

CREATION NEW VARIETIES OF NON-TRADITIONAL FRUIT CROPS IN UZBEKISTAN

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Abstract. *The article presents the results of a scientific study on the non-traditional culture of Japanese medlar in Uzbekistan and the development of a new variety of this crop. Japanese medlar is an evergreen fruit and ornamental crop. In the conditions of the Tashkent region it can withstand frosts down to -18 °C. The fruits of the new variety “Yagona” are quite large, the average weight of one fruit is 36 grams. The maximum weight of the fetus is 55 grams. It produces a harvest every year; the yield of a 10-year-old tree averages 35 kg.*

Keywords: *japanese medlar, variety, harvest, evergreen, research, non-traditional.*

INTRODUCTION. In order to further ensure the country’s food security and saturate the market with high-quality, safe and affordable food products, on January 16, 2018, has been signed Decree No. UP-5303 of the President of the Republic of Uzbekistan “on measures to further ensure the country’s food security”. The strategic goal of food security is to provide the country's population with safe agricultural products and food. The guarantee of its achievement is the stability of domestic production, as well as the availability of the necessary reserves and reserves. The decisive role in ensuring food security is played by varieties with high productivity and crop quality, adaptive to local soil and climatic conditions and resistant to abiotic and biotic factors. Crop diversification is also important.

MATERIAL AND METHODS. The research material was collected samples of genetic resources of the Japanese medlar from the Research Institute of Plant Genetic Resources. The passage of phenological phases, biological and physiological characteristics of the samples were studied. Morphological descriptions of the trees were also carried out. “Methods for studying collection samples of fruit crops” were used.

RESULTS AND DISCUSSIONS. In order to introduce new non-traditional fruit crops for Uzbekistan, the department of genetic resources of fruit and berry crops and grapes of the Research Institute of Plant Genetic Resources began in 1990 breeding work to develop a variety of Japanese medlar (*Eriobotrya japonica*), adapted to the agroclimatic conditions of the local environment, with high productivity, resistance to winter and late spring frosts, with good technological properties of the fruit.

Japanese medlar is a very healing plant. The leaves, bark and raw fruits of the plant contain nutrients that are used to nourish the skin. The leaves contain many valuable substances - antioxidants, tannins and absorbents. A decoction of the leaves of the plant is used for diarrhea. To do this, a handful of muskrat leaves are boiled in water and soaked for 4 hours. If the prepared tincture is taken half an hour before meals, the illness immediately subsides. This remedy helps lower cholesterol and remove toxins.

The source material was a sample with catalog number K-35235 from the institute’s loquat gene pool, introduced from Japan. As a result of many years of breeding work, a variety of Japanese medlar was developed, characterized by relatively winter hardiness, fruit size and quality, with regular fruiting (Table No. 1). The bred variety feels good in open ground in the conditions

of the Tashkent region of Uzbekistan. In 2020, this variety, called “Yagona” (“The Only One”), was transferred to the State Variety Testing Commission.

According to the passage of phenological phases, Japanese medlar differs sharply from other fruit crops common in Uzbekistan. She is not deciduous. In the conditions of Uzbekistan, flowering occurs in the fall, October-November. The fruits ripen very early, on average in March - early April. During this period, in our conditions, no fruits ripen.

The fruits of the “Yagona” variety are quite large, the average weight of one fruit is 36 grams. The maximum weight of the fetus is 55 grams. It produces a harvest every year; the yield of a 10-year-old tree averages 35 kg.

Table No. 1

Economic characteristics of medlar in the conditions of the Tashkent region

No.	Properties	Unit	Recommended variety Yagona	Sample No. K-35235
1	Fruit ripening time		very early	very early
2	Calendar dates for fruit harvesting - beginning, end	Data	5.03 – 15.04	3.03 – 12.04
3	One-dimensionality of fruits		one-dimensional	Non-one-dimensional
4	Productivity from 1 tree	kg	35.5	27.5
5	Productivity per 1 hectare	c	142	103
6	Average fetal weight:	g	36	24
7	Maximum fetal weight	g	55	39

The new medlar variety “Yagona” is superior in biochemical parameters to the original material (Table No. 2).

Table No. 2

Biochemical composition of medlar fruit pulp

No.	Main biochemical indicators	Unit of measurement	Variety Yagona	Sample No. K-35235
1	Dry matter	%	11,4-13,5	14
2	Sahara	%	6,0-8,6	5,7-6,8
3	Acids, titratable acid	%	0,14-0,18	0,17-0,21
4	Pectin substances	g/100 g	0,94	0,98
5	Vitamin C	mg/100 g	9,6	8,4
6	Tasting evaluation of fruits	point	9	4

Loquat (*Eriobotrya japonica*) is a subtropical tree of the rose family (Rosaceae), grown for its evergreen foliage and edible fruit. Loquats are native to central-eastern China. It was introduced to Japan over 1,000 years ago, where it was grown as a horticultural plant and is still highly prized. It grows wild in subtropical conditions in southeast China at an altitude of 900 to 2000 meters above sea level. This is a species adapted to temperate or cold-temperate climates with average environmental humidity requirements. It adapts to various types of soil, prefers well-lit areas and does not tolerate strong winds.

As a decorative species, Japanese medlar is often planted in parks and gardens. The fruits are rich in fiber, vitamin A and antioxidants.

Japanese medlar, a tree 4-8 meters high, rarely exceeds 10 meters in height. The leaves are thick, hard, located along the branches, sometimes they are located in terminal bundles, grouped towards the ends of the branches. The leaf shape is lanceolate-elliptic, the edges of the leaf blade are coarsely serrated (toothed), length 200–250 mm, width 60-90 mm.

The flowers are small, creamy white, fragrant and pubescent, 1-2 cm in size and collected in inflorescences or multi-flowered panicles. They have five cream-colored petals; the peduncle and calyx are serrated; blooms between autumn and winter. This is a honey plant.

The fruits are fleshy, spherical, pear-shaped or oval, yellow, 3-6 cm in diameter. The skin is smooth, shiny, and easy to remove. The pulp of the fruit is yellow-orange, with a pleasant smell and taste, juicy, sweet with a sour taste, reminiscent of other fruits of the same family, such as plums, apricots and cherries. Contains 2-4 brown seeds. In the conditions of the Tashkent region, the ripening of Japanese medlar fruits takes place on average from April to May.



Photo 1. Fruits with leaves



Photo 2. Fruits of the “Yagona” variety

The Yagona variety reproduces well by seeds and vegetatively. To obtain pure-quality seedlings, they are grafted onto medlar, hawthorn, and pear. They are well established on a variety of soils, from sandy loam to clayey, and begin to bear fruit at three to four years of age. Nature is resistant to most diseases and insects. This variety is recommended for both fruit and ornamental use, and can also be grown as a houseplant.

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