

The Influence of Different Potato Sowing Schemes of the Variety "Belarusian Early" On the Ecology of Biomass Formation and Yield

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Abstract: In recent years, potato production in the Republic of Uzbekistan has increased 3-4 times, but despite this, the consumption of this product by the population is increasing, which is why prices in the markets are rising to a maximum. To solve the problem, vegetable farms need to direct their efforts to increase the acreage, and by improving the elements of cultivation technology to increase its yield, and the owners of household farms should be interested by the state to attract them to potato cultivation.

Keywords: variety, sowing scheme, elements of agricultural technology, household lands, seed material, average weight of potatoes. average weight per bush, yield

Introduction: Potatoes are a universal crop. They are used as a food product, as well as as a fodder and technical crop. The acreage in world agriculture takes pride of place after wheat, rice and corn. The biochemical composition of potatoes consists of 75% water and 25% dry matter. The dry matter contains 70-80% starch, 2-3% protein, 1% fiber, 0.2-0.3% fat, 1% sugar, 0.8-1.0% ash [4. p. 12].

Currently, there is no population left in the Republic who does not consume this product and for this reason it is called the second bread. According to medical data, if one person consumes 50.4

kg of potatoes per year, then there are those who exceed this indicator by more than 100 kg. [4. p. 25].

According to experts, if the owners of household farms cultivate potatoes on their plots, the funds spent on buying potatoes will be saved. Because in our soil and climatic conditions, you can get up to 250-300 kg of potatoes from one hundred square meters of land, and this will make it possible to meet the needs of 6-8 people, and can also be a great help in solving food security.

The purpose of the study: To study and substantiate the influence of various sowing schemes on the ecology of growth, development and yield of early-ripening potatoes of the Belorussky Early variety in the soil conditions of household farming in the Aral Sea region.

Place and methods of research: The research was conducted in 2022 in the Khojeli district in the village of Samankul in the household of Begimova Dilbar, who lives at 95 Tuba Street. The total area of the pilot site is 240m², of which the accounting area is 120m². The soil of the experimental site is old-cultivated meadow-alluvial, with a low level of organic substances, humus - 0.8-0.9%, groundwater at a depth of 1.8-2.5 m, the volume of soil on the treated surface is 1.30-1.31 g/cm³ in the lower layers 1.34-1.40 g/cm³, the soil is moderately saline

All the options in the experiment are arranged sequentially, in a single-tiered order. Phenological observations and biometric measurements were carried out according to the method (1971) of testing agricultural plant varieties of the State inspectorate of Uzbekistan, statistical analysis of yield indicators according to B.A.Dospekhov (1985).

The scheme of experience:

1. 60x25 cm control
2. 70x25cm
3. 80x25cm
4. 90x25cm

The results of the study: - According to the study, potato sowing in the plots was carried out based on the accumulation of the required soil temperature of 7-80 ° C at a depth of 10 cm. This level of accumulation occurred on March 17, 2022. According to the results of the study, it was found that before the flowering phase, the accumulation of plant biomass was largely determined depending on the density of crops per unit area. Experience has shown that a high level of thickening or sparseness relative to the control negatively affected the height of the plant, the number of shoots and the number of leaves forming.

Dynamics of plant biomass accumulation depending on the sowing scheme (measurements - before flowering) Table No. 1

№	Variant	Height of plants cm	Number of shoots (pieces)	Number of leaves (pieces)
I-repeat				
1	60x25 (control)	24	23	250
2	70x25 cm	29	36	340
3	80x25 cm	27	34	327
4	90x25 cm	25	25	272
II-repeat				
1	60x25 (control)	19	17	169
2	70x25 cm	20	19	243
3	80x25 cm	21	23	195
4	90x25 cm	23	16	177
III-repeat				

1	60x25 (control)	22	20	200
2	70x25 cm	23	25	261
3	80x25 cm	23	18	203
4	90x25 cm	22	17	196

As can be seen from the table, in all replications where sowing was carried out according to the 70x25cm scheme, the number of forming leaves exceeds the control and indicators in other variants by several times, and in the first and third replications they exceeded the number of shoots, but in the third replications they lagged in growth. If in the first repeat with the 70x25cm sowing scheme, the number of leaves exceeded the control by 90 pieces, the number of shoots was 13 pieces, and the height was 5 cm higher, then in the second repeat these figures were 74 pieces, 2 pieces, 1 cm, in the third repeat - 61 pieces, 5 pieces, 1cm. On average, the number of leaves under this sowing scheme exceeded the control by 26.6%, the number of shoots by 25%, and the height exceeded by 9.8%.

Based on this, it can be assumed that in the initial phase of potato development, a 70x25 cm seeding pattern was preferred for optimal growth, development and formation of biomass.

Average yield per bush and overall by varieties and replications Table No. 2

№	The scheme of the variant	Number of plants (pieces)	Weight of all tubers (kg)	Average weight of tubers (grams)	Average weight of one tuber (grams)	Yield (c/ha)
I-repeat						
1	60x25 (control)	5	2,620	524	38	199,1
2	70x25 cm	5	2,740	548	39	213,7
3	80x25 cm	5	2,600	520	39	202,9
4	90x25 cm	5	2,170	434	41	177,9
II-repeat						
5	60x25 (control)	5	2,150	430	37	159,1
6	70x25 cm	5	2,500	500	40	200,0
7	80x25 cm	5	2,300	460	35	161,0
8	90x25 cm	5	2,100	420	42	176,4
III-repeat						
9	60x25 (control)	5	2,180	436	35	152,6
10	70x25 cm	5	2,650	530	39	206,7
11	80x25 cm	5	2,600	520	38	197,6
12	90x25 cm	5	2,300	460	41	188,6

The determination of yield under different sowing schemes according to the data obtained as a result of the experiment was carried out according to the main indicators. According to the total weight of tubers from the selected 5 plants, the average weight was determined, and the average weight of one tuber was also taken into account. As can be seen from table 2, the total weight of tubers in the selected plant and its average weight are much higher in variants 2, 6 and 10, or in variants with a 70x25cm seeding scheme. If with this sowing scheme, in the first repeat, the total weight of tubers in 5 plants was 2 kg 740 grams and the average weight was 548 grams per plant, and in the second repeat - 2 kg 500 grams and 500 grams per plant, then in the third repeat this indicator was at the level of 2 kg 650 grams and 530 grams. from one plant. Based on this, the average weight of tubers obtained from one plant with a 70x25cm sowing scheme was 526 grams. Thus, the average potato yield when sown according to the 70x25cm scheme was 206.8 kg/ ha, which exceeds the control by 36.8 kg/ha. In terms of yield under the 70x25cm sowing scheme, it exceeds the yield under the 80x25cm sowing scheme by 19.6 kg/ha under the 90x25cm sowing scheme by 25.9 kg/ha.

Conclusion.

1. Based on the results of the study, it can be argued that the active formation of biomass in the early-maturing variety “Belarusian early” in the initial phase of its development significantly affected the area of nutrition of the plant, which is determined by the optimal sowing scheme
2. Experience has shown that a high level of thickening or sparseness of plants per unit area of nutrition, relative to control, negatively affected the height of the plant, the number of shoots and the number of leaves forming
3. According to the results of the study, it was found that sowing potatoes of the Belorussky early variety according to the 70x25 cm scheme is considered optimal for the soil conditions of the Aral Sea region. With this sowing scheme, a harvest of 213.7 kg/ha was obtained.

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