FEATURES OF KARAKALPAK MELON VARIETIES WHICH ARE RECOMMENDED FOR DRYING

[1]Abdieva G.M, [2]Karimullaeva M.U
Technical Sciences(PhD) Tashkent State Agrarian University[1] , Doctorate student, Tashkent State Agrarian University, Uzbekistan[2]

ABSTRACT

Melon-growing in Central Asia is one of the oldest branches of agriculture. The Republic of Karakalpakstan is one of the regions of origin of the most valuable high-sugar varieties of melons. In the ancient oases of Khorezm, Khiva, Nukus, Khojeyli, Kungrad, located in the floodplain of the Amu-Darya river, almost all the existing cultural varieties of melons were created and formed (more than 160) [1].

INTRODUCTION

Melon, as one of the melons and gourds, has come a long way in its transformation and formation. Being originally bred from wild forms, as it gets into the conditions of cultural agriculture, the nature of melons and its varieties gradually changed. Man with his purposeful action created new, more high-yielding, valuable and storable varieties. Over the past years, public breeders have selected the best kinds of melons, planted, fixed and bred all new varieties of melons that are unparalleled in other countries and around the world.

Favorable soil and climatic conditions of Karakalpakstan and the Khorezm oasis contributed to the creation of the most storable autumn-winter melon varieties.

A feature of indigenous varieties of melons is their nutritional value, which consists in the high content of total sugars, ash elements, containing in% in 100 g of the product: potassium - 0,087; sodium - 0.111; calcium - 0.05; magnesium - 0.005; iron - 0.002; sulfur - 0.029; phosphorus - 0.007.

The biochemical composition of the melon is given in table 1[2].

The solids content varies between 5.5-16.3%. The bulk of sugar solids, reach the best varieties of melons up to 13%, and sometimes above 18%.

In the mature fruits of melons, sucrose prevails, which accounts for 60-75% of the total sugar.

MAIN PART

Of the other sugars, melons contain glucose and fructose; moreover, in most varieties the glucose content is much higher than fructose. Thus, the sweetness of the melon fruit is determined mainly by the amount of sucrose.

Table 1

Pulp composition	Quantity (total), %	Quantity (principally), %
Water	82,7-94,2	83-92
Dry remainder	5,8-16,0	8-13
Total sugar	3,4-18,1	6-15
Sucrose	0,7-13,9	5-9

Cellulose	0,11-0,68	-
Hemicellulose	0,11-0,39	-
Pectin elements	0,09-0,74	0,2-0,6
Vitamin C, mg %	0,2-35,2	-

The mechanical composition of the melon on average,%;

pulp about 60-80;

- peel (shell) about 25-30;
- placenta with seeds about 6-9.

Melon bark contains about two times less sugars than the pulp of fruits, and all the bark sugar is monosugars.

Melon seeds contain 40-42% oil.

The sugar content in melons is not constant. His fluctuations depend on varietal characteristics. In most cases, the sugar content in the fruits of these varieties lies in the range of 9-12%, and sucrose - 6-8%.

Late-ripening varieties are mainly used for winter consumption. During harvesting, their fruits are woody, with a cucumber flavor, although they have physiologically mature seeds. The sugar content of these varieties during the harvest period ranges from 6 to 8%. During the ripening period, while storage, the total sugar content in the fruits increases and the percentage of sucrose increases. After one to two months of storage, their sugar content reaches 11-12%. The flesh acquires a delicate texture.

VARIETAL SIGNS OF MELONS

All known varieties of melons differ in morphological and economic characteristics. When determining the varietal trait, attention is mainly paid to the size and shape of the fruit, the nature and color of the bark, the type of pattern, the consistency, taste and thickness of the pulp, the structure of the placenta and the color of the seeds. From economic characteristics take into account the early maturity of the variety, productivity, keeping quality and transportability [3].

The shape of the fetus. The fruits of melons are flattened, spherical, ellipsoidal, ovoid, spindle-shaped and cylindrical.

The size of the fetus. For elongated forms, the determining size is its length along the longitudinal axis, for round-shaped fruits, the largest transverse is diameter. With an elongated shape, large fruits have a length of 30-50 cm, medium 25-30 cm, small - less than 25 cm. With a spherical or oblate shape, large fruits are considered to have a diameter of over 22 cm, medium - from 15 to 22 cm, small - less 15 cm. But depending on the agronomic technique of melon cultivation, some fruits reach impressive sizes (Kara-gulyabi, 34-55 cm long, 18-40 kg weight, Ala-hammah, 35-40 cm length, 30-35 cm diameter, weight 17-35 kg).

Surface. The surface of the melon fruit can be smooth (Tashlaki, Buri-calla, Gurbek, Kokcha, Ak-Urug, Shakar-palak, Gulyabi orange), segmented with a shallow, medium and deep form of segmentation (Shirozi, Bekzodi, Ak-kaun, Bosvaldy), tuberous (Kamal, Ak-kaun, Jura-kand), wrinkled (Chogare, Kutur, Kara-kyz, Ak-navvat, Kara-gulyabi, Kampir-kaun).

The color of the fetus. Ripe fruits acquire a certain color depending on the variety: White with greenish or yellowish tones (Buri-calla, Assate, Chograe, Ak-novvat); yellow and yellow-green (Bytea-kurgan, Turkmen

Ichkzyl, Shirin-puchak, Kari-kyz, Hokuz-kalla, Gulyabi orange)); brown (Arbakeshka, Sary-gulyabi); green, grey-green, dark green (Buri-calla, Ala-Gurbek, Kokcha, Shakar-palak, Kara-gulyabi, Umyrvaki, Arkany, Kara-kosh, Beshek).

Figure or shell. A pattern is a set of stripes, smears, spots on the surface of the fetal cortex, painted in a different color than the main tone. The shape of the pattern is in the form of ribbons, stripes, spots and speckles.

Ribbons are usually located in the hollows between the segments (Shirozi, Bosvoldi).

The color of the picture can be yellow, green, dark green, brown or orange.

Reticulation. The reticule is formed by cork cracks on the surface of the fruit. The reticule can be complete, covering the entire surface of the fruit (Kokcha, Bayt-Kurgan, Shakar-palak).

Depending on the size of the cells, the reticule can be finely mesh, medium meshy or coarse meshy. The assortment of such melons is quite wide.

The hardness of the bark. This feature characterizes keeping quality and transportability. There are some types of barks: soft, when there are recesses from weak finger pressure (Bosvaldy, Ola-Zamcha). Summer melon varieties are medium - hard, and late - autumn and green varieties have the highest hardness and can withstand long-term transportation. These varieties of melons are exported to Russia and neighboring countries.

Pulp. The pulp coloration is reduced to three colors: white - for many early-ripening varieties, light green for autumn and winter varieties (Arkany, Kirkma, Umyrvaki, Kara-kand), orange (Khtoi, Ich-Kyzyl Uzbek, Ich-Kyzyl Turkmen). In this case, the color is thick or weakened, gradually changing in the thickness of the pulp.

The thickness of the pulp. The thickness of the pulp is determined by the ratio of the width of the pulp to the radius of the seminal cavity of the fetus. Thick pulp is distinguished when the width of the pulp is greater than the radius of the seminal cavity (Kirkma, Ala-puchak, Karakosh, Beshek, Ala-hamm, etc.); middle - (Ameri, Ich-kzyl, Bytes-kurgan, etc.); thin - (Ak-Novvat, Ak-Kaun, Besh-Urug, Htoi).

The consistency of the pulp. According to the structure and solidity, the melon pulp can be potato, loose, melting, crunchy, dense, viscous. At the same time, it can be weakly medium or coarse fiber.

The sweetness of the pulp. The sweetness of the pulp depends on the amount of sugars and their composition: sucrose, fructose and glucose. The pulp will be very sweet if sucrose prevails; sweet - in the case of fructose and sweet - in the case of a predominance of glucose.

The aroma. In melons of many varieties, the aroma is strong, medium, weak. But there are varieties that do not have a flavor.

Taste. The flavoring qualities of the fruits of Uzbek melons are extremely different and depend on the soil and climatic conditions of their cultivation and agricultural technology, but they are all reduced to several main categories, the taste is melon, pear, vanilla, grassy, the taste of honey, pineapple, etc.

From the point of view of the large-tonnage industrial processing of melon fruits to produce food products, it is necessary to consider their various exotypes in the relationship of the main varietal characters with the degree of their suitability for mechanization processes of conversion. An analysis of varietal characters of the most common Uzbek melons which are recommended for drying is shown in Table. 2.

№	Melon varieties and using them	The area of spreading and growing	Ripening period, days	Yield, c/h	The shape of the fetus	The weight of the fetus, kg	Pulp characteristics	Sugar content	Solids content, %

1	2	3	4	5	6	7	8	9	10
1	Kukkallapush, freshly used and for drying	The southern regions of Uzbekistan: Khorezm, Samarkand, Surkhandarya	70-75	180-250	Spherical	2,5-3,5	White, dense, thickness 5-5,5 cm	6,2-8,6	8,1-11,4
2	Asati, gives good jerked product	Tashkent, Ferghana, Andijan regions	83-98	250-300	Ovoid	4-7	White, fibred, sweet	Up to 10	-
3	Dogbedhi, for using and drying	Regionalized in Samarkand and Surkhandarya regions	70-75	250-300	Ellipsoidal	до 3	Light green, crunchy, thickness up to 4,5 cm	8-10,5	11,9-13,5
4	Ok-kavun, useful for export and drying	Regionalized in Tashkent, Ferghana, Andijan regions	94-100	220-300	Elongated-ovoid	4-10	Weakened green, juicy, thickness 5-6 cm	7-10	8,5-11,5
5	Baytkurgon, available for using, export	Tashkent and Syrdarya regions	85-95	220-300	Elongated, large	4-6	White, loose, juicy, thickness 4,5-5 cm	7,3-9,5	8,9-10,2
6	Arbakeshka, high productive, storable, useful for export	Tashkent and Syrdarya regions	95-100	350-600	Elongated, large	8-17	White-green, coarse fiber, average dense	10	11,5
7	Kukcha, storable useful for export and drying	Andijan, Ferghana and Tashkenr regions	88-90	270-320	Ellipsoidal with peaked endways	5-6	White-green, juicy, crunchy, thickness 4-4,50 cm	8-14,8	10-15
8	Ok-urug, for local use and drying	Syrdarya and Tashkent regions	80-88	250-300	Elongated, large	5-7	White, crunchy, thickness 5,5-6,7 cm	8-12	8,6-11,9
9	Shakarpalak, the best kind for drying	Andijan, Ferghana and Tashkent regions	75-80	200-250	Elongated-ovoid	2-4	White, soft, very sweet, thickness 4-4,5 cm	9-14	10-17
10	Krasnomyaska, storable, useful for export and drying	Ferghana valley	80-95	250-300	Cylindro-ellipsoidal	3-4	Orange, fibred-crimp, crunchy, thickness 3,8-4,5 cm	9-9,2	10,2
11	Ichkizil uzbek, for conservation, jam and drying	Commonly spread, widely spread in Tashkent oasis	88-92	200-260	Ellipsoidal	2,8-4	Orange, very sweet, thickness 4-4,5 cm	10-12,2	13-14,5
12	Ichkizil turkmen, for local use and drying	Khorezm, Tashkent regions and Karakalpakstan	97-100	200-300	Ellipsoidal with thick endways	3-4,5	Orange, crunchy, juicy, thickness 3,5-5,4 cm	9-12	10,3-14
13	Toshloki, for local use and drying	Tashkent, Samarkand, Bukhara, Andijan and Ferghana regions	72-75	200-260	Cylindrical	3,5-4,2	White, dense, has the taste of honey, thickness 3,5-5 cm	8,3-11,8	10,1-14,2
14	Burikalla, for local use, export and drying	Oasis of Ferghana valley	73-80	200-250	Short oval with thick endways	3,5-5	Light-green with orange tints, very sweet, thickness 5-5,5 cm	9-11	9,5-13,4
15	Jurakand, for local use and drying	Tashkent, Ferghana valley	78-90	200-280	Short-ellipsoidal	2-3,5	White, sometimes green, crunchy 4-4,5 cm	9,5	до 12,1
16	Amiri, freshly used and for drying	Khorezm region, Zarafshan	80-90	300-350	Spindle-shaped	3-4	Light-green, white, crunchy 4-5 cm	7-9,5	9-12,5
17	Hitoi, for local use and drying	Khorezm region, Karakalpakstan	80-90	220-250	Ellipsoidal cylindrical	3-5	Orange-yellow, soft-crunchy 4-5 cm	9,5-9,8	До 12
18	Kuktinni	Tashkent region	80-85	220-260	Ellipsoidal cylindrical	3-5	White, dense, thickness 4-5 cm	8-11	10,5-12,5
19	Kora-gurbek	Khorezm region	85-95	200-220	Weakened oval	5-7	White, soft, thickness 5-7,5 cm	7,2-9,2	10,3-11,8
20	Ok-novvat Khorezm	Khorezm oasis	90-96	200-220	Ellipsoidal	3-6	White, thick 5,5-6 cm	8,1-10,9	10,1-12,6

21	Non-gusht	Khorezm oasis, Karakalpakstan	88-95	250-350	Ellipsoidal	5-8	White, light-yellow, thickness 5-6 cm	8,6-10,7	10,0-14,7

Table 2

Assortment and technological characteristics of Uzbek melons which are recommended for drying

LITERATURE

1. Ermokhin V.N. Melons of Uzbekistan. – Tashkent: “Science”, 1974 – p-231.
2. Skurikhin I.M. Chemical structure of food products. – M.: Agroprompublishing, 1987 – p-224.
3. Rakhmatov O. Developing the technologies of melon conversion in the conditions of the Republic of Uzbekistan. – Tashkent: “Science”, 2018 – p-159.
4. Mavlyuda, X., Rustam, K., Rano, D., Dadamuhamedov, A., & Alisher, M. (2019). Personality-Oriented Learning Technologies. *International Journal of Recent Technology and Engineering (IJRTE) ISSN*, 2277-3878.
5. Джураева, Р. Б. (2010). Структура и содержание «положения об электронном учебно-методическом комплексе дисциплины».
6. Bahrombekovna, D. R. (2020). Using the system" Virtual Psychologist" in determining the psychological and pedagogical readiness of students for professional education. *International Journal on Integrated Education*, *3*(3), 1-4.
7. Bakhrombekovna, D. R. N. (2020). Organization of computer monitoring in assessing student knowledge of a computer system. *ACADEMICIA: An International Multidisciplinary Research Journal*, *10*(6), 532-538.