



## AGROBIOLOGICAL AND TECHNOLOGICAL CHARACTERISTICS OF SEEDLESS GRAPE VARIETIES ADAPTED TO DRYING

**Odinayev Mirzamad Isayevich**

PhD, Tashkent State Agrarian University, Tashkent, Uzbekistan

E-mail: mirzamad\_odinayev@mail.ru

**Jabbarova Zebuniso Axmadovna.**

Independent researcher, Tashkent State Agrarian University,  
Tashkent, Uzbekistan

E-mail: zebunisojabbarova@gmail.com

<https://doi.org/10.5281/zenodo.8005463>

**Abstract.** In the article, in the study of seedless raisin grape varieties with large bunches, the country of origin of grapes, the shape of the grape head, the ripening period, productivity, fruit bearing and fertility characteristics, size and density, weight, color of the bunch, physico-mechanical characteristics of gujumi, skin thickness, tasting value, uvological indicators of gujumi, juice and dense parts of the flesh of gujumi, shingles, amount of skin, quality and yield of raisins, sugar content, Sourness and beneficial aspects of raisin varieties were studied.

**Key words:** grape head, rind, pith, flesh, skin, grape sugar, ripening period, productivity, duration of drying, yield of raisins, size, concentration, total temperature.

### Introduction

The soil and climatic conditions of the republic, especially its mountainous regions, are very favorable for growing grapes, and the grapes here are distinguished by their sugar content, high productivity, and high quality of the raisin product. It should be noted that ripe grapes, especially raisin varieties, contain up to 28-30% sugars, glucose, fructose and sucrose, which are quickly absorbed by the body. Also, freshly picked grapes contain apple, wine, lemon, amber, shale, formic and several other organic acids necessary for human health, mineral salts such as potassium, calcium, phosphorus, sodium, and coloring pigments in the fruit peel (1,2,4).

It is especially important for our people that raisins and raisin varieties are highly valued. A number of such varieties have been released by the scientists of the republic in recent years, and it is urgent to study and select their biological and technological properties. This makes it possible to expand the volume of production of quality products and increase the potential of raisin varieties and export them. Grapes (including raisins) accounted for the largest share of 24.7 percent of exports of fruit and vegetable grape products in Uzbekistan in 2022. 8.2 percent of mash, 6.0 percent of peach, 5.1 percent of tomato, 4.6 percent of date, 3.7 percent of onion, 3.5 percent of cabbage, and 3.3 percent of watermelon. The main importers of fruit and vegetable products of Uzbekistan are Russia (42.5%), Kazakhstan (18.9%), China (9.1%), Pakistan (8.8%), Kyrgyzstan (3.7%), Afghanistan (2.7 percent), Turkey (2.2 percent), Belarus (1.7 percent), Azerbaijan (1.2 percent), Iran (1.2 percent) [3,5].

As the object of the study, seedless and seedless varieties of grapes were studied: Black raisins, White raisins, Sugdiyona raisins, Pink raisins, Khishrov raisins. These varieties can be included among the raisin varieties.

**"Black raisin"** is a local morning glory and seedless grape variety. Widespread in Uzbekistan and Tajikistan. It belongs to the group of eastern ecological-geographic varieties. The grape head is medium (height 18-25 cm, width 11-13 cm), cone-shaped, the rinds are long, the cluster is medium dense, ovoid, the tip is blunt, the skin is black, thin, the flesh is juicy and crunchy.



**Figure 1. Black raisin**

It contains 24-25% sugar, acidity is 4.5-5.5%. The harvest is fully ripe in 130-145 days, at the end of July, in the second half of August. The total annual active temperature is 3100-3300 C<sup>0</sup>. Quality raisins are made from grapes (25-27% raisins are produced). It is grown in all regions of Uzbekistan.

**"White raisin"**-medium-ripe, raisin grape variety. Its homeland is Central Asia and the Near East. It belongs to the group of eastern ecological-geographical varieties. The grape head is medium in size (height 17 cm and 10 cm), cylindrical in shape, densely packed. The cluster is seedless, light yellow in color. It is thin, crispy. It ripens completely in early September. It contains 25-26% sugar. White currant is drought-resistant, frost-resistant, yield 200-250s/ha. The harvest ripens in 160-170 days, in the first and second ten days of August.



**Figure 2. White raisin**

The total annual active temperature is 3100-3300 °C. Regionalized in all regions of Uzbekistan. It is grown more in Samarkand region.





**“Sugdiyona raisin”** - Ortapishar khoraki grape variety. At the Samarkand branch of the Scientific Research Institute of Horticulture, Viticulture and Winemaking, pobida and black raisin varieties were bred. It belongs to the group of eastern ecological-geographic varieties. The bush grows strongly. The grape head is large, weighing 800-900 g, the cluster is large - up to 5 g, covered with wax. The taste is sweet and pleasant. When fully ripe, the sugar content reaches 25-26%.



**Figure 3. Sugdiyona raisin**

The harvest is fully ripe in 140-145 days, in the first ten days of September. The total annual active temperature is 3100-3300 C<sup>0</sup>. it will be completed at the end of August and at the beginning of September. The average yield is 180-200 s/ha, it is consumed fresh, raisins are added (25-26.2%), raisins fall. Sugdiyona grape variety is grown mainly for making raisins. Sugdiyona raisin grapes are known and famous not only in our country but also abroad for their sweet quality. In particular, in addition to being loved by the population of Japan, it is also imported in large quantities for confectionary enterprises. It is among the most marketable varieties that meet the world's requirements.



**Figure 4. Determination of dry matter of grapes under field conditions.**



**Figure 5. Drying sugiyona raisin under a film.**



**Khishrov raisin** is a medium-sized raisin and raisin grape variety. At the Samarkand branch of the Institute of Horticulture, Viticulture and Winemaking, Nimrang and black raisin varieties were bred. Belongs to the eastern ecological-geographic group of varieties. The trunk grows strongly. The leaf is large, round, 5-lobed, medium-sized. My head is medium-sized (250g). The skin is thick, fleshy, smooth, cheerful. It is cut fresh for eating on August 18-22, and for drying at the end of August. Sugar Content of sugar is 26-27%, acidity is 3.5-4.5%. The total active temperature of the crop is 3000-3275 °C and is completed in 140-145 days. When dried, 25-27% of raisins come out. Productivity is 140-145 s/ha. Mainly 25-27% of raisins come out.



**Figure 6. Khishrov raisin**

**Table 1**

**Agrobiological description of regionalized seedless raisin varieties in Uzbekistan.**

Varieties	Weight of 100 bunches of grapes, g	Oidium resistance	Cold resistance	Sugar content, %	Acidity, g/l	Early ripening group	Date of ripe of the crop	temperature	Raisin yield %
<b>Black raisin</b>	222	unresistive	resistive	24-25	5.5	Early riping	15-18/08	3100-3300	25-27
<b>White raisin</b>	143	unresistive	unresistive	25-26	4,5	Mid-ripening	25-30/08	3400-3450	25-26
<b>Sugdiyona raisin</b>	185	unresistive	medium	25-26	5	Mid-ripening	5-10/09	3100-3300	25-26,2
<b>Khishrov raisin</b>	220	medium	medium	25-26	4,6	Mid-ripening	25-30/08	3000-3275	25-27

As can be seen in this table, information on agrobiological and technological characteristics of seedless varieties of grapes is presented. These grape varieties are grown in



almost all regions of our Republic, but this quantity cannot be considered sufficient. Biological and technological characteristics of grape varieties, as well as the richness of vitamins A, C, D, B, B1, B2 in ripe or dried state, it is a very useful product for human health. Based on the above useful features, we can see that not only the domestic market of the country, but also the international market is expanding the geography of consumption. It would be expedient to expand the cultivation of these grape varieties if the state supports the cluster, farmers and peasant farms, as well as landowners specializing in viticulture.

### Conclusion

The following conclusion was reached during the study of seedless raisin varieties of grapes. The cluster of seedless raisin varieties of grapes, the quality of the grape head - the thickness of the skin, the dense parts of the juice and flesh in the cluster, the amount of skin, the amount of raisin, the quality of the raisin, the size of the raisin, the ripening period, the yield, weight, color, sugar content, incidence of diseases, sourness and tasting evaluations of fruits were studied. The classification of each grape variety was studied based on the raisininess of these varieties, the ability to transport, economic and quality dried products. In the preparation of raisins, mainly oblush and stackable methods are used. In our republic, it is possible to recommend the cultivation of these grape varieties on farms specialized in viticulture and the expansion of vineyard land areas in order to obtain quality raisins.

### References:

1. Buriyev X., Mirzayev M., Odinaev M. - Mayizbop urug'li va urug'siz uzum navlarini quritish usullari. - ToshDAU Tahririyat-nashriyoti, 2018. -18 b.
2. Temurov Sh., Uzumchilik. - "O'zbekiston milliy ensiklopediyasi" Davlat ilmiy nashriyoti. Toshkent: 2002. -B. 180-187.
3. Buriev X., Mirzaev M., Odinaev M. - Mayizbop (germiyon) uzum navlarini quritish usullari. - ToshDAU Tahririyat-nashriyoti, 2018. -18 b
4. Mirzayev M., Odinaev M. - Технология выращивания и сушки изюмных сортов винограда.- Monografiya. LAMBERT Academic Publishing. Germaniya-2017. -196 b.
5. Bo'riyev X.Ch.Jo'rayev R.J.Alimov, O.A.Meva sabzavotlarni saqlash va ularga dastlabki ishlov berish.Toshkent 2022.
6. Odinaev M. I., Ergashov S. S., Xayrullayev N. A. - Sifatli mayiz (germiyon) tayyorlashda yirik g'ujumli uzum navlarining muhim agrotexnologik xususiyatlari. N4 [6] 2022. Agro Inform.
7. <https://daryo.uz/2023/01/24/ozbekiston-2022-yilda-eng-kop-qaysi-mevalarni-eksport-qildi>

