



ACADEMICIA
**An International
 Multidisciplinary
 Research Journal**
 (Double Blind Refereed & Peer Reviewed Journal)



DOI: **10.5958/2249-7137.2021.00621.2**

FEATURES OF STORAGE OF PUMPKIN FRUITS IN DIFFERENT TERMS AND METHODS

Umidov Shavkat Ergashevich*; Mamasaidov Olimjon Imurodugli**

*Doctor philosophy of agricultural Science (PhD),
 Tashkent state agrarian university,
 Tashkent, UZBEKISTAN
 Email id: umidov_shavkat@mail.ru

**Master Student of Tashkent state agrarian university,
 UZBEKISTAN

ABSTARCT

In this article, the results of the research on the conservation of varieties of pumpkin belonging to three cultural species are described. Experiments are based on quality control by organoleptic evaluation of changes in their composition when storing pumpkin fruit in two different ways. As a result of the research, scientifically based conclusions were formed

KEYWORDS: *Pumpkin, Temperature, Storage Mode, Relative Humidity, Slices, Storage Period, Gas Environment*

INTRODUCTION

Storage is a relatively complex and long stage of the technological cycle. Since agricultural crops are seasonal, this area is considered relevant. According to the records of many researchers, zucchini can be stored from 6 months to a year, depending on the variety in controlled conditions (when the temperature of 6-8°C and the relative grade of air is 75-80%). However, there is not enough literature on the analysis of retention in an unmanaged environment and truncated state.

Storage in an unmanaged environment. During the studies, experiments were conducted on the storage of pumpkin fruits, characteristic of different species and varieties, in an unmanaged environment (with a temperature of 14-22°C and a relative humidity of no more than 75%).

When storing pumpkin fruits in an unmanageable environment in the whole state, it became known that their biochemical composition and Consumption Value did not disappear until 180-240 days. Pumpkin fruits are generally considered products that are suitable for long-term

storage. During the experiments, this again found its confirmation. The composition of important components in the composition of pumpkin fruits has also been preserved for a long time. When storing pumpkin fruits in an unmanaged environment, the amount of dry matter contained in fruits of all varieties was constantly reduced. For storage, the fruits of Ispanskaya 73, Volzhskaya Seraya 92, Medovaya varieties, bread kadi, Kustovaya Oranjevaya varieties, 268 and Kashgarskaya 1644 varieties belonging to the cultural type of Muscat pumpkin were selected, belonging to the cultural type of large-fruited pumpkin.

During storage, the biochemical composition of pumpkin fruits was regularly studied. There were also trends in the reduction in the amount of carbohydrates, organic acids and vitamins. The amount of starch sharply decreased over time, by the later periods of storage, and in all other varieties of starch from the 92 variety of Volzhskaya Seraya did not remain at all.

During storage, the qualitative characteristics of the composition were more pronounced than varieties belonging to the cultural type with a hard coat. Especially the fruits of bread kadi varieties were well preserved compared to other varieties.

The composition of pumpkin fruits of this variety initially contained 18,84% of the dry matter, after 60 days it was 17,9%, after 120 days it was 15,88%, after 180 days it was 15,16%, after 240 days it was 14,48%. This means that its composition is relatively stable. In other varieties, there was a decrease in the amount of dry matter more sharply than in the Non-kadi variety.

In turn, the decrease in the amount of sugar also repeated this trend. Only on 240 – th day of storage it became known that there was no starch left in the composition. However, the amount of monosaccharides, sucrose, organic acids and other components did not decrease sharply.

The lowest shelf life characteristics during storage were observed in the Medovaya variety of the yirikmevali pumpkin cultural variety and Kashgarskaya 1644 variety of the Muscat pumpkin cultural variety.

Keeping pumpkin fruits in slices cool. On sale, often there is a high need for realization in the form of slices in the case of zucchini cut - 0,5-1,5 kg mass. This is due to the fact that one fruit of zucchini is usually plural for one use at home. In this regard, it is desirable to put them on sale as a semi-finished product. For this reason, experiments were conducted on the storage of pumpkin fruits as a semi-finished product, cut into slices in a cooled state. The main purpose of this study was to study the optimal period of storage of pumpkin fruits in the state of slices.

TABLE 1. ORGANOLEPTIC INDICATORS SCALE FOR SENSORY ANALYSIS OF SLICES OF PUMPKIN FRUITS

№	Pumpkin slice quality indicator	Important coefficient	Ball	Ball rating description
1.	Appearance	3,0	5	like a fresh pumpkin
			4	Characteristic of a fresh pumpkin, in which there is a change without sensation
			3	Characteristic of the a fresh pumpkin, in which there is a significant change
			2	Not fresh pumpkin

2.	Color	3,0	5	Consistent and uniform, typical a fresh pumpkin
			4	Little has changed
			3	Significantly changed
			2	Is not peculiara fresh pumpkin
3.	Taste	6,0	5	Very sweet, a pleasant taste of melon comes
			4	Sweet
			3	Less sweet
			2	Not sweet, not unpleasant taste
4.	Aroma	4,0	5	Pleasant, bright, melon-like
			4	Pleasant
			3	Lessnoticeable
			2	unknown, odorless
5.	Consistency	4,0	5	Veryfastidious, soft, dense
			4	Sersuv, densityisaverage
			3	Low-water, loose
			2	Numerous

According to the results of the study, it was found that pumpkin fruits cut into slices at home should be stored 3-5 days. But in some cases more time is required for storage. During the storage of pumpkin fruits in the cut state, changes in its biochemical composition, organoleptic properties and other indicators, data on which are not presented in the literature. We also carried out these studies in our experiments.

In order to investigate the variation in the consumption values of pumpkin fruits, we prepared to cut and store no more than 500 Gramm of the varieties under study. Cut pumpkin slices +2 in the cooling chamber...It was stored at a temperature of +4°C and in conditions with a relative humidity of 80-90% of the air. Analysis on the determination of organoleptic and microbiological indicators was carried out 5,10, and 15 days, experiments on the determination of biochemical indicators were carried out between 3,6,9,12,15 days.

The study of organoleptic properties of the fruit slices of the pumpkin varieties under study was carried out on the basis of the following indicators: appearance, color, consistency of the flesh, its taste and aroma. The evaluated indicators were formulated in accordance with the specific characteristics of the research object and consumer demand. These indicators are widely used in organoleptic evaluation of fruit and vegetable products.

In order to ensure the difference levels of score scales, we have developed indicators that allow us to accurately determine the harb one-point rating level due to the characteristics of the fruit tilim. In generalizing the conclusion of experts on each indicator, it is purposefully evaluated at 4 levels, taking into account the coefficient of significance on individual signs. At the end of the evaluation process, the degustation sheets filled out by the expert commission, consisting of 7 people, are summarized.

In this way, we developed a 100-point scale to determine the quality indicators of pumpkin fruits of the varieties in which the experiment is conducted organoleptic. In this case, on the basis of the coefficient of significance, an assessment of the quality by 4 degree is provided (see Table 1).

The data obtained as a result of organoleptic analysis were summarized and expressed in Table 2.

In this experiment, the standard deviation on each indicator did not exceed 0,5 and was in the range of 0,0-0,45. For this reason, the overall price remained the same. When organoleptic analysis of pumpkin slices, which were cut into slices, significant changes were noted when storing 10 and 15 days in all varieties.

In the first period of storage (5 days), the quality of pumpkin seeds decreased imperceptibly, and this decrease was on average 7,28-8,28 points. The best preserved pumpkin in the form of slices is Kustovaya Oranjevaya (*S. pepo* L.) observed in varieties. When analyzing the changes in all organoleptic indicators, it was observed that the aroma and taste of fruit meat in all experimental varieties were on average 0,43-0,57 and 0,42-0,71 points respectively. In our opinion, these changes occur due to biochemical changes in the composition of the product during storage.

In general, during the first period of storage, the overall score in the main varieties was 80,29 - 88,57 points and was considered good in itself.

Only in the medovaya variety, which was rated 84,71 points before being put on storage, the total score was 71,14 points and was considered satisfactory. In the second period of storage (10 days), the quality significantly decreased. During storage, the taste and aroma indicators of the samples decreased sharply (0,85-1,14 and 0,71-1,14), which in itself significantly affected the overall price and decreased by 13,86-18,71 points. As a result, the total score of pumpkin seeds was 70,83-78,00 points and was considered satisfactory.

TABLE 2. CHANGES IN ORGANOLEPTIC INDICATORS IN THE STORAGE OF SLICES OF PUMPKIN FRUITS (2016-2018 YY)

Storage periods, days	Кўрсаткичлар					Overall rating, points
	Appearance	Color	Consistency	Taste	Aroma	
	Important coefficient					
	3	3	4	6	4	
Ispanskaya 73 (<i>C. maxima</i> Duch.)						
0	4,71±0,45	4,57±0,49	4,71 ±0,45	5,00±0,00	5,00±0,00	96,71
5	4,29±0,45	4,29±0,45	4,29±0,45	4,57±0,49	4,57±0,49	88,57
10	4,00±0,00	4,00±0,00	3,86±0,35	3,86±0,35	3,86±0,35	78,00
15	3,00±0,00	3,00±0,00	2,00±0,00	2,00±0,00	2,00±0,0	46,00
Volzhskaya Seraya 92 (<i>C. maxima</i> Duch.)						
0	4,43±0,49	4,43±0,49	4,86±0,35	4,86±0,35	4,86±0,35	94,57
5	4,14±0,35	4,14±0,35	4,43±0,49	4,43±0,49	4,29±0,45	86,29
10	3,86±0,35	3,86±0,35	4,00±0,00	3,86±0,35	3,86±0,35	77,71

15	3,00±0,00	3,00±0,00	3,00±0,00	2,00±0,00	2,00±0,00	48,00
Medovaya(C. maxima Duch.)						
0	4,29±0,45	4,43±0,49	4,29±0,45	4,14±0,35	4,14±0,35	84,71
5	4,00±0,00	4,00±0,00	4,00±0,00	3,71±0,45	3,71 ±0,45	77,14
10	3,71±0,45	3,71±0,45	3,71±0,45	3,29±0,45	3,43±0,49	70,57
15	3,00±0,00	2,00±0,00	2,00±0,00	2,00±0,00	1,00±0,00	43,00
Non kadi (C. Pepo)						
0	4,29±0,45	4,14±0,35	4,14±0,35	4,57±0,49	4,57±0,49	87,57
5	4,14±0,35	4,14±0,35	4,00±0,00	4,00±0,00	3,86±0,35	80,29
10	3,86±0,35	3,86±0,35	3,86±0,35	3,57±0,49	3,43±0,49	73,71
15	3,00±0,00	2,00±0,00	2,00±0,00	2,00±0,00	2,00±0,00	43,00
Kustovayaoranjevaya (C. pepo L.)						
0	4,14±0,35	4,29±0,45	4,29±0,45	4,43±0,49	4,57±0,49	87,29
5	4,00±0,00	4,14±0,35	4,00±0,00	4,00±0,00	4,00±0,00	80,43
10	3,71 ±0,45	3,57±0,49	3,57±0,49	3,43±0,49	3,43±0,49	70,43
15	0,00±0,00	0,00±0,00	0,00±0,00	0,00±0,00	2,00±0,00	46,00
Palov Kadu268 (<i>Cucurbita moschata</i> Duch.)						
0	4,29±0,45	4,14±0,35	4,14±0,35	4,57±0,49	4,57±0,49	87,57
5	4,14±0,35	4,14±0,35	4,00±0,00	4,00±0,00	3,86±0,35	80,29
10	3,86±0,35	3,86±0,35	3,86±0,35	3,57±0,49	3,43±0,49	73,71
15	3,00±0,00	1,00±0,00	2,00±0,00	2,00±0,00	2,00±0,00	40,00
Kashgarskaya 1644 (<i>Cucurbita moschata</i> Duch.)						
0	4,14±0,35	4,57±0,49	4,57±0,49	4,57±0,49	4,7,1±0,45	90,71
5	4,00±0,00	4,00±0,00	4,14±0,35	4,14±0,35	4,29±0,45	82,57
10	3,86±0,35	3,86±0,35	3,57±0,49	3,43±0,49	3,71±0,45	72,86
15	3,00±0,00	2,50±0,00	2,00±0,00	2,00±0,00	2,00±0,00	44,50

At the end of the storage, there was a sharp decline in quality, especially in all research varieties, 13-15 days, and the total price was in the range of 40-48 points.

The consistency, aroma and taste of all the samples were unsatisfactory, and the appearance and color were satisfactory evaluated. This means that the product is unsuitable for consumption.

The main cause of many losses was the cause of Phytopathological diseases during storage.

As a result of organoleptic evaluation of stored pumpkin slices can be concluded as follows:

- cut pumpkin slices +2....When stored at a temperature of +4°C and in conditions with a relative humidity of 80-90% of the air, the limited storage period is 10 days.
- Slices of fruit of Ispanskaya 73 and Volzhskaya Seraya 92 varieties can be stored up to 10 days qualitatively, slices of fruit of other varieties are recommended to be stored 5 days
- it turned out that the fruits of the Medovaya variety, which belong to the type of large-fruited pumpkin, are completely unsuitable for storage in the conditions under research in the form of

slices.

LIST OF REFERENCES

1. Organoleptic methods otsenok pishchevyx products: Terminology. - M.: Nauka, 1990.-38 p.
2. Polegaev V.I. Method otsenki quality of fruits and vegetables (Metodicheskie razrabotki). M.: - 1978.- 66 p
3. **Umidov Sh.E., Matnazarov A.S., Temurov T.Sh. Criteria for determining the quality of pumpkin fruits by technological properties.** // International Multidisciplinary Research Journal (SAARJ). – India, January 2021, – Volume 11, – Issue 1, – 105958/2249-7137.2021.00059.8 (ISSN:2249-7137, Impact Factor: SJIF 2021=7.492).
4. Umidov Sh.E. Selection of juicy squash varieties and technology of obtaining juice from them. // Journal of Agrochemical Protection and Plant Quarantine. - Tashkent, 2019. - № 3. - B.57-58 (06.00.00; № 11).
5. Umidov Sh.E.. Agrobiological and Technological Peculiarities of Juicy Pumpkin Varieties. // International Journal of science and research (IJSR). – India, 2019, – Volume 8, – Issue 11, – P.1227-1231 (№12-Index Copernicus ICV=79.57; №23-SJIF, IF=7.426; №40-Research gate, IF=0,28).
6. Umidov Sh.E., Buriev X.Ch. Recommendations for storage and extraction of juicy squash varieties. - Tashkent, Editorial and Publishing Department of Tashkent State Agrarian University, 2019. - 16 p.