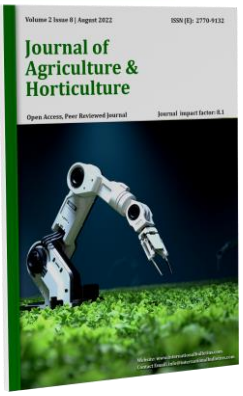

METHODS OF DRYING PERSIMONS IN CONVECTIVE EQUIPMENT

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Abstract. Persimon fruit is native to China and came to Europe in the 19th century. It is also called "Fire-colored sun" and "Chinese peach". Fuyu and Tomapon varieties made 27.8 - 28.8% of our standard variety Hiakume in terms of dried product output. Among the other cultivars, Zenji-maru yield was slightly close to that of our control cultivar, i.e. 24.8%. In addition, it contains S and R, potassium, iron, phosphorus, glucose, sucrose, calcium and magnesium and is considered useful for the human body.

Key words: Persimmon "Fire color sun", Chinese peach, Fuyu and Tomapon, Zenji-maru, Hiakume, S and R, potassium, iron, phosphorus, glucose, sucrose.

Introduction

According to the law of the Republic of Uzbekistan on the strategy of agricultural development for 2020-2030, in the following years, the reform of our country's agriculture, in particular, the improvement of the state management system in the field, the wide introduction of market relations, agriculture certain works are being carried out to strengthen the legal basis of relations between entities that grow, process and sell agricultural products, attract investments to the sector, introduce resource-efficient technologies and provide agricultural products producers with modern techniques.

Persimmon is a subtropical plant and there are many varieties of it. Persimmon grows wild in China, and from there it was brought to Japan and the CIS countries. It grows on the coasts of Georgia, Azerbaijan, Tajikistan, Crimea and the Black Sea. It is a deciduous, 6-12 m tall, unisexual or bisexual plant. Flowers appear on annual shoots.

Persimon fruit changes shape, color and taste depending on the type and variety. The fruit is eaten raw, it is very useful for human health.

The fruits are firmer at first and become sweeter after a little ripening. It is propagated by sowing seeds and grafting. After planting, it is harvested in 3-4 years. Among subtropical plants, it is cold-resistant. Most are pollinated from outside.

The fruit ends at the end of one-year branches, ripens in November. The fruits of most varieties ripen after picking. The fruit is cut with garden shears and then extracted with a fruit band.

The persimon palm does not choose a lot of land, but it grows well in fertile soil and gives an abundant harvest. Persimon fruit is eaten wet and dried. In addition, its fruit is used in the preparation of various sweets such as jam. Persimon trees can withstand 18°C frost. When the cold reaches 20°C, if its one-year branches are more than that, the upper part of the ground is severely damaged. It is quite resistant to dry weather, but it sheds its fruit when

there is insufficient moisture in the soil. It is a light-loving plant. In the conditions of Uzbekistan, the construction of palm groves began in February.

Persimmon is mainly distributed in Tashkent region and Surkhandarya region and Fergana valley. But in the following years, with the help of amateurs, it was started to breed in regional farms where winters are cold.

Persimon drying. Persimmon is a relatively new plant for our country. Due to the fact that it has not been cultivated in our republic for a long time, persimon drying has not yet developed fully. Drying of persimon fruits is also a promising field. Because persimon fruits have a unique place among fruit crops due to the abundance of sugar content (Buriyev Kh.CH, Rizaev R.M., 1996).

The technological processes of dry product preparation are harvesting, transportation, storage, sorting, washing, cutting of fruits, smoking, drying, moisture packing, placing in boxes and storage. Persimon varieties Tomapon, Zenji-maru, Hiakume and Shing varieties are suitable for drying.

Research methods. Researches were conducted in the laboratory of the Department of Agricultural Products Storage and Processing of Tashkent State Agrarian University in 2 different ways:

I .Drying in the dried state in the whole state;

II. Slice and dry;

Research results. In this experiment, Zenji-maru, Hiakume, Tomapon and introduced Sheng, Fuyu, and Korolek persimon varieties included in the state register of agricultural crops recommended for planting in the territory of the Republic of Uzbekistan were used for drying persimon fruits. These selected varieties are characterized mainly by dry matter above 16% and firmness of the fruit. In our study, the Hiakume persimon variety was taken as a control. Experiments were conducted in an electric dryer in laboratory conditions. In our initial version, 12 to 20 fruits of 6 persimon varieties were selected for drying and weighed. Persimon fruits were extracted in the same way for each replicate. For the experiment, the persimon palm fruits were peeled off and weighed on a separate laboratory scale. In the next step, they were picked whole on pre-prepared trays and placed in infrared convective dryer for drying at 40-45°C. Persimon fruits were dried at this temperature for 12 hours. The results obtained from the experiment are reflected in our table below (Table 1).

Table 1

Results of whole persimon fruit drying in an electric dryer.

№	Varieties of persimmon	The number of persimmons placed for drying, pcs	Weight of persimmon fruits left for drying, gr	Amount of dried product output, gr	Drying time, hours
1	Hiakume (control)	10	1720	450	24
2	Zenji-maru	17	1650	410	24
3	Tomapon	12	1420	395	24
4	Sheng	12	1570	300	24
5	Fuyu	11	1250	360	24
6	Korolek	13	1412	330	24

During the study, all persimon varieties had different indicators of dried product yield. The Fuyu and Tomapon varieties participating in the experiment exceeded our standard variety Hiakume (control) and made 27.8-28.8% of the dried product output. In our control variety, the amount of dried product was 26.1%. Among the other varieties studied during the study, Zenji-maru yielded 24.8% dried product, which is close to our control variety. Korolek - 19.1% and Sheng - 23.3% showed the lowest result in terms of dry product yield.

During our research, the second option for drying persimons, i.e. cutting them into pieces and drying them in an electric dryer, according to the results of the experiment, the best dried product in terms of yield was Hiakume (control) - 25.9% and Zenji-maru - It was observed in 25.0% varieties. The Korolek and Fuyu varieties took the next places, with 24.0% to 24.4% dried product obtained.

Table 2.

The results of drying persimons in an electric dryer.

№	Varieties of persimmon	The number of dates placed for drying, pcs	Weight of date fruits left for drying, gr	Amount of dried product output, gr	Drying time, hours
1	Hiakume (control)	10	1850	480	24
2	Zenji-maru	17	1600	400	24
3	Tomapon	10	3100	720	24
4	Sheng	13	1500	340	24
5	Fuyu	12	1250	300	24
6	Korolek	15	1310	320	24

The lowest indicator of dried product output was observed in Sheng and Tomapon varieties. The physico-chemical parameters of our above experiment are sugar content 20-22%, vitamin C - 15.39 mg/%, potassium - 100, sodium - 12.9, calcium - 16.6, magnesium - 9.3 and iron - 0 ,6. It should also be noted that the content of persimons is high in iodine - 0.63 mg%. Eating dried persimons improves the gastrointestinal tract, liver function, eyesight, removes kidney stones, strengthens heart function, fights against hypertension and swelling, anemia, cough, and regulates the activity of the skin and gonads.

Fig. 1. The experiment carried out in the drying ovens.

In recent times, the production of sukat, that is, first candied and then dried fruits, has become a widespread tradition. For this, persimon fruits are picked as above, pre-processed, washed and sliced. Then the sliced fruits are boiled in 15-20% sugar water for 20-25 minutes and dried in the sun for 5-6 days.

Such fruits are distinguished by their sweet and pleasant taste. Dried persimon fruits, like all other dried fruits, are placed in special cardboard boxes or kraft bags in cool warehouses and stored in refrigerated warehouses at a temperature of 0-5 degrees and relative air humidity not higher than 65 percent (Trisvyatsky L.A, Lesik B.V, Kurtina V.N. 1991).

Conclusion

As a result of two years of research, the following conclusions can be drawn: observations show that during the two years of the experiment, in the experiment conducted on the drying of persimon fruit in the electric drying equipment in the whole state, the Fuyu and Tomapon bolshoi varieties outperformed our standard variety Hiakume (control) in terms of the output of the dried product. It was 27.8 - 28.8%.

In the second version of our research, in our two-year experiments, i.e., in the experiment on drying persimons in an electric dryer, the best dried product yield was Hiakume (control) - 25.9% and Zenji-maru - 25.0 observed in % varieties.

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