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The Role and Importance of Fruit and Vegetable Drying in the National Economy

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ABSTRACT: Requirements for dried fruit and vegetable raw materials; drying fruits and vegetables by shade, sun and artificial methods; preparation of fruit and vegetable products for drying; drying equipment, materials and drying process; types of dried products; to develop skills in the order of packaging and storage of dried fruits and vegetables.

KEYWORD: moisture, fruits and vegetables, vitamins, drying process, product, special warehouses.

Mechanical dewatering is used to dry products that contain large amounts of water. In dewatering by this method, moisture is separated by centrifugal force in compression or centrifuges. Usually mechanical separation of moisture - is the first step in dewatering products. After mechanical dewatering, another portion of moisture remains, which removes the remaining moisture by heat, i.e., by drying.

Physicochemical dehydration of products is used in laboratory conditions. This method is based on the use of water-absorbing substances (e.g., sulfuric acid, calcium chloride). It can be dehydrated by placing a damp product on top of the water absorber in a closed container

Heat dehydration (drying) is widely used in the food industry. Drying is the final process of most productions, i.e. before the finished product is obtained. In some productions, dewatering of products consists of two stages, the moisture is separated first by a mechanical method, which is a cheap process, and then the remaining moisture is separated by drying. The method of separating moisture from the products in such a complex way increases the efficiency of the process.

A variety of high-grade grapes and fruits are grown in the country. The chemical composition of these grapes and fruits, i.e., their sugar content and vitamin content, is much higher than that of fruits and grapes in the northern zones. Fruits and grapes are important for the human body. The abundance of easily digestible sugars, organic acids, vitamins and minerals in them indicates how important

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fruits and grapes are for the human body. We don't have the time or opportunity to store wet fruits and grapes for long periods of time, nor to ship them to other remote locations. Fruits and grapes can be stored in special warehouses for a maximum of 5-6 months, if possible. The quality of such stored fruits and grapes decreases, the physical weight decreases. That is why it is important to dry fruits and grapes. Loading and storage of dried products is very convenient, but these products are also an invaluable, high-quality product for various expeditions and passengers.

Folk methods of drying. The high temperature and low humidity of the climatic conditions of the country make it very convenient to dry fruits and grapes in the sun. The sun-dried product is rated very high in quality compared to artificially dried. The favorable natural conditions in the country allow to ventilate and dry fruits and vegetables in the sun. The purpose of drying fruits and vegetables is to remove moisture and prevent microorganisms from growing and various biological processes from taking place. There is such a standard of drying that if the moisture content falls below that level, microorganisms cannot grow. This minimum level is 30% for bacteria and 15-20% for yeast bacteria. Therefore, if the moisture content of vegetables after drying is 15-25%, they can be stored in good quality without rotting. In order to get quality fruits and vegetables, it is necessary to create conditions that allow them to dry quickly and well. In Central Asia, vegetables are mainly dried in the sun. In order to obtain cheap and high-quality products in these conditions, it is necessary to properly select and organize drying points, adhere to the established technology, apply advanced methods in the preparation of raw materials.

The process of dewatering wet products using a drying agent is called drying. In this process, moisture is evaporated from the solid phase composition to the gas (or vapor) phase. The organization of the drying process of wet fruits and vegetables in industry is of great importance. Transportation of dried products would be cheaper, their respective properties would be improved, they would be less susceptible to microbial exposure, their storage capacity would be higher and they would require less space.

Products can be dewatered in three different ways: mechanical, physicochemical and thermal. Mechanical dewatering - used to dry products that contain large amounts of water. In dewatering by this method, moisture is separated by centrifugal force in compression or centrifuges. Usually mechanical moisture separation is the first step in dewatering products. After mechanical dewatering, another portion of moisture remains, which removes the remaining moisture by heat, i.e. by drying. Physicochemical dehydration of products is used in laboratory conditions. This method is based on the use of water-absorbing substances (e.g., sulfuric acid, calcium chloride). It can be dehydrated by placing a damp product on the water absorber in a closed container. Heat dehydration (drying) is widely used in the food industry. Drying is the final process of most productions, i.e. before the finished product is obtained. In some productions, dewatering of products consists of two stages, the moisture is first separated by a mechanical method, which is considered a cheap process, and then the remaining moisture is separated by drying. The method of separating moisture from the products in such a complex way increases the efficiency of the process. Drying is carried out in two different ways (natural and artificial). Outdoor dehydration of products is called natural drying, a process that takes a long time. In the food industry, artificial drying is also used, which is carried out in special drying devices. The role and importance of dried products. Products to be dried are divided into three types: solid (granular, fragmentary, granular); pastasimon; liquids (solutions, suspensions).

Drying time also varies slightly depending on the product type and drying method. For example, apricots cut in half take 5-10 days, whole apricots in 10-15 days, peaches in 8-12 days, grapes in 20-

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25 days (not treated), and alkaline treatment in 6-10 days. In the drying areas, the parts of the product reception, temporary storage, placement on trays should be clearly marked.

The area depends on the type and size of dried fruit, the amount per square meter, as well as weather conditions. In hot and dry areas, a smaller area should be built, while in wet and cool areas, a larger area should be constructed. 3-5 kg of sliced apples per square meter, 14-16 whole dried pears, 10-12 pears divided into two or four, 14-16 plums, 8-10 cherries and cherries, 12-10 apricots and peaches, 12-10 grapes 12-14 kg can be dried. Sliced apples average 4-8, apricots 4-7, whole apricots 8-15, peaches 7-12, pears 8-20, alkaline 10-15, untreated plums 30 days, cherries are ready in 7–13 days, untreated grapes in 20–25 days, and grapes treated with alkali in 5–8 days. The squares in the squares are set from east to west. Wet fruit is slanted on both sides in the pods. A 0.8-meter-wide corridor will be left between the two lanes, which will be 1.5 meters wide if the works are mechanized. Shelters will be built on the site for receiving, temporary storage, sorting, slicing, placing in containers and shady raisins. The water in the pool is cool. In addition, the drying point should have tables, scales, barrels and pots for slicing and sorting the fruit.

Technology of preparation of melon peel. Melon is one of the main melon products. Not only does it become valuable to be consumed when cooked, but it does not lose its flavor even after processing. Melon contains sugar compounds such as glucose, fructose and sucrose, as well as large amounts of fiber, hemiocellulose, pectin and other substances. In addition to sowing melon seeds, the bark is used as fodder for livestock. Seed farms in Uzbekistan annually use 15-20 thousand tons of melon seeds. As a result of processing this amount of melon, more than 1000 tons of melon can be obtained. This will allow farms to earn extra income. To dry the melon in the sun, in a simple way, it is necessary to have a platform, table, knife, padnis, stalk, rake, hemp thread and stainless steel wires. The perimeter of the drying area should be open, away from sunny and busy roads. Melon drying is carried out on specially equipped hooks. For this purpose, benches are made of 6x6 cm diameter rails with a height of 170 cm. On both sides of these rails are hung poles one meter wide with a triangular base. The triangular-shaped poles are installed at a distance of 2.5 meters and reinforced with rails. Wire or twisted hemp is laid on each side in 4–5 rows at intervals of 35–40 cm. 9 looms per season (when dried 4 times) to dry one ton of product, 1.1 cu. meters of wood are spent. The perimeter of the drying area should be open, away from sunny and busy roads. Melon drying is carried out on specially equipped hooks. For this purpose, benches are made of 6x6 cm diameter rails with a height of 170 cm. On both sides of these rails are hung poles one meter wide with a triangular base. The triangular-shaped poles are installed at a distance of 2.5 meters and reinforced with rails. Wire or twisted hemp is laid on each side in 4–5 rows at intervals of 35–40 cm. 9 looms per season (when dried 4 times) to dry one ton of product, 1.1 cu. meters of wood are spent. the melon must be fully equipped with all necessary equipment before drying and they must be in working order. In the preparation of melon peel, all varieties of ripe and unripe melons are considered suitable. However, depending on the density level of the meat, it is recommended to choose a different method of cutting and drying it. Varieties such as "Red", "White Seed", "Blue", "Pink", "Orange" and others with dense flesh can be dried in loops in a simple way. The fleshy fruits of “Bosvoldi”, “Toshloqi”, and “Gurbek” varieties are cut and hung during hanging, so they are cut after cleaning and spread on the stalks, first dried for 2-3 days, and then hung on wires to dry well. Drying time is 6-12 days, depending on weather conditions and the thickness of the sliced melon. Whole, healthy melons are separated and washed or wiped with a damp cloth. It is then divided into two equal parts and the seeds are taken. The cut pieces are cut into slices 3–4 cm thick, peeled and hung in pairs to dry. Melon flesh varieties ("Kokcha", "Ich-kyzyl") are cut during cutting, so they are first spread on the pods, dried and thinned, and after softening, the rails can be used. The yield of dried finished product

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varies in different varieties and is determined by the amount of sugar in the melon, the seed, the thickness of the melon skin and the yield of the flesh. During the mechanical inspection of the melon, it was found that the components were different. Therefore, during the drying of melons, different amounts of peel are obtained from different varieties. 4.5-5.4% of Kokcha, Bosvoldi and Gurbek varieties are harvested. 7.5-10.7% of other varieties of fruits are produced. 11.7-15.2 tons of raw materials are needed to produce one ton of melon peel (table).

Mechanical inspection of fruits and yield of withered product (as a percentage)

Melon varieties	Seeds	Peel	Эти	Worn product output	Consumption of raw materials for 1 t of dried product, kg
“Ko‘kcha”	6,3	26,0	67,7	5,4	15200
“Sariq po‘choq”	4,0	21,0	75,0	8,9	13330
“Oq urug‘”	5,8	13,4	80,8	8,0	12500

In Uzbekistan, dried melon peels contain about 15.4-83.7 mg of vitamin C, 38-75.7% of total sugar and 76-91.4% of dry matter. The readiness of the dried product is determined by the condition of the cut melon pieces. The crust is flexible, when squeezed in the palm, it should not leak juice and the moisture content should not exceed 20%. Raw materials should also be brought to the drying area in varieties. This work is led by the farm's seed crop. The use of melon meat can also be organized in canneries. To do this, the plant must have special drying areas.

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