



YACON PERSPECTIVE VEGETABLE CULTURE FOR UZBEKISTAN

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ABSTRACT

In Uzbekistan, large-scale measures have been taken recently to ensure food security and fully meet the needs of the population for vegetable products, as well as expand their assortments. However, the range of vegetables in Uzbekistan is insufficient and needs to be expanded.

The article presents the results of the morphological properties, productivity and chemical composition of the root tubers of Yacon during the introduction of the soil-climatic condition of Uzbekistan. The mass of the largest large root tubers was 270 g, large - 95 g, medium - 70 g, and small - 35 g, the yield of root tubers in the bush - 2.5 kg.

Keywords: *introduction, yacon, plants, leaves, root tubers, crop, harvest, stem.*

INTRODUCTION

Of all the wealth of the plant world, which includes about 350 thousand species of higher plants, man uses one hundredth of it. Therefore, one of the main tasks of modern agricultural science is the introduction of non-traditional vegetable crops, which implies the introduction of valuable, in one way or another, plants outside their natural and cultigenic areas - this is the enrichment of the plant resources of this region at the expense of the resources of the world flora.

More and more attention is paid to plants containing substances that can replace sugar and are beneficial for the human body [1]. In this respect, the yacon (*Polymnia sonchifolia* Poepp. & Endl.) Is a valuable object for introduction into Uzbekistan.

This perennial plant from South America contains up to 60% inulin in its root tubers and has a yield of 28-100 t / ha [3], which makes it a valuable raw material for the food and pharmaceutical industries. Yacon forms large tubers weighing up to 300-400 g, similar in shape to sweet potato tubers. The pulp is very juicy, crunchy, 93% water, 5-6% mono- and polysaccharides, and 1-2% minerals [2].

MATERIALS AND METHODS

Research on the introduction of yacon was carried out in the soil and climatic conditions of the Tashkent region of Uzbekistan. During the introduction, the yacon variety Yudinka of Russian selection was used. The institute is located in the Tashkent district of the Tashkent region, north of Tashkent. The climate is characterized by continental variable and dry air with sufficient light and heat. The duration of sunlight is 2700-3000 hours per year, with summer sunlight being 360-400 hours per month and 90-130 hours in winter. The daily temperature variability is high (10-15°C in winter and 15-20°C in summer) and reaches 30°C throughout the year. The greenhouse soil is a typical gray soil with pre-irrigation, groundwater is located at a depth of 6-7 meters, the humus content in the greenhouse soil is 1,0-1,36%, mobile phosphorus 12,8-29,3 mg/kg, potassium 197,5-285,6 mg/kg and N-NO₃ 12,1-21,9 mg/kg. Mobility is P₂O₅-14,8-36,3 mg/kg, K₂O-157,5-215,5 mg/kg.

Unheated greenhouse, seeds of hot pepper Margilan 330, Tillarang and Uchkun varieties, plants, fruits are the object of this study.

RESULTS AND DISCUSSION

Research on the introduction of yacon was carried out in the soil and climatic conditions of the Tashkent region of Uzbekistan. During the introduction, the Yudinka variety of Russian selection was used.

During the growing season of plants, biometric measurements of plants were carried out starting from July 20, and every 10 days the length of the stem, the number and size of leaves were determined. In particular, on July 20, measurements showed that the length of the main stem was 31.1 cm and the number of lateral stems was 10,2 pcs., The number of leaves was 47 pcs., The length of the leaves was 13,1 cm and the width was 12,1 see (figure). The number of leaves by August 20 after their transplantation increased from 47 to 97 leaves. The formation and development of lateral shoots during this period proceeded intensively from 10,2 pcs to 19,7 pcs.

Biometric measurements at the end of the growing season of the yacon plant on October 30 showed that the length of the main stem was 133,6 cm, the number of lateral stems was 13,7 pieces, and the number of leaves was 87,3 pieces, the length of leaves was 22,3 cm and width – 16,6 cm (figure 1).

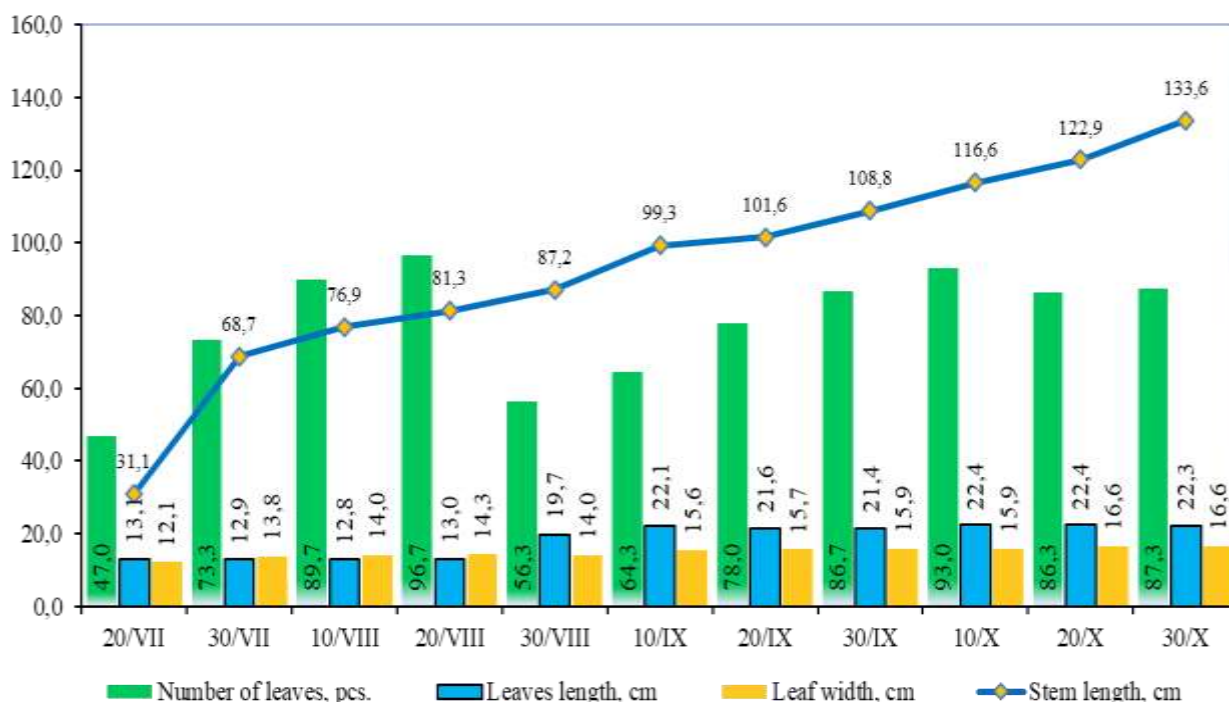


Figure 1. Biometric indicators for the introduction of yacon in the soil and climatic conditions of the Tashkent region (2019)

Yacon root tubers were harvested on October 30 and divided into fractions: largest, large, medium and small. In this relation, the length of the largest root tubers ranged from 19.0 cm to 11.0 cm, the width from 3.5 cm to 1.7 cm, and the length of the small root tubers - from 6.0 cm to 3.0 cm. width - from 1.0 cm to 2.0 cm (Table 1).

Table 1

Fractions and mass of root tubers during the introduction of yacon in the soil and climatic conditions of the Tashkent region (2019)

Indicators	Number of root tubers								Average tuber weight, g/plant.
	1	2	3	4	5	6	7	средний	
Largest root tubers									
Length, cm	19,0	18,0	15,5	12,5	11,0	-	-	15,2	270
Width, cm	3,0	1,7	2,5	3,0	3,5	-	-	2,74	
Large root tubers									
Length, cm	16,5	15,0	13,5	13,5	12,0	11,0	9,6	13,0	95
Width, cm	1,5	1,5	1,5	1,0	1,0	2,2	2,0	1,53	
Medium root tubers									
Length, cm	8,0	8,0	5,5	-	-	-	-	7,2	70
Width, cm	2,5	2,5	2,5	-	-	-	-	2,5	
Small root tubers									
Length, cm	6,0	5,5	5,5	4,0	3,0	-	-	4,8	35
Width, cm	2,0	2,0	2,0	1,0	2,0	-	-	1,8	

The mass of the largest large root tubers was 270 g, large - 95 g, medium - 70 g and small - 35 g, the average mass of root tubers in a bush was 2,5 kg.

As shown, chemical analyzes at the Institute of Plant Chemistry named after S.Yu. Yunusov of the Academy of Sciences of the Republic of Uzbekistan in the root tubers of yacon grown in the soil and climatic conditions of the Tashkent region contains dry matter - 20%, ascorbic acid (vitamin C) – 6,6 mg%, sugar – 6,2%, soluble monosaccharides - 50%, moisture - 84% and the mass fraction of inulin - 10%.

CONCLUSIONS

Thus, the introduction of yacon in Uzbekistan is in demand, primarily as a vegetable crop, and also by the food industry. The mass of the largest large root tubers was 270 g, large - 95 g, medium - 70 g and small - 35 g.

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