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RESEARCH AND ASSESSMENT OF THE NEED FOR NITROGEN FERTILIZERS OF THE EARLY MATURING RICE VARIETY "ALMAZ" DEPENDING ON THE PLANTING TIME

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ANNOTATION
The article discusses the study and assessment of the need for nitrogen fertilizers in the early ripening rice variety "Almaz" depending on the planting date. During the study, the agrophysical properties of the soil down to the groundwater level were studied, and the genetic layer of the soil was also studied. In an experiment conducted in a greenhouse, 3 different doses of mineral fertilizers were used for the Almaz rice variety.
KEY WORDS: *sector, period, planting, nitrogen, phosphorus, experience, greenhouse, volume, products.*

INTRODUCTION

The role and importance of the agricultural sector in ensuring food security of the population on a global scale is increasing every day. In particular, in our country there is an urgent issue of using available resources and opportunities to guarantee the supply of agricultural products to the population, further increasing productivity and interest, introducing scientific achievements and modern approaches to the field. To do this, in the Decree of the President of the Republic of Uzbekistan, dated 02.02.2021 No. PP-4973 "On measures for the further development of rice growing" in 2021, at least 20% of the total area of rice fields must be planted with seedlings, 50% of the land must be leveled with laser technology, 30% must be sowed with modern seeders, and in 2022 it is planned to further increase these figures.

Today, 100-110 thousand hectares of rice are sown in our country, the average yield is 35-38 centners per hectare, and the total yield is 395 thousand tons. This quantity can only minimally satisfy the demand for rice, which is one of the staple foods of the growing population of our country.

According to official data, about 55 thousand tons of rice products are imported annually to fully satisfy the population's demand. In order to obtain a high yield of rice in our republic, meet the population's demand for rice products, as well as save foreign currency by reducing the volume of rice imports, breeding high-yielding varieties that are resistant to soil and climatic conditions, having grain quality indicators, the development and implementation of highly efficient and resource-saving agricultural technologies in their cultivation is one of the most important tasks

MATERIAL AND METHODOLOGY

To solve the above problems, in 2022-2023, in the farm named after Omar Allamuratov Nukus district of the Republic of Karakalpakstan, experiments were conducted on fertilizing the Almaz variety as a standard rice variety. Since the winter of 2022, the experiment has been carried out in the greenhouse of the Institute of Agriculture and Agricultural Technologies of Karakalpakstan. To do this, soil from the farm was brought to the greenhouse and adapted for the experiment. Before the experiment, the agrochemical and agrophysical properties of the soils were tested in laboratory conditions.

RESEARCH RESULTS

During the study, in order to study the agrophysical properties of the soil, the soil was excavated to the groundwater level, its genetic layers were studied and samples were taken:
- 0-30 cm - the color changes from light gray to dark gray, traces of worms and insects are found, plant remains and roots are present, the top layer is dry, small particles of salt, light sand are found.
- a subsoil layer 30-48 cm thick, dark gray in color, containing small particles of salt, traces of roots and insects, which pass into the next layer of medium sandy composition.
- 48-80 cm - average sand moisture, small remains of roots, a reddish-brown

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layer, rare plant remains and traces of insects.

Table 1
Mechanical composition of the soil of the experimental plot, %

Cross section of soil №	Soil layer, cm	Soil particles, mm								Name according to the mechanical composition of the soil
		>0,25-	0,25-0,10	0,10-0,05	0,05-0,01	0,01-0,005	0,005-0,001	<0,001	<0,01	
5	0-30	1,06	3,26	24,60	36,66	10,11	13,86	10,45	34,42	Medium sandy
	30-48	1,81	2,57	26,32	21,73	20,15	15,70	11,72	47,57	Heavy sandy
	48-80	1,07	1,72	19,91	40,49	10,81	14,31	11,69	36,81	Medium sandy
	78-120	1,76	1,30	11,00	52,10	7,90	18,40	9,30	45,60	Heavy sandy
	120-205	1,65	1,10	24,25	23,31	20,18	21,04	8,47	49,69	Heavy sandy
	205-245	1,93	1,00	9,70	47,00	9,80	12,70	19,80	42,30	Medium sandy

The mechanical composition of this soil is layered: the upper layer is medium loam; the lower layer is heavy loam and sandy loam (Table 1).

Table 1
Physical properties of soils in the experimental plot

Soil layer, cm	Volume mass, g/cm^3	Relative weight g/cm^3	Porosity, %
0-10	1,35	2,65	48,7
10-20	1,34	2,67	46,4
20-30	1,35	2,67	46,7
30-40	1,35	2,68	47,2
40-50	1,33	2,66	48,1
50-60	1,31	2,67	45,4
60-70	1,33	2,65	47,6
70-80	1,38	2,60	47,5
80-90	1,34	2,60	46,4
90-100	1,33	2,63	46,0
0-30	1,35	2,66	47,3
0-70	1,34	2,66	47,2
0-100	1,34	2,65	47,0

The specific gravity of meadow-alluvial soils is 2.66 g/cm^3 in the arable soil layer in spring, on average 2.65 g/cm^3 per 0-100 cm, volumetric mass per 0-30 cm 1.35, 1 per 0-100 cm. 70 cm. It was equal to 1.34 g/cm^3 at 34 and 0-100 cm, and the porosity at 0-100 cm was 47.0% (Table 2).

In meadow-alluvial soils, the humus content (0-30 cm) was 0.5-0.6%, total nitrogen 0.040-0.050%, total phosphorus 0.160-0.170%, total potassium content 1.80-1.84% (Table .3).

Table 3
Agrochemical properties of meadow-alluvial soil

Soil layers, cm	Humus	Gross, %			Active, mg/kg	
		Nitrogen	Phosphorus	Potassium	P_2O_5	K_2O
0-10	0,56	0,051	0,174	1,85	20,07	180,1
10-20	0,51	0,050	0,171	1,85	17,60	175,4
20-30	0,53	0,050	0,172	1,82	13,20	156,6
30-40	0,50	0,043	0,162	1,80	10,06	133,4
40-50	0,55	0,030	0,160	1,78	8,36	109,4
0-30	0,53	0,050	0,170	1,84	16,96	170,70
0-50	0,53	0,040	0,170	1,82	13,86	150,98

In an experiment conducted under Greenhouse conditions, 3 different doses of mineral fertilizers were used for the Almaz rice variety.

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Among nitrogen fertilizers, carbamide (urea) fertilizer was used. When tilling the soil, 35% of the annual norm of nitrogen fertilizers was applied, at the beginning of tillering - 35%, at full tillering - 30%. Due to the salinity of our soils, the application of phosphorus fertilizers has been increased by 2-3.5 times. From phosphorus fertilizers, granular amphos was used, containing 46-60% phosphorus and 11-12% nitrogen. Before planting, 100% of the annual phosphorus norm was added to the soil. Due to the fact that the amount of potassium in the arable layers of our experimental plot did not reach 200 mg/kg, 50% of the annual amount of potassium fertilizers was applied before planting, and the rest during the period of full flowering.

Table 4
Application of mineral fertilizers for the Almaz rice variety in a greenhouse

Option	Variety	N	P	K	Ear length	Amount of Grain Per Ear	Weight of grain in an Ear	Weight 100 grains	Real productivity ts.
3	Almaz	90	90	120	23,2	202	3,0	32,8	65,4
5	Almaz	120	90	120	24,0	208	3,2	33,3	72,7
7	Almaz	150	90	120	23,8	208	3,0	33,0	72,4
9	Almaz	180	90	120	24,1	212	3,0	33,0	72,6

CONCLUSIONS

In our experiments, when using rice varieties in the ratio H120P90K120, the highest indicators of ear length, grain quantity per ear, grain weight per ear, 100-grain weight and yield were observed in the Almaz rice variety.

LITERATURE

1. *Chen Xiaorong, Pan Xiaohua the influence of different methods of applying nitrogen fertilizers and different plant densities on rice yield when planting large seedlings grown in polymer disks Jiangxinongyedaxuexuebao N 3, 2000, v. 22, P. 322-326 b.*
2. *Nurmatov Sh, Avliyokulov A va boshqalar "Dala tazhribalarni ўtkazish uslublari." Tashkent, 2007.1*
3. *Egamnazarov A. Sholi suvni khush kuradi. // Journal "Ozbekiston qishloq huzhaligi". Tashkent, 2005. No. 7.17 b. 5. Ergashev. M. A. Effect of transplanting Time on the Growth and Yield of Early and Late Maturing Rice Varieties. Report on Experiments in Rice Research Techniques Course. Tsukuba International Center, JICA. 2005. Vol. 9.: P-133-153.*
4. *Mambetnazarov B., Uralbaeva N., Kuanyshbaeva Sh. Korakalpogiston republicasi ўtloki-alluvial tuproklarining agrophysics khossalarini ўrganish. // J. Uzbekiston milliy university khabarlari. 2021 3/1/1. B. 72-76.*