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Viticulture And Winemaking: Problems, Solutions And Prospects For Increasing Export Potential

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ABSTRACT

The article analyzes the state of development of the viticulture and winemaking industry of the republic of Uzbekistan, analyzes the problem, develops recommendations to ensure the quality and safety of the wine industry and increase their export potential.

KEYWORDS

Viticulture, grapes, winemaking, variety, yield, medicinal properties, chemical composition, product quality and safety, export, international standard, Grapes are a wise plant.

INTRODUCTION

The earliest archaeological evidence of a developed wine culture dating back to the 6th millennium BC has been found on the territory of Georgia, including an 8,000-year-old ceramic vessel with traces of wine. Especially viticulture was developed in Ancient Greece. In greek

literature, wine is often mentioned, in particular, in homer's odyssey, there are many verses that mention wine. It was from Ancient Greece that the vine came to the Crimea, and from there it spread to Transcaucasia, Central Asia, the Balkans and Moldova.

Grape bushes are planted in rows with a distance between them from 1 to 3 m. The distance between the rows depends on the soil and climatic conditions and the system of formation of bushes. Cuttings are planted to a depth of 15 to 30 cm. Every two or three years, 20-30 t/ha of manure is required, each year ammonium sulfate or sodium nitrate (3-4 c/ha) is introduced in the spring, superphosphate (4-5 c/ha), potassium sulfate (1.5-2 c/ha) is introduced in the autumn.

Grape berries contain many useful substances: sugars, organic acids (tartaric, malic, citric, amber, etc.), pectins, minerals (sodium, potassium, calcium, phosphorus, iron, cobalt), vitamins, coloring and aromatic substances.



In total, more than 3000 grape varieties grow on the territory of the CIS countries.

By origin, selection methods and biological characteristics are distinguished:

- * Varieties-populations ;
- * Clone varieties;
- * Hybrid varieties

According to the properties of berries and the predominant use of the products obtained from them, grape varieties are divided into:

- * Table varieties
- * Technical grades
- * Seedless varieties
- * Universal varieties.

The fruits of grapes, as well as the products of their processing, have valuable medicinal, taste and nutritional qualities.

According to the content of nutrients, except for fats, grapes are close to milk. Caloric content and nutritional value of grapes

The calorie content of grapes is 72 kcal, raisins-281 kcal.

Nutritional value of grapes: protein-0.6 g, fat-0.6 g, carbohydrates-15.4 g

Nutritional value of raisins: protein-2.3 g, fat-0.5 g, carbohydrates-65.8 g

There are more than 8,000 varieties of grapes in the world. The most widespread:

- * Muscats - a group of grape varieties with a strong characteristic berry aroma;
- * Riesling - a white grape variety, as well as a variety of wine made from it.
- * Alaska-technical grape variety and wine from this variety.
- * Isabella is an American grape

Variety, consumed fresh and used in winemaking.



Grapes, especially red grapes, contain vitamins that are directly related to the blood system and hematopoiesis.

It also prevents the formation of cancer cells, improves immunity, cleanses the blood - and this is only a small part of its merits. Grapes are very useful for diseases of the liver and gallbladder, heart disease and metabolic disorders, depression and insomnia, and many other ailments.

Grape juice, which resembles breast milk in composition, is almost instantly absorbed by the body. This is the purest natural glucose in its most useful and easily digestible form.

Grape wine reduces the level of cholesterol in the blood, in moderate doses normalizes blood pressure. Kishmish, especially ground with walnuts, perfectly increases hemoglobin. In medicine, there is even a whole direction - ampelotherapy (viticulture), which was actively practiced by healers of the Ancient East, Rome and Greece.

Ancient winegrowers noticed that dried grapes have slightly different properties than freshly picked ones. Great Avicenna also said: "Grapes left to lie for two or three days after harvesting are better than those just picked. And when plucked and left to hang until the skin turns

yellow, it nourishes and strengthens the body well."

Kishmish and raisins (dried grapes) can be black and



yellowish in color. The difference between the concepts of

"raisins" and "kishmish" is that, **kishmish** is made from

boneless grapes, and **raisins** - with several bones.

Viticulture and winemaking in the territory of modern Uzbekistan has been developed since ancient times. About **sweet grapes** and medicinal properties of **wine**, skilled masters of winemaking is mentioned in the "**Avesta**", in the travel notes of many travelers and conquerors. Archaeological and paleontological studies prove these written data with material finds (clay vessels for wine, fossilized prints of fragments of the vineyard).

The long warm period of the year allows growing more than **40 grape varieties** in

Uzbekistan from the first months of spring to late autumn. Thanks to this, the Republic actively exports excellent wines, fresh and **dried grapes** (kishmish, raisins), sweet juices. By the way, Uzbek grapes received the Gold Cup of the international exhibition " **Golden Bunches of Grapes-2013** "("Golden Bunch Grapes - 2013").

"**Soyaki**", "**Bakhtiari**", "**Husayn**" is the ancient varieties of



Uzbek grapes, which have been grown here since time immemorial. Many varieties of grapes were imported to the territory of Uzbekistan from other countries, for example, the variety "**Taifi pink**" was brought by the Arabs. In the second half of the XIX century, the first specialized **factories for the production of Uzbek wines** were built on the territory of Tashkent and Samarkand.

One of the unique **grape varieties**, from which you can make different varieties of wine, is the **grape "Rkatsiteli"**. In the early stages of ripeness, table wines are obtained from it, in

the middle - strong wines, and already from grapes collected when the sweetness concentrate has reached the limit, excellent **dessert wines** are made.

The largest farms in Uzbekistan specializing in **viticulture** are located in the Samarkand, Surkhandarya and Tashkent regions. Grapes are also actively grown in other regions of the Republic - Khorezm, Ferghana, Navoi, Jizzakh, Bukhara, and Andijan, and much less in the Republic of Karakalpakstan.

In the **Bukhara region**, such varieties as "**Rkatsiteli**", "**Bishty**", "**Hungarian Muscat**" and pink, "**Aleatiko**" are mainly grown. In Samarkand-varieties "**Uzbekistan**", "**Shirin**", "**Gulya-kandoz**", "**Aleatiko**", "**Hungarian Muscat**". Among the varieties grown in the Tashkent region, "**White Muscat**" prevails, and the Kashkadarya region was glorified by "**Kishmish botir**" (**kishmish bogatyr**). Of course, other varieties of sweet grapes are grown in each region.

New varieties of Uzbek grapes are still being cultivated, and favorable economic conditions have been created in the Republic for farms specializing in viticulture. For example, until 2016, young seedlings imported from other countries are exempt from customs payment. It is planned to expand the former and build new farm plantations adapted for viticulture, actively introduce new technologies.



Currently, there are more than **16 thousand farms** in the republic specialized in the production of horticultural and viticultural products and about **5 thousand in the** cultivation of vegetable products, about 1000 large enterprises of the food and processing industry.

20% of all irrigated land in the republic is used for growing fruits and vegetables and viticulture products. The industry's gross output is about 40% of all agricultural products. More than 900 thousand people or 30% of the population engaged in the production of agricultural products are employed in this.

The volume of grapes produced in Uzbekistan allows not only to cover the needs of the population, but also to carry out export deliveries in significant volumes. The export potential of Uzbekistan's grapes consists of production capabilities, comparative advantages in terms of yield, quality, and price of grapes in foreign markets.

Thanks to this, Uzbekistan is a potential supplier of grapes to the markets of developing CIS countries. At the same time, the current situation is characterized by a number of problems, the solution of which will increase the export potential of viticulture and winemaking.

Uzbekistan is one of the largest producers of grapes in the world, and in the CIS region it confidently occupies a leading position in terms of the volume of grapes grown.

In terms of vineyard areas, Uzbekistan ranks 18th, and in terms of gross volumes of harvested grapes, it ranks 17th in the world. According to the **International Organization of Viticulture and Winemaking (IOV)**,

Uzbekistan ranks 15th in terms of total grape harvest, 6th in terms of table grapes, and 5th in terms of dried grapes in the world. The total area of vineyards in the republic in 2018 amounted to 150.7 thousand hectares, an increase of 17% over 5 years.

In 2018, 1,564.5 thousand tons of grapes were harvested in Uzbekistan. Of these, 13.2% (206.8 thousand tons) were exported, 9.4% (146.5 thousand tons) were processed by the wine industry, the remaining volumes were domestic consumption and processing of the food industry. It is worth noting that according to the IOW, the per capita consumption of table grapes in Uzbekistan is one of the highest in the world.

The yield of grapes in 2018 was 10.4 t / ha. The average yield of wine grape varieties was at the level of 10-12 t / ha.

In recent years, viticulture in Uzbekistan has been moving along a growth trajectory, increasing the area under vineyards, increasing the volume of harvest, as well as the supply of grapes for export. In absolute terms, the export of grapes for six years increased by **115.9 thousand tons, or 78%**. Currently, the export of grapes in the physical volume of exports of fruit and vegetable products of Uzbekistan **occupies 21%**.

The development of viticulture is currently receiving increased attention from the state. The adopted programs are aimed at expanding the area under vineyards, increasing yields and reducing resource costs through the introduction of modern technologies.

in addition, the presidential decree of 05.02.2019 provides for bringing the total area of vineyards of wine varieties suitable for

industrial processing to 29 thousand hectares in 2019-2021 **by creating new vineyards** on an area of **23.4 thousand hectares, the harvest from which will fully load the current production capacity of the wine industry.**

At the same time, there are certain problems that hinder the more effective development of the industry. among them, **The following should be noted:**

- Reduction of vineyards of wine varieties and reduction of their yield, which do not allow to fully load the processing capacity for the production of finished wine products with high added value.
- Non-compliance with the technical maturity of harvesting and delivery technologies, which leads to a significant decrease in the quality of wine.
- The lack of a specialized service for chemical protection of vineyards contributes to the widespread spread of diseases and pests.

The solution of the existing problems in the industry can be facilitated by a more correct professional selection of grape varieties, taking into account specific processing goals, international requirements for manufactured products, which will create the best prerequisites for obtaining high-quality wine products. In this regard, it is necessary to make more extensive use of foreign experience and new innovative technologies.

It is also advisable to develop organic, environmentally sensitive and sustainable vineyards in the hot, arid climatic conditions of the Republic.

- Reduction of vineyards of wine varieties and reduction of their yield, which do not

allow to fully load the processing capacity for the production of finished wine products with high added value.

The country has accumulated sufficient experience in the production of high-quality wine products, which have been repeatedly noted at international exhibitions and fairs.

The production capacity of the enterprises in 2018 allowed:

- process 200 thousand tons of grapes per year and produce 3.7 million dal of grape wine;
- 19.9 million dal of alcoholic beverages;
- 118.5 thousand dal of cognac;
- 87.5 thousand dal of champagne wines;
- 9.3 million dal of food alcohol, but they were not fully used.

Thus, given that the structure of consumption of alcoholic beverages is changing slowly, we can expect a growing volume of imports of wine and champagne, due to the untimely coverage of the growing consumption of this product by the population.

In this regard, it is very important to conduct a comprehensive study of the domestic market of alcoholic beverages and the volume of alcohol consumption by the population.

In the system of the wine industry there are **62 enterprises**, including: **16 enterprises of primary winemaking, 42 for the production of alcoholic beverages, 4 for the production of ethyl alcohol.** These include 17 joint ventures with partners from Russia, the United States, Bulgaria, Israel, Latvia, Germany, the United Kingdom, and Kazakhstan. There are also 82 specialized wholesale bases, which include 507 branded stores.

Enterprises of the wine industry produce more than **160 types of grape wines, 781 types of vodka and distillery products, 25 types of brandy and 13 types of sparkling and carbonated wines.**

Analysis of the wine industry indicates the **presence of the following organizational and production problems:**

- Due to the unsatisfactory supply of raw materials, production capacities are currently loaded at a relatively low level. In this regard, the current workload of existing production facilities does not allow to meet domestic demand and increase the supply of products for export;
- Over the past two decades, only 25% of enterprises that produce wine materials have been modernized, and the rest use morally and physically outdated equipment.
- To bring the domestic wine industry to a qualitatively new level, it is not enough to increase the area for technical grape varieties and the volume of wine production.

Currently, the state places special emphasis on the elimination of existing problems and the active development of the wine industry, which, if there is an appropriate raw material base, can become one of the leading sectors of the economy and significantly increase the export of products.

Along with the above, for the accelerated development of winemaking in Uzbekistan, it is also advisable to implement the following measures:

- In the countries that are leading wine producers, there are legally approved

systems of classification and labeling of wines. Their essence is reduced in general form to the classification of the quality of wine products, where the main indicators are a certain area of grape cultivation. Therefore, in the future, the main attention of winemakers will be directed to the start of production of original, elite and branded Uzbek wines.

- One of the conditions for the development of winemaking is the access of winegrowers and winemakers to the necessary production equipment, the creation of a modern production infrastructure, the assessment of the quality and safety of final products and their implementation.

Analysis of the current situation in viticulture and winemaking in Uzbekistan in comparison with the leading countries-producers of grapes and grape products shows that Uzbekistan uses the export potential of the industry at an insufficiently high level.

The export potential of table grapes in Uzbekistan is objectively constrained by domestic demand, the limited number of large grape producers, as well as the lack of infrastructure and logistics.

The main foreign markets for Uzbek grapes and their processed products are the countries of the near abroad. The largest importing countries are **Kazakhstan and Russia**, which account for more than half of all exported grapes.

Despite the presence of competitive advantages of Uzbek grapes in terms of price and taste characteristics, the markets of China, the Middle East, Europe, and East Asia remain

undeveloped for uzbekistan. **The main reasons for this situation are:**

- High requirements for the quality of agricultural products in foreign markets;
- Tariff and non-tariff barriers applied in importing countries;
- High level of competition in foreign markets;
- High transport costs.

To increase the geography **of exports of fresh and dried grapes**, wine products, it is necessary to accelerate the development of opportunities in the markets of East Asia (China, South Korea), the Middle East (UAE, Saudi Arabia for fresh grapes), Europe (Germany, the Netherlands, Great Britain, Poland). At the same time, given that Uzbek grapes occupy only 16% of the Russian market, it is necessary to continue active activities to increase the share in this market.

1. **The reduction of barriers to domestic products** in foreign markets will be facilitated by negotiations with relevant countries on the reduction of non-tariff barriers, existing in relation to Uzbek products in export markets. It is also necessary to continue work on the formation of "green corridors" for fruit and vegetable products.
2. **To increase the export of finished wine products and reduce the export of primary processing products** it is advisable to work out a mechanism for supporting exports (financing the marketing promotion of wine products in foreign markets, participation in international exhibitions and fairs).
3. It will be important to actively promote the **brand of Uzbek** wine and wine products

and increase product awareness in traditional and potential foreign markets for grapes. In this regard, the following is proposed:

- Active participation of wine products in international exhibitions and competitions dedicated to winemaking;
 - Advertising promotion of domestic products through trade houses, diplomatic missions of Uzbekistan abroad;
 - Attracting marketing and PR companies of potential importing countries to promote Uzbek products in local markets;
 - Holding international scientific and practical conferences under the auspices of reputable international organizations such as the International Organization of Viticulture and Winemaking (IOW), the International Organization for Standardization (ISO), the World Trade Organization (WTO), the World Tourism Organization (WTO) on topical issues of viticulture and winemaking;
 - Organization of excursions on agroclusters growing processing grapes, production enterprises of winemaking, offering domestic wines to tourists visiting Uzbekistan.
4. A necessary condition for increasing the export potential of viticulture is the formation of **an effective and developed agrologistics**. In this regard, it is necessary to accelerate the creation of agrologistic centers that provide a wide range of services for the storage and transportation of products, selection and packaging of products in accordance with the requirements of foreign markets.
 5. **Development of enotourism**. It is necessary to pay special attention to the

development of wine tourism, which can play a significant role in the popularization of domestic winemaking.

Requirements for grapes supplied for export in terms of appearance, organoleptic and physico-chemical, as well as sanitary and hygienic indicators and requirements must comply with **GOST 32786-2014 " Fresh table grapes. Technical conditions"**. According to the UNECE standard FFV-19 **"Table Grapes"**, which sets specific requirements for products (product name, quality requirements, minimum requirements, classification, calibration conditions, labeling and packaging).

To promote the export of wine products, interested ministries and departments of uzbekistan need to use budget funds for the following purposes:

Provide access to information about Uzbek export-oriented companies operating in various industries;

Advertising and formation of public opinion in foreign countries regarding uzbek products;

Publishing booklets and catalogues of uzbek products, studying materials on sales markets in foreign countries and providing them to relevant interested organizations;

Organizing and conducting tastings in foreign countries in order to form a brand of uzbek products;

Provides consulting services in the field of trade;

Organize trade missions;

Maintain a calendar of exhibitions around the world and provide budget support to Uzbek producers to participate in these events;

Participate in the preparation of sectoral studies focusing on the export potential of value chain products.

Prompt consideration of issues related to the organization of transportation, customs clearance and reporting on the shipment of fruits, vegetables, melons and products of their processing;

Organization of monitoring the implementation of forecast parameters for the supply of fresh and processed agricultural products for export;

Develop measures to ensure the quality and safety of products, further expand the volume of exports of wine products and its geography, implement the results of scientific research, innovative approaches, best practices, requirements of international standards ISO, Organic and Global GAP;

Develop a special program to promote Uzbek wine products and wine products.

The Republic of Uzbekistan has its own unique natural and climatic conditions and rich soil and mineral resources, a raw material base for the development of viticulture. In addition, the enterprises of the wine industry are equipped with sufficient capacities and modern technological equipment, testing and measurement facilities that can assess the quality and safety of the products produced in accordance with the requirements of international standards. All this is the basis for fully meeting the needs of the country's population and exporting high-quality products.

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