

EFFECT OF LATE RIPENING MELON FRUITS ON THEIR TECHNOLOGICAL PROPERTIES WHEN STORED IN A HANGING STATE IN VALLEY CONDITIONS

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Annotation

In this article, late-ripening melon varieties such as Kara-puchak 3744, Umirvaki 3748, Zargulobi, Sakhavat, To'yona, Kok Gulobi, Amudaryo, Koybosh 476 and Kara Gulobi, grown in the conditions of the Fergana Valley, are stored in a local hanging state and the changes in the biochemical composition were determined while maintaining the aspects of ease of transportation.

Keywords: Kara-puchak 3744, Umirvaki 3748, Zargulobi, Sakhavat, Toyona, Kok gulobi, Amudarya, Koybosh 476, Qora gulobi, biochemical change, significance coefficient.

Relevance of the topic. As a field of agriculture, the main task of melon growing is to create varieties and areas with guaranteed harvests, to supply the fruits of melon crops in sufficient quantities to meet the needs of the population and the processing industry, and to export them outside the country, and to effectively organize the process of storing melons, is to meet the needs of the population throughout the year.

External, internal appearance and taste of varieties are of great importance in the sale or delivery of melon crops abroad.

Research object. Researches were conducted on the varieties of late melons, Kara-puchak 3744, Umirvaki 3748, Zargulobi, Sakhavat, Toyona, Kok gulobi, Amudarya, Koybosh 476, Kara gulobi, which are grown in the regions of the valley.

Research methods

Changes in the biochemical composition of melon fruit during hanging were studied. In this case, research was conducted on the storage of whole melon fruits at room temperature (14-22°C) and relative humidity of 70-75%.

Research results

When the melon fruits selected for the experiment were stored hanging, their biochemical composition was analyzed every 30 days during storage.

In cooperation with the scientific staff of the laboratory "Selection of vegetables and potato crops" of the Scientific Research Institute of Vegetables, Potatoes and Potatoes, the morphobiological characteristics of potato varieties were studied.

Table 1 Marketability and ease of transportation of the studied varieties (Fergana Valley, QQDITI, 2021)

№	Varieties name	Thickness	Hardness	To transport convenience
1.	Kara-puchak 3744	Thick	Thick	Thick
2.	Umirvaki 3748	Thick	Thick	Thick
3.	Zargulobi	Thick	Thick	Thick
4.	Sakhavat	Thick	Thick	Thick
5.	Toyona	Average	Average	Uncomfortable
6.	Qora gulobi	Thick	Thick	Thick
7.	Kok gulobi	Thick	Thick	Thick
8.	Koybosh 476	Thick	Thick	Thick
9.	Amudarya	thick	Average	Uncomfortable

In the experiments, changes in the fruit weight of melon varieties according to the period, blood content, soluble dry matter and long-term storage were studied. These signs are of great importance in the cultivation of melons intended for export.

During the experiments, 5 pieces of melon fruits were taken from the studied varieties and selected to be sent to the laboratory in order to study the density, appearance, color, shape and biochemical composition of the fruits.

As a result of biochemical analysis, a number of indicators were revealed, among which, the variety with the most dry matter content in its freshness was the Umirvaki 3748 variety, which was 25.92%. This rate decreased when analyzed every 30 days and dropped to 19.6% after 120 days of storage. The lowest rate was in the Zargulobi variety, which was 8.6% when fresh. After 120 days of storage, it dropped to 6%.

In other varieties in the experiment, this indicator was in the range of 10-15%. The total amount of carbohydrates also varied among cultivars in proportion to dry matter content. In particular, the highest indicator was observed in the Umirvaki 3748 variety. Here it is worth noting the amount of total carbohydrates slightly increased up to 60 days. It was observed that it decreased after 90 days of storage. After 120 days of storage, the indicator was slightly lower than before. In some varieties, it has decreased sharply. This trend was observed in all varieties tested.

Also, the amount of organic acids increased during storage in Kara-puchak 3744 variety. In particular, the amount of organic acids in the initial state was 0.078%, after 60 days it was

0.082%, and after 120 days it was 0.126%. In other varieties, it was observed that this indicator regularly decreases.

When analyzing the amount of starch in melon fruits, it was observed that it decreases sharply during storage. Only in Umirvaki 3748 and Sakhavat varieties, the amount of starch remained until the last stages of storage. It was shown that in all other varieties, it decreased to a minimum value after 30 days of storage, and did not remain at all after 60 days of storage.

The amount of ascorbic acid in the tested melon fruits was also determined. The highest ascorbic acid content was observed in Sakhavat variety and 40 mg% was recorded in 100 g of fruit. It decreased by 20.1 mg% when stored for 120 days. The lowest indicator was observed in the Koybosh 476 variety, which was 9.59 mg% when fresh, and 2.85 mg% when stored for 120 days.

Changes in the biochemical composition of melon fruits when stored in a hanging state (2020-2022) Table 2

Storage periods, days	Dry matter, %	Carbohydrates			Starch, %	Organic acids, %	Ascorbic acids mg/100 g	β-carotene, mg/100 g
		Including		Total sugar content, %				
		monosahara, %	sucrose, %					
Kara-puchak 3744								
0	14,44±0,015	5,22±0,052	2,30±0,56	7,52±0,082	1,25±0,010	0,078±0,002	13,15±0,065	0,589±0,001
30	13,80±0,023	5,38±0,014	3,80±0,032	9,18±0,056	0,30±0,055	0,070±0,014	10,02±0,085	0,708±0,055
60	12,63±0,089	5,44±0,009	3,25±0,12	8,69±0,013	-	0,082±0,056	8,60±0,010	0,562±0,063
90	11,82±0,055	4,19±0,063	3,00±0,054	7,19±0,057	-	0,101±0,098	6,45±0,056	0,438±0,021
120	11,69±0,042	3,37±0,21	2,95±0,10	6,32±0,021	-	0,126±0,021	5,09±0,030	0,239±0,010
Umirvaki 3748								
0	25,92±0,010	2,89±0,085	9,22±0,020	12,11±0,097	7,51±0,065	0,120±0,022	20,55±0,014	0,635±0,031
30	22,30±0,035	2,06±0,024	11,80±0,031	13,86±0,012	6,48±0,020	0,111±0,054	16,30±0,025	0,712±0,020
60	21,68±0,055	3,95±0,010	9,20±0,097	13,15±0,049	3,15±0,008	0,098±0,032	14,15±0,065	0,601±0,010
90	20,13±0,010	4,86±0,087	8,10±0,052	12,96±0,054	1,04±0,010	0,118±0,041	12,13±0,085	0,518±0,052
120	19,60±0,012	6,10±0,033	6,00±0,010	12,10±0,087	0,45±0,061	0,082±0,036	10,60±0,010	0,352±0,041
Zargulobi								
0	8,36±0,021	4,43±0,028	0,33±0,062	4,76±0,054	1,07±0,025	0,182±0,030	10,69±0,012	0,503±0,047
30	7,50±0,032	1,98±0,041	3,20±0,080	5,18±0,085		0,170±0,021	6,10±0,097	0,545±0,031
60	6,95±0,010	1,70±0,084	2,90±0,016	4,60±0,012		0,163±0,010	4,05±0,053	0,511 ±0,012
90	6,00±0,056	1,05±0,012	1,05±0,019	3,20±0,010		0,160±0,020	2,31±0,051	0,312±0,065

Continued from table 2

120	5,17±0,074					0,120±0,015		0,06±0,020	0,201±0,027
Sakhovat									
0	18,84±0,065	2,22±0,013	5,31±0,014	9,53±0,050	2,91±0,033	0,142±0,014		40,83±0,012	1,022±0,010
30	17,90±0,098	2,81±0,050	6,20±0,057	9,01±0,065	1,86±0,042	0,130±0,032		31,60±0,052	1,142±0,056
60	15,88±0,011	1,47±0,041	6,00±0,011	7,47±0,033	0,90±0,011	0,131±0,020		28,10±0,030	0,962±0,033
90	15,16±0,053	1,80±0,023	5,10±0,051	6,90±0,021	0,20±0,043	0,117±0,047		25,15±0,051	0,715±0,041
120	14,48±0,021	1,80±0,078	4,20±0,085	6,00±0,010	-	0,080±0,029		20,10±0,012	0,495±0,023
Toyoona									
0	10,96±0,052	5,42±0,021	1,15±0,021	6,57±0,010	0,50±0,012	0,250±0,010		18,77±0,033	0,704±0,088
30	10,00±0,051	4,70±0,033	2,20±0,054	6,90±0,002		0,200±0,050		10,60±0,041	0,613±0,010
60	9,20±0,029	4,70±0,017	1,30±0,047	6,00±0,022		0,200±0,045		7,15±0,043	0,500±0,065
90	7,80±0,047	4,20±0,074	0,90±0,026	5,10±0,014		0,192±0,032		5,13±0,087	0,486±0,032
120	6,43±0,024	3,30±0,050	0,10±0,027	3,40±0,099		0,180±0,029		2,80±0,005	0,237±0,004
Kok gulobi									
0	11,15±0,052	5,42±0,021	1,15±0,021	6,57±0,010	0,50±0,012	0,250±0,010		19,01±0,033	0,811±0,088
30	11,00±0,051	4,70±0,033	2,20±0,054	6,90±0,002		0,200±0,050		12,60±0,041	0,745±0,010
60	9,80±0,029	4,70±0,017	1,30±0,047	6,00±0,022		0,200±0,045		7,15±0,043	0,630±0,065
90	7,98±0,047	4,20±0,074	0,90±0,026	5,10±0,014		0,192±0,032		5,23±0,087	0,578±0,032
120	7,85±0,024	3,30±0,050	0,10±0,027	3,40±0,099		0,180±0,029		2,90±0,005	0,411±0,004
Qoybosh 476									
0	10,36±0,008	5,54±0,062		5,54±0,051	0,23±0,010	0,358±0,033		9,59±0,054	1,152±0,012
30	10,04±0,018	4,10±0,041	2,00±0,035	6,10±0,010		0,262±0,068		6,10±0,032	1,280±0,054
60	8,72±0,056	3,74±0,008	1,86±0,041	5,60±0,054		0,230±0,021		3,80±0,012	1,150±0,080
90	7,90±0,098	3,20±0,021	1,60±0,074	4,80±0,057		0,241±0,048		3,10±0,057	1,000±0,030
120	5,32±0,032	2,13±0,051	0,25±0,010	2,3 8±0,010		0,100±0,062		2,85±0,041	0,762±0,019

Summary

As a result of the conducted experiments, it can be concluded that the biochemical composition of melon fruits changes regularly when they are stored. The content of dry matter, total carbohydrates and organic acids decreases. Starch completely breaks down during storage.

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