainly Charos) varieties began to be grown on his grape plantation, and gradually a rich harvest began to be obtained from them. Over time, the work of specialists involved in the field of agriculture and horticulture was revived, and each gardener from Russia had 25-30 acres of experimental-industrial vineyards, where both local and European varieties of grapes were cultivated. For example, NI Ivanov, brothers Pervushin are famous in this regard, their experimental-industrial gardens were established in 1873. Later, in 1876, Prokhovsky, a leading expert in the field, founded the first viticulture and winemaking firm in the country. Dozens of local and new grape varieties have been grown in the vineyards of these specialists and a rich harvest has been achieved from them [10:59-60; 13:74-75; 14:237-239; 4:234].

Agronomists and breeders from the Russian Empire, amateur farmers, in addition to adapting new grape varieties to the natural climatic conditions of the region, also studied local grape varieties and their specific characteristics. These specialists also conducted scientific research, such as comparing new grape varieties imported with local varieties, creating new varieties by mixing them with each other. The main purpose of this was to establish a continuous system of production of wine and other alcoholic beverages from the lucrative branches of industry on the basis of viticulture, as well as other branches of horticulture that serve the interests of the Russian Empire.

Over time, the owners of experimental plantations, based on the experience gained in this area, expanded the cultivation of new grape varieties in Turkestan since 1888, and now they not only grow new varieties of imported grapes, but also distribute and sell them to hundreds of other gardeners.

Matros, one of the new grape varieties brought to Turkestan from Shirvan (Azerbaijan) at the end of the 19th century, was distinguished from other grape varieties by its cold hardiness, resistance to diseases of grapes, as well as high yield and yield of wine. For example, this variety of grapes surpassed new grape varieties such as Merlo, Grenash, Murved, with features such as the ability to get 600-700 buckets (1 bucket on average 12-15 liters) of quality wine from each tenth of the land of the garden.

Even grape varieties such as Pino-Farn from Southern Crimea, Caberno-Savinon from France, Caberno-Fran, Carmenera, Merlo, Verdo, Molebek, Pino-gray, Nino-Blanc, Aligata could not compete with the Sailor in yield, as well as in the taste and color of wine [7:177-183].

Another leading specialist in the field of viticulture in the country was A.Pullo. This expert compared European and Asian grape varieties such as Kamern, Lafit, Caberno-Savinon, Pedro-Jimmenes, Oporto, Sapperani, Alexandria Muscat, White, Red and Black Muscat with local Charos grape varieties and classified their unique characteristics. In particular, this expert noted that Charos, one of the local grape varieties, produces a stalk in one year and yields in the second year, while some of the new varieties imported from abroad are harvested in five years. He also draws attention to the peculiarities of local grape varieties in comparison with new grape varieties, saying that the branches of Charos grow 7-8 arshin a year, while the branches of new varieties imported from Europe grow slowly [9: 58-59].

This means that Tashkent gardeners NI Ivanov and II Pervushin, as well as Samarkand

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gardeners AL Filatov and RS Prokhovsky not only brought new grape varieties to the country, but also adapted these new grape varieties to local conditions. have also made a significant contribution to the development of scientific research on the specific characteristics of local grape varieties.

In addition, experts in this field, such as N.I.Ivanov, I.I.Pervushin, A.L.Filatov and R.S.Prokhovsky, introduced to the country new varieties of grapes, such as Ati-Vedro, Frank-pino, Merlo, Saperani Muscat, Yakrima. , About 20 new varieties of grapes, such as Kristi, Yakrima-Dolche, Isabella, as well as black and red varieties of grapes Sotern, Riesling, Madera, Gro-Risling, as well as about ten new varieties of grapes such as White Muscat, yellow Alexandria, Shosla have done a great service [7:177-183; 16:142; 11:322; 4:281].

In the creation of new grape varieties, along with local varieties, selection work was carried out by mixing new varieties imported from the Crimea, Caucasus, Europe and America, as well as local and European varieties with wild grape varieties. Especially in 1909-1910, attention was paid to this aspect, and even along with ornamental trees, localized varieties of Begnona wild grapes were mixed and new grape varieties were created[6:187-190].

In the early twentieth century in the districts of Samarkand region on 50 acres of land grapes imported from abroad, such as Black Ptiverdo, Frank-mens, Isabella, Caberno-Savinon, White Champagne, Riesling, Sotern, O-Porto, Modern-Malvazi, Lacrima-Christian, White Nutmeg. varieties are cultivated and harvested to the satisfaction of gardeners [3:163; 12:136; 4:326].

Not all amateur gardeners have always achieved the expected results when acclimatizing new varieties of grapes. For example, some imported new grape varieties have not been able to adapt to local conditions, grape grains have become smaller, the taste has become sour, and yields have also dropped significantly. Therefore, these specialists had to constantly research to adapt new grape varieties imported to the country to the natural climatic conditions.

The above-mentioned experts also provided information in their reports on the total expenditures on grape plantations during the year, focusing on the economic aspects of the industry. For example, NI Ivanov notes that he spends an average of 159 rubles a year on the development of his grape plantation. He also developed and implemented agronomic rules for processing grapes on his plantation, which in turn taught local gardeners [13:76].

According to the agro-technical rules developed by NI Ivanov, the vines should be opened from March 15 to April 1 and buried to protect the vines from the cold before November. He also spoke about the wages paid to workers on his vineyards, noting that he spends an average of up to 15 rubles on workers who cultivate one tenth of the land. It is also worth noting that NI Ivanov for the first time introduced the use of a plow attached to 1 horse instead of manual labor between rows of grapes. This is because this method has increased labor efficiency in the cultivation of vine row spacing in vineyards. NI Ivanov has been engaged in this training for many years, has achieved good results in adapting new varieties of grapes to the natural climatic conditions of the region, distributed new varieties of grapes to other gardeners and exchanged experiences [2:3-5; 5:297].

In the Turkestan region, grape diseases (most common diseases: cholera, fungus, rust) or infertility were frequent due to extreme hot continental climate, dry and cold winters, and rapid changes in air flow. In particular, according to sources, in 1907 the weather was unfavorable for gardeners in Tashkent, and on April 13 and early May it snowed. By this time, Russian gardeners had discovered buried vines on their plantations. Local gardeners, who were well acquainted with the nature of the area, had not yet opened their buried vines at that time. For this reason, Russian gardeners had lower yields this year than local gardeners [2:3-5; 1:65; 15:61].

In solving these problems, gardeners have been provided with theoretical and practical assistance by the staff and specialists of the experimental station established in the country. Indeed, at the experimental station, experiments were carried out on drugs for the protection of fruits and vegetables and cotton from disease (worms, wilt, leaf wilt, garmsel beating, etc.). Twelve species of diseases affecting fruit trees and their causes have been identified, effective work has been done on disease prevention, and sufficient experience has been accumulated in this regard.

In the last decades of the XIX century, the area under grapes in the Samarkand, Syrdarya and Fergana regions of Turkestan sometimes expanded and sometimes decreased. In a ten-year analysis from 1886 to 1896, an average of 5,558,344 pounds of grapes were grown annually in 14,644 acres of vineyards in these provinces. In 1892 alone, the Samarkand region harvested 2 million pounds of grapes. Samarkand had large grape plantations in Siyob, Mahalla, Khoja Ahror, Urgut, Yangi Kurgan, Angor volosts [13:79; 10:58-60; 17:43].

By 1913, horticulture and related crops had developed in Turkestan, with a total yield of 600,000 pounds. The price of grapes in this indicator amounted to 9,221,000 rubles[4:82].

Gardeners of the Turkestan region, who have extensive experience in the field of viticulture, also achieved high yields compared to other regions of the Russian Empire.

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As a result of their hard work and successful fight against diseases such as fungi, oidium, anthracnose, mildium, which are found in grapes, gardeners of Samarkand district of Samarkand region have managed to get up to 1500-2000 pounds of grapes from each tenth of the land.

In 1894, Samarkand region harvested 6,261,000 pounds of grapes, 94.7% of which was sold as raw fruit, and the remaining 5.3%, or 334,243 pounds of grapes, was used to make wine. This year, 11 million pounds of grapes have been harvested across Turkestan [10:58-60]. In 1899-1900, there were 4,918 desiatins of vineyards in Samarkand district and 1,772 desiatins in Kattakurgan district. In 1900, the yield from vineyards was 2,320,140 pounds in Samarkand district and 792,330 pounds in Kattakurgan district. The average yield was 485 pounds per acre of land [13:81-82; 9:116-117]. A comparison of these figures shows that Samarkand region is the leader in this area in terms of the share of grape harvest in Turkestan region, which is 52-53%, compared to other regions.

In terms of grape growing and winemaking, Syrdarya and Fergana regions are second only to Samarkand region, and there were specific reasons for this. In particular, in the Fergana region alone, most of the arable land in agriculture is mainly cotton, which in turn has hindered the cultivation of other crops. This is because cotton, which was an important source of raw materials for the colonial government industry, was more profitable than other crops [1:67].

The above figures show that the productivity of grape growing in the country is constantly increasing due to new varieties, and the demand for grapes and raisins in the country's foreign trade has increased. The variety and number of grape varieties in the region has tripled due to new varieties, and their number has exceeded 60 during the period under review.

Russia's colonial policy included plans to reduce the cost of imported and purchased alcoholic beverages (wine, cognac, vodka) by developing the viticulture sector in Turkestan, and in the future to generate large profits through the production and export of high-quality wine.

With this goal in mind, the colonial government has always tried to cultivate new varieties of grapes in the country and get a rich harvest from them, to establish the production of quality wine from the harvest. In particular, in the 1980s, Russian gardeners cultivated new varieties of grapes, such as Matros, Isabella, Sotern, White and Red Muscat, O-Porto and Riesling, each year on private farms, yielding up to 15,000 buckets per hectare. The high-quality "Russian wine" made from the harvest was highly valued at the fairs of Paris in 1893, Antwerp in 1894 and Champagne (1896) and won high awards. At the same time, Russian entrepreneurs gradually began to produce vodka from grapes[13:169-171].

The country also produces high-quality red wine, including three types of wines imported from Europe: Cabernet Savelon, Soperovki, Matros (Kara Shirvan), as well as local Kara Kishmish, Charos, Chillaki, Kara Hussaini[13:82; 7:177-183;16:154].

Red and white wines made from fresh grape varieties such as Merlo, Grenaj, Murved are also highly valued. The yield and wine yield of these varieties are also high, with an average of 500 to 700 buckets of grape wine per hectare of land.

The new grape varieties that came to Turkestan also had their own characteristics that differed from the local varieties. For example, while local grape varieties are susceptible to 11 types of these diseases, imported new grape varieties are less prone to such diseases, mainly chlorosis in 3-4 years, and it is easier to treat. Also, the yield of European varieties of grapes was higher than that of local varieties, and in the first year the yield was low, and in the third year it recovered and returned to its original state. In local varieties, the process took five to six years. New varieties of grapes, such as Oporti, White, Black and Red Muscat, are resistant to cold weather, and even under the influence of cold, the yield did not decrease to that extent. Most of the local varieties are considered frost-resistant. In addition, high-quality wines and other alcoholic beverages can be obtained from new grape varieties, especially in this regard, wines from White Muscat, Bordeaux, Sotern varieties were superior in quality to wines from local grape varieties such as Buvaki and Charos.

## CONCLUSIONS

The analysis of the above data leads to the following conclusions:

- Ati-Vedro, Frank-Pino, Merlo, Saperani Muscat, Yakrima, Kristi, Yakrima-Dolche, Black Ptiverdo, Frank-mens, Isabella, Caberno-Savinon, White Champagne, Riesling, Sotern, More than thirty new varieties of Oporto, Modern-Malvazi, White Muscat, and other similar grapes have been imported and adapted to the natural climatic conditions of the province;
- Experienced specialists in this field, such as NI Ivanov, II Pervushin, AL Filatov and RS Prokhovsky, have developed and implemented programs on agro-technical rules, which are important for the development and processing of viticulture. reached;
- One of the peculiarities of new grape varieties, which differs from local varieties, is that they have less type of disease, which is easier to fight and treat;
- Although the work on the development of viticulture on a scientific basis, the development of the wine industry in the country has yielded the expected results, but all economic opportunities were subordinated to the interests of the center.

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