

## THE CULTIVATION OF SEEDLINGS, PLANTING DENSITY AND YIELD OF NEW VARIETIES OF SWEET POTATO (IPOMEA BATATAS LAM.)

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### ABSTRACT

The article presents the results of research on the germination of seedlings from tubers and the density of sweet potatoes. New varieties were evaluated by seedling yield, early maturity, rate of crop formation, productivity and yield, as well as features of cultivation technology.

**Keywords:** New varieties, sprouts, early maturity, rate of crop accumulation, marketable yield, planting density.

### INTRODUCTION

The most important task of crop production is the introduction of food plants. Meeting the needs of the population of the republic occupies an important place tuber crop. Among the tubers, sweet potatoes or sweet potatoes (*Ipomea batatas* Lam.) are important. Sweet potato is widely distributed in China, Japan, India, the USA, Korea and European countries as a food, industrial and fodder crop. Sweet potato is one of the new food crops for the Zarafshan valley of Uzbekistan. Sweet potato belongs to the bindweed family (*Convolvulaceae* L.). This family includes over 400 species, of which one species *I.batatas* cultivates. Sweet potato is a perennial, tropical plant. The most favorable temperature for the growth and development of sweet potato is + 25 ... + 35 ° C. [1,2,3,6]. Therefore, in the dry, hot climate of Uzbekistan, sweet potato is cultivated as an annual crop - by seedling method [2,4].

It is a starchy sugar root crop. The main taste of sweet potato is its high sugar content, especially after long-term storage. The sugar content determines the characteristic sweetness of the sweet potato, which is why it acquired its name - sweet potato [1,5,6]. In tropical countries, the importance of sweet potato in national nutrition is great and is equated to potatoes. However, despite this, sweet potato cannot displace it, since in

terms of taste, most varieties of sweet potato have a different use in cooking. The aboveground part of the plant is a valuable food [5,6,7].

The purpose of our research is a comprehensive assessment of new sweet potato varieties in terms of early maturity, growth, development, intensive reproduction, crop formation, compactness of tubers in nests, productivity, yield, and keeping quality of tubers as well as the development of methods of agricultural technology for obtaining high yields for given conditions.

## MATERIALS AND METHODS

Field experiments were carried out in the conditions of old-irrigated meadow-serozem soils of the Raykhon farm, Tailyak district and in the field experiment station of Samarkand branch of Tashkent state agrarian university, Samarkand region. The mechanical composition of the soil is medium loamy with groundwater at a depth of 4-5m. The agrochemical parameters of the arable horizon are characterized by low content of humus (0.98-1.11%), nitrate nitrogen (8.41-10.67 mg/kg), mobile phosphorus (25.43-27.61 mg/kg), exchangeable potassium (189-216 mg/kg) of soil.

The object of the study was new varieties of sweet potato Khazina, standard, Sochakinur, Toyloki. Selected variety samples were studied at row spacings of 70 cm with a pattern of 70x25, 70x30 cm, and 70x35 cm. The area of the plot is 28 m<sup>2</sup>, the repetition is four times.

All records, observations, analyzes, care and harvesting were carried out according to generally accepted methods and agro-recommendations.

## RESULTS

The results obtained and their analysis. Seedling production technology and evaluation of sweet potato varieties by seedling yield. For this, 40 tubers were taken from each variety of sweet potato and planted on February 25 in a film greenhouse at a temperature of 15-18 ° C, planting to a depth of 2-3 cm, maintaining soil moisture at a level of 65-70%. After 7-10 days after planting, the buds began to germinate, and after 43-48 days, seedlings with a height of 12-15 cm are formed, which are ready for planting in the field.

After planting seedlings for 15-18 days in the field, planting care begins. Care includes - inter-row cultivation (cultivation), weeding, weed control, top dressing, and watering. Harvesting at the end of September, at the beginning of October with the help of potato diggers. Store sweet potato crops in storage or cellars.

**Table 1. Influence of cultivation of varieties of sweet potato with different methods of planting schemes on productivity**

№	Planting schemes, cm	Harvest from one bush, g	Yield, t/ha
<b>In Khazina variety</b>			
1	70x25	1044	43,6
2	70x30	950	36,8
3	70x35	902	32,5
<b>LSD<sub>05</sub>=1,9-2,4 t/ha</b>			
<b>In Sochakinur variety</b>			
4	70x25	1108	46,1
5	70x30	965	37,6
6	70x35	923	34,2
<b>LSD<sub>05</sub>=1,9-2,4 t/ha</b>			
<b>In Toyloki variety</b>			
7	70x25	1108	45,3
8	70x30	965	37,6
9	70x35	923	34,2
<b>LSD<sub>05</sub>=2,5-3,1 t/ha</b>			

The results of the research showed that the yield of seedlings from 1 seed tuber varied from 14.6 to 21.5 pcs. The highest yield of seedlings was observed in varieties Sochakinur (21.5 pcs.), Toyloki (16.9 pcs.) and the smallest yield of seedlings was in samples of Khazina, (14.6 pcs.).

Early maturity in the studied varieties, the growing season ranged from 121 to 140 days. The earliest maturing (121-129 days) varieties of sweet potato Sochakinur, Toyloki and for the standard variety Khazina, it was 140 days.

The yield of sweet potato varieties per hectare varied from 32.5 to 46.1 t/ha (Table 1). The highest yield (44.5-46.1 t/ha), of which an increase in yield of 9.4-11.0 t/ha or 126.8-131.3%, was obtained from the varieties Sochakinur, Toyloki. At the same time, these varieties had the highest yield of marketable tubers and amounted to 43.2-45.2 t/ha or 97.1-98.0% (Table 1).

When studying the planting of seedlings with a row spacing according to the scheme 70x25 and 70x30 in sweet potato varieties Sochakinur and Toyloki, it was found that the highest productivity (45.3-46.1 t/ha) obtained when planting seedlings according to the scheme 70x35 cm.

