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TECHNOLOGY OF PRODUCTION OF BIOLOGICAL ACTIVE APPLICATIONS WITH NATURAL CAPSULLA AGAINST DISEASES CAUSED BY IODINE DEFICIENCY

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ABSTRACT

This article provides information on the methods of preparation of raisins from grapes, the chemical composition of grapes and raisins, as well as their use in medicine. There is also a method of obtaining a biologically active supplement in the form of capsules based on natural sources of raisins, which provide the body with iodine in the treatment of endocrine diseases caused by iodine deficiency.

KEYWORDS: grapes, raisins, endocrinology, vitamins, micro and macronutrients, glucose, pectin, protein, carbohydrates.

INTRODUCTION

Today, in order to isolate natural medicinal substances from plants around the world and develop a technology for the production of new types of medicinal natural capsules from local dried fruits, raisins made from natural grapes are soaked in various micro and macro elements, vitamins and aqueous extraction of medicinal plants. One of the current topics is

the development of technologies for obtaining biologically active additives in natural capsules by soaking the isolated dry extracts in raisins.

Today, most varieties of grapes are grown in European countries, and their taste and chemical composition vary depending on the growing conditions. The vine is an ancient flowering or closed-seeded plant belonging to the Vitis family of the Vitaceae Juss family. Occurs in temperate, subtropical and tropical regions of the world. The vine grows in evergreen tropical forests, as well as on river banks and mountain slopes, mostly in the wild. A vine is a creeping liana-shaped plant that, by means of its curls, clings to the surrounding trees and shrubs and grows all its stem and leaf size by placing them on top of them. According to some historical data, vines were planted about 5-6 thousand years ago in Central Asia, Transcaucasia, Syria, Mesopotamia, Egypt, 3,000 years ago in the Black Sea and Mediterranean countries, China, and later in France.

The Tokdosh family includes 14 genera, about 1,000 species. They differ from each other depending on their morphological features, biological characteristics and use. Wild species of vines, mainly in Africa and Asia, are found in 6/1 of the tropical and subtropical regions of America.

Theoretical Part

In Central Asia and other Commonwealth countries, the species Vitis, Ampelopsis and Partenotsissus of the vine grow in the form of creeping, sometimes shrub and small trees. There are also species with different appearance of leaves, twigs, inflorescences, flowers, buds, seeds. Over the past 15 years, the cultivation of grapes has increased 3.5 times in Chile, 2.5 times in South Africa, 2 times in Australia and 1.5 times in Algeria. The main reason for this is that the grape-growing countries in the Southern Hemisphere make a large profit by supplying food varieties to European countries (mainly Germany, France, the United Kingdom, etc.) during the winter months (Figure 1).

Figure 1: Appearance of vineyards and their products.

An average of 1 million people die each year worldwide. tons of raisins are prepared. Turkey (36,000 tons) and the United States (California, 34,000 tons) are leading in this regard. Quality raisins are also grown in countries such as Iran, Greece, Australia, Afghanistan, Chile, South Africa. Turkey (17,300 tons) and the United States (12,300 tons) are the world's leading exporters of raisins. The largest amount of raisins is exported to countries such as Germany, Canada, Japan, France, Italy, Belgium [1-2].

Uzbekistan has very favorable climatic conditions for growing grapes and drying in the sun. To dry the grapes in the sun, it is necessary to prepare special drying areas in the open. It is possible to place 12-15kg of grapes per m2 of drying area. The sequence of receiving the product in the drying area, temporary storage, placement on trays should be clearly defined. At the drying point it will be necessary to install tables for spreading grapes, dishes for washing, pots for immersion in boiling water [1-2] (Figure 2).

Figure 2: Black (raisin) seedless grapes are its raisins and soup grapes.

Grapes contain all the vitamins of group B, vitamins E, A, RR, K, C and D. Grapes also contain micro and macronutrients such as iron, copper, potassium, calcium, magnesium, zinc, boron, vanadium, aluminum, molybdenum, selenium, titanium, cobalt, radium, chlorine,

silicon and sulfur. Grapes contain water, glucose, pectin, protein, carbohydrates, saturated and unsaturated fatty acids, essential oils and dyes.[1-2]

The phytosterols in grape peel contain antioxidants against cancer and other serious diseases. In addition to a number of vitamins, it also contains mineral salts. With the help of these substances, the human body is always light and free from infections. Grapes have the property of expelling any infection that enters the human body as a cleansing agent in medicine. Its antiseptic properties protect a person from poisoning. The reason why grapes are recognized by doctors around the world is that they have expectorant, diaphoretic, detoxifying and anti-infective properties, kill bacteria, break down stones in the body and stop bleeding. In inflammation of the colon is recommended to drink a glass of grape juice a day. Drinking a glass of grape juice 4 times a day helps to urinate. Grape leaf tincture normalizes blood sugar levels. Therefore, the role of grapes in the prescription of a patient with diabetes is special, and treatment with grapes and its juice puts an end to anorexia. It is an effective remedy against insomnia, anemia, kidney disease, neurosis and metabolic disorders in the body. The most useful variety of grape is black currant, which is recommended for anemic and frail people. Even cancer patients are prescribed black grapes or raisins as a means of boosting immunity.

Grape juice increases energy due to the presence of beneficial substances such as fructose, glucose, sucrose, raffinose, xylose. Grapes are prescribed for diseases such as anemia, cardiovascular disease, chronic hepatitis. It is also recommended to consume grapes in diseases of the gastrointestinal tract, acute and chronic nephritis, neurosis. Those who have kidney stones or sand will get rid of it if they regularly eat grapes and drink their juice. Drinking grape juice is useful against colds and asthma in the respiratory tract. Because he gets a cold.[1-3]

Grape seed oil contains many elements: bioflavonoids, vitamins E and C, zinc and selenium. This oil contains a strong natural antioxidant that increases the flexibility of the lymphatic vessels. It also prevents the buildup of cholesterol in the body. Another feature of grapes is that it cures hypertension that has just begun in the body. Drinking a teaspoon of grape seed oil every morning cures cardiovascular disease, atherosclerosis and arthritis. This oil also has the property of boosting immunity. This helps prevent various infectious diseases. The oil obtained from grape seeds nourishes the body with unsaturated fatty acids, enzymes, chlorophyll, potassium, sodium and iron. This oil helps people get rid of strokes, heart

attacks, thrombosis and couperosis. This wonderful tool is also used in the treatment of inflamed joints, bruises, cuts and burns, wounds that are difficult to heal. Black grape juice increases the strength of pregnant women and improves blood circulation in the body. This immune-boosting tool also properly shapes the heart activity of the unborn child. For this, it is more beneficial to consume freshly picked grapes.[1-3]

Dried grapes (raisins) are high in calories, rich in glucose (65-80%), which is quickly assimilated by the body. Due to the high content of resveratrol in grape skins and seeds, it has the ability to fight cancer. Due to its anti-inflammatory properties, it can easily treat the onset of breast cancer, colon and rectal cancer. Raisins are a medically very high-calorie product that is used in anemia, weakness, decreased immunity, and nervous tension. Raisins are more potent than fresh grapes. White raisins strengthen nerve fibers and cleanse the intestines of toxins and infections, while black grapes are the most beneficial remedy for nervous tension, calming the nerves and relieving fatigue.[3-4]

The chemical composition and energy content of dried raisins: 77% of dry matter, 61.0% of carbohydrates, 1.5-2.5% of nitrogen, 1.9-2.2% of ash, contains vitamins necessary for the human body. 1kg of raisins has 2400-3250 calories of energy. The sugar content of grapes harvested for the preparation of raisins should not be less than 23-25%. If the sugar content of grapes is 1% lower than the condition, then 1.5-2 quintals less raisins will be obtained from each hectare of vineyard. Dried grapes must be clean and evenly ripened. Raisin products can be obtained by drying all kinds of grape-rich and seedless grapes. Raisins are obtained mainly from black seedless grapes, which are widely consumed, and raisins from low-seeded grapes. Of the seedless grape varieties, mainly white yellow (soup) raisins and black raisins are widely used. From the seed varieties are used big-kurgan sultan, rhizamate, nutmeg, husayni grapes. There are popular methods of drying raisins, which are listed below.

The method of drying in the sun is open, the method of spreading and drying in areas where the sun shines well (without treatment with boiling alkali). This method is widely used in Urgut, Kattakurgan, Ishtikhon, Koshrabat, Burgan, Jizmonsay districts of Samarkand region, Nurata and Khatirchi districts of Navoi region, Tasmachi, Altynabad, Navandak, Mirdosh, Uchkara collective farms, Parkent district of Tashkent region, as well as in Altynsay district of Surkhandarya region. mainly made from raisins (Fig. 2), mostly black (raisin) seedless grapes. Drying in this way takes 20-30 days. The area where the sun shines is leveled, the leveled land is plastered with straw mud 5-10 cm thick 7-8 days before pruning, and the

irrigated land dries in 7-8 days. After 8-10 days of drying the tops of the grapes in the sun, the heads of the grapes are turned upside down. After the grapes have dried for 20-28 days, the raisins are hand-picked after sunset in the evening. Raisins are hard when dried and make a crackling sound. Then add the raisins with a stick, rub the gloves on the hands and separate from the sticks. The large raisins are removed, the raisins are cleaned (blown out) in a special fan (wind) and the raisins are gathered together and covered with ice to prevent evening dew. The raisins are at a level that makes a crackling sound until morning. Put in a cellophane bag or box and seal the mouth well, because the raisins become soft when the sun shines, in such a soft state the raisins cannot be covered because the raisin juice comes out and sticks to each other. Raisins are good for storage for a year, and for the second year they need to be spread out in the sun, if stored in a room with a special refrigerator, they will last for 3-5 years. Any product also has a shelf life, after which the taste changes and the composition changes [1-4](Figure 3).

Figure 3: Sun-dried grapes and raisins.

Objosh method grapes are soaked in alkaline boiling water and spread in the sun to dry. In this method, mainly Kattakurgan, Sultani, Rhizamate, Nimrang, large-grained grape varieties are dried. The drying time of grapes is 3-4 times shorter than that of raisins dried in the sun (without treatment with boiling alkali). Before drying, the grapes are sorted, placed in 2-3 kg sieves and immersed in a solution of 0.3-0.4% boiling alkali, ie sodium hydroxide (NaOH) for 4-5 seconds. 300-400 g of alkali is used for every 100 liters of water, after boiling the water for 7-8 minutes the grapes are soaked in sieves. This causes thin cracks in the thin skin of the grape seed and the waxy dust on the skin of the grain disappears. This ensures rapid evaporation of moisture from the fruit and speeds up the drying process. Baskets of grapes obtained in the pot are placed on the racks for a few minutes to allow the solution to drain, then spread on trays or in the field. Due to the fact that the finished raisins do not contain alkali, it reacts completely with the acids that enter from the cracks of the fruit skin and disappears. The reaction of alkali with acids results in the formation of very small amounts of

organic salts that are harmless to the human body. The area where the sun falls is leveled, covered with ice and spread with alkali-treated grape heads on the ice. After 4-5 days of drying the tops of the grapes in the sun, the grape heads are turned over. After the grapes have dried for 13-15 days, they are rubbed with raisins in the evening after sunset, rubbed with gloves, and then the raisins are separated from the stalks. Remove the large raisins, the raisins are cleaned (blown out) in a special fan (wind) and the raisins are gathered together and covered with ice to prevent evening dew. The raisins will be able to make a crackling sound until the morning. They will be sealed in a cellophane box because the raisins will soften when the sun shines. Raisins should be spread in the sun for a good second year of storage, if stored in a room with a special refrigerator at -10 -15 ^{o}C, they will stand for 3-5 years. The drying time of grapes is 13-15 days (Figure 4).

Figure 4: Processing and drying of grapes by immersion in alkaline boiling water.

Stack in this method is mainly dried white grapes and smoked with sulfur. Before smoking with sulfur, grape heads are immersed in a solution of 0.3-0.4% boiling alkali sodium hydroxide (NaOH) for 5-6 seconds. This causes thin cracks in the thin skin of the grape seed and the waxy dust on the skin of the grape disappears. Baskets of grapes obtained in the pot are placed on the grill for a few minutes to allow the solution to drain. Due to the fact that the finished raisins do not contain alkali, it reacts completely with the acids that enter from the cracks of the skin of the fruit and disappears. The grapes are then spread on special trays and collected in smoking rooms. White grapes are kept in a sulfur smoking room for 1-1.5 hours, pink grapes for 30-40 minutes, and it is recommended to burn 0.6-0.8 g of sulfur for each kg of grapes. Raisins are dried, separated from the straw, cleaned, boxed and stored according to the above methods. The drying time of grapes is 15-20 days (Figure.5).

Figure 5: Raisin product obtained by smoking grapes with sulfur by treating them with alkaline boiling water.

Yellow raisins and black currants (raisins) are dried in special shade rooms. The shady method is dried in wind-swept buildings with a length of 6-8 meters, a width of 4-5 meters and a height of 3-3.5 meters in places where the wind passes and the sun does not fall directly on the vines. The wire is pulled parallel into the building and the grape heads are hung on this wire and dried. After the raisins have dried, the building is cleaned of rubbish by rubbing it on the ice, removing the raisins from the wire, and separating them from the large rags. The raisins are cleaned (sucked) in a special fan (wind) and the raisins are collected in one place and boxed in a cellophane bag. When dried in this way, 20-22% of raisins are obtained. The drying period of grapes lasts 1.5-2 months (Figure.6).

Figure 6: Drying of grapes in the shade and soybean raisins.

A method of drying by hanging on a wire in the sun and then spreading it on the ground. This method is grown and widely used in Kattakurgan, Ishtikhon, Kushrobat, Burgan, Jizmonsay districts of Samarkand region, and in Nurata and Khatirchi districts of Navoi region, Tasmachi, Altynabad, Navandak, Mirdosh, Uchkara, community farms. In this method, the poles are hung on the wire, placing poles parallel to each other by placing poles in the area where the sun falls well. When the grapes do not dry out completely, they form a long raisin,

the area where the sun shines is flattened, and the ice is covered, the raisins are not completely dried, and after 4-5 days the grape heads are turned over. The rest of the work is continued as above and the finished raisins are packaged. The drying period of grapes lasts 1–1.5 months. The appearance of these raisins is similar to that of soybean raisins and is of good quality (Figure. 7).

Figure 7: Hang the grapes on a wire in the sun and then spread them out on the ground to dry.

DISCUSS THE RESULTS

The purpose of our study of water absorption in raisins is to obtain a natural capsule by soaking a certain amount of various micro and macro elements, vitamins, aqueous extracts of medicinal plants in raisins. To do this, we need to know how much water is absorbed into the raisins, and then we can soak the raisins by preparing solutions of natural substances in water at a certain concentration. To do this, the samples were weighed and examined. The mass of water-saturated raisins with the initial raisins and the masses after drying were studied and how much water was absorbed depending on the weight of one raisin.

Five samples of black raisins dried in the shade were weighed and placed in glass jars with a volume of 10 ml, the weight of the raisins is given below 1) 0.807 mg/gr 2) 0.688 mg/gr 3) 0.706 mg/gr 4) 0.675 mg/gr 5) 0.717 mg/gr. Each was immersed in 5 ml of distilled water and weighed 2 times every 3 hours: **a.** 1) 1,079 mg/gr, 2) 1,050 mg/gr, 3) 1,011 mg/gr, 4) 1,021 mg/gr, 5) 1,040 mg/gr, and **b.** 1) 0.272 mg/gr, 2) 0.362 mg/gr, 3) 0.305 mg/gr, 4) 0.346 mg/gr, 5) 0.323 mg/gr,. The raisins were saturated with water after 27 hours. Their weights were measured by sliding them 1) 1,924 mg/gr, 2) 1,918 mg/gr, 3) 1,724 mg/gr, 4) 1,841 mg/gr, 5) 1,856 mg/gr. From this the weight of water soaked in raisins is 1) 1,117 mg/gr, 2) 0,868 mg/gr, 3) 1,018 mg/gr, 4) 1,166 mg/gr, 5) 1,139 gr mg/gr, The raisins were then

thoroughly dried and weighed until they reached a constant weight, the results of which are given in Table 1.

Table 1: To study the water absorption of black raisins dried in the shade.

№	In the shade Dried Weight of 1 raisin is mg/gr A	Water the raisins for 27 hours saturated weight mg/gr B	The weight of water soaked in raisins mg/gr X = B - A	Weight of raisins after thorough drying mg/gr
I	0,807	1,924	1,117	0,800
II	0,688	1,918	0,868	0,677
III	0,706	1,724	1,018	0,698
IV	0,675	1,841	1,166	0,610
V	0,717	1,856	1,139	0,692
average	0,718	1,8526	1,134	0,6954

Five samples were taken from one piece of sun-dried black raisins and water absorption was studied according to the above method. The results obtained are given in Table 2.

Table 2: To study the water absorption of sun-dried black raisins.

№	In the shade Dried Weight of 1 raisin is mg/gr A	Water the raisins for 27 hours saturated weight mg/gr B	The weight of water soaked in raisins mg/gr X = B - A	Weight of raisins after thorough drying mg/gr
I	0,657	1,593	0,936	0,607
II	0,515	1,459	0,944	0,501
III	0,506	1,237	0,731	0,492
IV	0,553	1,543	0,99	0,505
V	0,511	1,218	0,707	0,498
average	0,5484	1,41	0,8616	0,5206

Let us now consider the absorption of potassium iodine in soybean dried raisins by placing 13.1 mg of potassium iodide (equivalent to 10 mg of iodine) in a 500 ml flat conical flask, dissolving in 300 ml of distilled water, and 100 g of soybean dried raisins. (128 pcs.) And left until the solution was saturated. The raisins were saturated in KI solution for 27 h. The raisins soaked in the KI solution were filtered from the solution, washed three times with distilled water and weighed and weighed, the results are given in Table 3. We calculate the amount of potassium iodide absorbed in raisins according to the following formulas. To do this, we find the amount of KI (X) in a solution of 180 ml of raisin saturation (remaining) from 300 ml of KI solution according to the following formula:

X = A x B / G;

A. amount of KI solution not absorbed into the core; (180 ml)

B. the amount of KI in the first 300 ml of solution. (13.1 mg/gr)

G. the amount of initial KI solution. (300 ml)

X = 180 ml x 13.1 mg/gr / 300 ml = 7.86 mg/gr,

that is, 300 ml of KI solution contains 7.86 mg/gr, of KI in 180 ml of solution, which exceeds the saturation of the raisins.

X = 7.86 mg/gr,

If 180 ml of KI solution not absorbed by raisins contains 7.86 mg/gr, of KI, then the value of 7.86 mg/gr, of KI (X) in 180 ml of KI solution is subtracted from the amount of 13.1 mg/gr, of KI (B) in the first 300 ml of solution. We find the amount of KI (ra) in raisins) according to the following formula:

D = B - X

B. KI content in the first 300 ml of solution (13.1 mg/gr)

X. Amount of 180 ml of KI solution (7.86 mg/gr)

D. The amount of KI in 100 g of raisins

D = 13.1 mg/gr, - 7.86 mg/gr = 5.24 mg/gr,

that is, 100 grams of raisins (128 raisins) contained 5.24 grams of KI,

D = 5.24 mg/gr,

Now the amount of KI in 100 g of raisins is D (5.24 g) as the number of raisins in 100 g. (J) We determine the amount of KI or iodine (N) in one raisin by 128 according to the following formula.

N = D / J

J. Number of raisins per 100 g. (128)

D. The amount of KI in 100 g of raisins (5.24 mg/gr,)

N = 128 / 5.24 mg/gr = 0.040 mg/gr,

this means that one soybean contains 0.040 mg of KI.

N = 0.040 (0.030 mg corresponds to iodine).

Let us now consider the absorption of potassium iodine in sun-dried raisins by placing 13.1 mg of potassium iodide (equivalent to 10 mg of iodine) in a 500 ml flat conical flask, dissolving it in 200 ml of distilled water, and adding 100 g of sun-dried raisins. gr (164 pieces) and left until the raisins were saturated with the solution. The raisins were saturated in KI solution for 27 h. Raisins soaked in KI solution were filtered from the solution, washed three times with distilled water, and weighed and weighed. the results are presented in Table 3. We calculate the amount of potassium iodide absorbed in raisins according to the following formulas. To do this, we find the amount of KI (X) in 90 ml of solution, which exceeds the saturation of raisins from 200 ml of KI solution according to the following formula:

X = A x B / G;

A. amount of KI solution not absorbed into the core; (90 ml)

B. the amount of KI in the first 200 ml of solution. (13.1 mg/gr)

G. the amount of initial KI solution. (200 ml)

X = 90 ml x 13.1 mg/gr / 200 ml = 5,895 mg/gr,

that is, 90 ml of a solution containing more than the saturation of 200 ml of KI in raisins contains 5,895 mg/gr, of KI.

X = 5,895 mg/gr,

Since 90 ml of KI solution not absorbed by raisins contains 5,895 mg/gr, of KI, the value of 5.895 mg/gr, of KI (X) in 90 ml of KI solution is subtracted from the amount of 13.1 mg/gr, of KI (B) in the first 200 ml of solution in 100 g of raisins (164 raisins). We find the amount of KI (D) according to the following formula:

D = B - X

B. KI content in the first 200 ml of solution (13.1 mg/gr,)

X. Amount of 90 ml of KI solution (5,895 mg/gr)

D. The amount of KI in 100 g of raisins

D = 13.1 mg/gr, -5,895 mg/gr = 7,205 mg/gr,

that is, 100 grams of raisins (164 raisins) contained 7,205 mg/gr, of KI.

D = 7,205 mg/gr,

Now the amount of KI in 100 g of raisins is D (7,205 mg/gr,) as the number of raisins in 100 g. (J) We determine the amount of KI or iodine (N) in one raisin by 164 according to the following formula.

N = D / J

J. Number of raisins per 100 g. (164)

D. The amount of KI in 100 g of raisins (7,205 mg/gr)

N = 164 / 7,205 mg/gr = 0.043 mg,

This means that one soybean contains 0.043 mg of KI.

N = 0.043 (0.043 mg corresponds to iodine).

Table 3: Absorption of KI solution into raisins dried in the shade and in the sun.

№	Raisins Product names	Weight of raisins (mg/g) and the number of pieces	KI solution to raisins time taken for digestion (hours) 200S	Raisins into KI solution saturation subsequent weight mg/gr	M weight of mg/g soaked in 100 g raisins KI solution	Weight of raisins after thorough drying is mg/g
I	Dried in the shade raisins	100 gr 128 pieces	27	214,798	114,798	72,373
II	Sun-dried raisins	100 gr 164 pieces	27	212,228	112,228	77,650

Thus soybean raisins have 5.24 mg KI per 100 g (128 raisins), which is equivalent to 4 mg of iodine. One soybean contains 0.040 mg of KI, which corresponds to 0.030 mg of iodine.

Sunflower raisins have 7,205 mg of KI per 100 g (164 raisins), which is equivalent to 5.5 mg of iodine. One sunflower raisin contains 0.043 mg of KI, which corresponds to 0.032 mg of iodine.

Experiment Section

1. Dissolve 13.1 mg of potassium iodide (equivalent to 10 mg of iodine) in a 500 ml flat conical flask, dissolve in 300 ml of distilled water, add 128 g of dried black raisins and leave until the raisin solution is saturated. The raisins were saturated in KI solution for 27 h. Raisins soaked in KI solution were filtered out of the solution, washed three times with distilled water and weighed, 214,798 g of raisins were obtained and 180 ml of KI solution was obtained from raisin saturation, the amount of potassium iodide absorbed in raisins was calculated in the discussion of results 128 raisins) have 5.24 mg of KI, which

corresponds to (4 mg of iodine). One soybean raisin contains 0.040 mg of KI, which is equivalent to 0.030 mg of iodine.

2. Add 13.1 mg of potassium iodide (equivalent to 10 mg of iodine) to a 500 ml flat conical flask, dissolve in 200 ml of distilled water, add 100 g of sun-dried raisins and leave until the raisins are saturated. The raisins were saturated in KI solution for 27 h. The raisins soaked in the KI solution were filtered out of the solution, washed three times with distilled water and weighed. The raisins weighed 212,228 mg/g and the KI solution exceeded the saturation of raisins. 90 ml of potassium iodide absorbed in raisins raisins) has a KI of 7.205 mg, which corresponds to 5.5 mg of iodine). One sunflower raisin has 0.043 mg of KI, which corresponds to 0.032 mg of iodine.

CONCLUSION

1. A method of obtaining a capsule biologically active supplement based on natural raisins, which provides the body with iodine in the treatment of endocrine diseases caused by iodine deficiency by absorbing a certain dose of iodine from local dried fruits to raisins. was better to consume.
2. Add a certain amount of potassium iodide solution from black raisins dried in the shade and measure how much potassium iodide solution is absorbed. It contains 5.24 mg of KI per 100 g of soy raisins (128 raisins), which is equivalent to 4 mg of iodine. One soybean raisin has 0.040 mg of KI, which corresponds to 0.030 mg of iodine (corresponding to 0.030 mg of iodine).
3. It was studied how much potassium iodide solution is absorbed by suffocating a certain amount of potassium iodide solution in sun-dried black raisins. It contains 7,205 mg of KI per 100 g of sunflower raisins (164 raisins), which corresponds to 5.5 mg of iodine. One sunflower raisin has 0.043 mg of KI, which corresponds to 0.032 mg of iodine. One sunscreen was found to contain 0.032 mg of iodine in raisins.

REFERENCES

1. Temurov Sh. Viticulture. Tashkent, 2002; 199.
2. Djavakyants Yu.M., Gorbach V.I.//Vinograd Uzbekistan. Tashkent, 2001; 240.
3. Mirzaev M.M., Rizaev R.M. Rekomendachii po sushke vinograda v fermerskix khozyaystvax. Tashkent, 2011; 6-21.
4. E.A.Shreder., K.I.Baymetov., Sh.M.Akhmedov Recommendations on the technology of grape propagation in farms of Uzbekistan. Toshkent, 2015; B.4-11.