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Research Article

TO STUDY THE EFFECT OF TEMPERATURE ON THE STORAGE OF PUMPKIN

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A.B.Yo'lchiev
Andijan Institute of Agriculture and Agrotechnology, Andijan, Uzbekistan

N.I. Khudoyberdieva
Andijan Institute of Agriculture and Agrotechnology, Andijan, Uzbekistan

L.A. Botiraliev
Andijan Institute of Agriculture and Agrotechnology, Andijan, Uzbekistan

M.Z.Zaynobiddinov
Andijan Institute of Agriculture and Agrotechnology, Andijan, Uzbekistan

ABSTRACT

This article presents the results of a study on the effect of temperature on the shelf life of squash. Pumpkins can be stored at - 18 °C for 12-15 months. A 4 °C difference in storage temperature drastically reduced the shelf life of the squash, leading to a reduction of 12-15 months to 30-40 days. In the functional diet, it is stated that the temperature of - 17-18 °C is optimal in the correct selection of storage conditions for the uninterrupted supply of squash to the population and the organization of long-term storage of squash as much as possible.

KEYWORDS

Squash, temperature, shelf life, melons, dietetics, functional nutrition.

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INTRODUCTION

In recent years, the demand for food in our country is growing. In this regard, in order to increase the volume of food production and increase exports, several priorities are set out in the Decree of the President of the Republic of Uzbekistan dated October 23, 2019 PF-5853 "On approval of the Strategy of Agricultural Development of the Republic of Uzbekistan for 2020-2030" was determined [1,2].

The development and implementation of state policy on food security, as well as the soil and climatic conditions of the agricultural skills formed in this area, based on water supply, all regions of the country, specializing in the cultivation of certain types of agricultural products. It will allow some districts of the regions to specialize in the cultivation of certain types of agricultural products and increase their processing, storage and domestic and export volumes.

MATERIALS AND METHODS

As the demand for agricultural products in our country grows, there are several problems in growing high-quality and low-cost agricultural products. Currently, the main problem in obtaining quality products in vegetables and melons is water shortage. Depending on the location of the regions, the placement of drought-tolerant crops, taking into account the water supply, is one of the most important tasks today. Moisture is important for the development of plants, the course of the growing season, and the increase in productivity [3,4,5].

Water is the main component of melons in agricultural products. Depending on the growing conditions of melons, they grow well even in saline soils. If the amount of chlorine in the soil exceeds 0.0015%, the crop will die. In our country, the effective use of saline soils can provide the population with quality melons. Among melons, the importance of squash is high. Pumpkin - a family of annual and perennial plants belonging to the family of squash, and melons. There are 13 known species of squash, the homeland of which is North and South America. It has long been cultivated in Central Asia, including Uzbekistan.

The remains of pumpkins found in the archaeological excavations of the soil (7th-8th centuries BC) confirm this. There are 3 common types of squash, such as large-fruited, nutmeg, and hard-skinned. The root is a stalk, the root length is 2 m. The stem lies down and grows in clumps. The leaves (depending on the type) are large, hairy, with curls in the leaf axils. The flower is bisexual, large (small), yellow, and pollinated from the outside. The fruits come in a variety of shapes and colours, from pale yellow to orange [6,7,8]. The root system of the pumpkin is drought-resistant due to the fact that it goes up to 2 meters in length. The chemical composition of pumpkin fruit is given in the table below.

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Table 1. The composition of the fruit of the pumpkin

№	*Composition*	*Amount,%*
1	The amount of dry matter	15-18
2	Amount of sugar, ascorbic acid, carotene, thiamine, riboflavin, nitrogen compounds	4-11
3	Connective tissue	0,7
4	Protein	0,5
5	fat	0,2
6	amount of ash	0,6
7	The amount of fat in the seeds	20-40

Pumpkin is eaten boiled, steamed, fried, various pastries, soms, bread, jams and juices are prepared. In nutrition, a new direction in the development of functional nutrition, ie the development of a type of food intended for a specific segment of the population. For example, the development of functional foods for people with diabetes. This direction mainly means the use of natural products that have a regulatory effect on the body and certain organs of the body. One of the most suitable food raw materials for the above-mentioned dietetics is pumpkin. Pumpkin is an important source of functional nutrition. Because it is easily absorbed by the body and helps absorb other heavier foods [8,9,10].

One of the most pressing issues today is the uninterrupted supply of pumpkins to the population, which is recommended for functional nutrition. In solving these problems, it is necessary to first increase their productivity and develop effective ways to maintain them. An effective way to preserve squash in the uninterrupted supply of squash to the population throughout the year is to freeze this squash. Quick-frozen squash retains its bacterial purity and nutritional value. Pumpkin has high biological properties. One of the best ways to ensure the preservation of biologically valuable products in agricultural products and the production of quality raw materials is the rapid freezing from a technological point of view. Storage temperatures are important for the long-term storage of squash. Depending on the temperature, the shelf life of the pumpkin varies [11-15].

The following table lists the storage times, depending on the storage temperatures of the squash.

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Table 2. The effect of temperature on the storage of pumpkin

№	*Storage temperature*	*Shelf life*
1	-18 °C	12-15 ой
2	-12 °C	30-40 сутка
3	-8 °C	7-11 сутка
4	0 °C	5-6 сутка
5	5-10 °C	5-6 сутка

As can be seen from the table, the pumpkin will need to be stored at -18 °C to prolong its shelf life. A 4 °C difference in storage temperature dramatically reduces the shelf life of squash, leading to a shortening from 12-15 months to 30-40 days. In addition, changing the temperature from -12 °C to -8 °C during storage reduces the storage time by 3-4 times.

CONCLUSION

In conclusion, the temperature of -17-18 °C is optimal in the selection of the right storage conditions for the continuous supply of squash to the population in a functional diet and the organization of long-term storage of squash as much as possible.

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