



EFFECT OF LOCAL POTASSIUM FERTILIZER ON WINTER WHEAT UNDER IRRIGATED TYPICAL GRAY SOIL CONDITIONS

Yuldasheva Malika Djurayevna

*Assistant of Tashkent State Agrarian University
malika@mail.ru*

Bekmratorov Satlimurat Ayitmurat uli

PhD student of Tashkent State Agrarian University SatlimuratBekmratorov@gmail.com

Boynazarov is the son of Barat Isoq,

*Master of Tashkent State Agrarian University
boynazarov@gmail.com*

Rashidov Shakhzod Dilshod's son

*is a student of Tashkent State Agrarian University
rashidov20@gmail.ru*

Article history:	Abstract:
Received: 22 th February 2023 Accepted: 22 th March 2023 Published: 26 th March 2023	The grain industry, which is considered one of the main branches of agriculture in our country, is rapidly developing. Due to its favorable soil climate and natural resources, the agriculture of Uzbekistan has all the necessary conditions for the rapid development of grain production. It is necessary to determine the time of planting, the rate, the requirement for mineral and local fertilizers and take care accordingly. Determining the norm of planting winter wheat and the requirement for mineral fertilizers in the conditions of typical gray soils of Tashkent region is an urgent issue at the same time. At present, it is necessary to strengthen selection work to create new intensive type local varieties. It is necessary to achieve the production yield of wheat varieties at least 70-80 s/ha and more and to ensure that they give high-quality products.

Keywords: Wheat crops, soil fertility, rate and duration of local potassium and mineral fertilizers, efficiency.

Currently, in our republic, within the framework of state programs for improving the reclamation condition of irrigated land areas, maintaining and increasing their productivity, and their effective use, large-scale reclamation activities and scientific-research works are being carried out, and certain results are being achieved. In the 2017-2021 action strategy for the development of the Republic of Uzbekistan, it is stated that "... further improvement of the land reclamation condition of irrigated lands, development of the network of reclamation and irrigation facilities, intensive methods of agricultural production, first of all, the important tasks of introducing modern water and resource-saving agrotechnologies" have been defined. In this regard, it is important to determine the properties of soils in our republic, to eliminate existing degradation processes, to maintain and restore their fertility, to prevent erosion, dehumification processes, and to determine the mechanisms and laws of humus formation depending on soil fertility.

This is the relevance of the topic. The grain industry, which is considered one of the main branches of agriculture in our country, is rapidly developing. Due to its favorable soil climate and natural resources, the agriculture of Uzbekistan has all the conditions for the rapid development of grain production. In order to achieve grain independence in Uzbekistan, to fully satisfy the population's need for food products, including grain, and with the transition of Uzbekistan to a market economy, the increasing demand for grain products is irrigated up to the present period. 1.1 mln. leads to more than one hectare. Our bright future tomorrow, the prosperity and prosperity of our table, in a broad sense, the further development of our Republic depends on the abundance of our food and our total material wealth.

In the development of grain production, the scientifically based technology of grain cultivation is of great importance. Numerous scientific studies have shown that there are opportunities to increase the productivity of the irrigated fields of our country to an average of 55-60 centners. It is one of the possibilities that we envisage the full implementation of intensive technology in the rational use of soil, water and chemical agents suitable for various soil-climatic conditions. At present, it is necessary to strengthen selection work to create new intensive type local varieties. It is necessary to achieve the production yield of wheat varieties at least 70-80 s/ha and more and to ensure that they give high-quality products.

Lavronov. G. A [1969. 336], although one or another planting rate in arid regions is determined by soil moisture, it actually depends on a number of conditions. For example, the degree of weeding of the field, soil

fertility, the degree of slope of the field and the direction of this slope, the method of sowing, the quality of seeds are among these.

Even today, the agrotechnical measures used in agriculture ensure that they correspond to the level of scientific and technical development. The main requirement for the planting rate is to provide a certain area of land with an optimal seedling thickness and productive stems.

Tojiev.N Khushmanov.O [2000. pp. 26-28] in his experiments, he stated that in the Kashkadarya region, 150, 200, 250 kg/ha of sowing seeds, 100, 150, 200 kg/ha of nitrogen from mineral fertilizers, 70, 105, 140 and 50, 75, 100 kg/ha of potassium were studied. An increase in the rate of seeds and a decrease in fertilizers led to a decrease in the number and weight of grains in an ear and a decrease in productivity, while an increase in the amount of fertilizers led to an increase in the number, weight and yield of grains.

Khalilov. M. Bobomirzaev. G. According to Daminov.S [2000. 35-37 pp.] in the researches, it is very useful to plant Aleksandrovka, Bakht, Makuz-3, Istiklal varieties of durum wheat, which are suitable for making pasta, vermicelli, noodles, and produce high-quality grains in Surkhandarya and Kashkadarya regions, they are 60- He notes that they give a grain yield of 70 centners. The authors consider the optimal planting rate to be 4 million per hectare. Found that the grain is a fertile seed. They noted that Bakht, Aleksandrovka varieties yielded 54.8 and 59.1 centners per hectare.

As it can be seen from the results of a large number of studies conducted above, all the agrotechnical measures necessary for its cultivation have a certain effect on the correct determination of the planting rate of winter wheat, or are dependent on these measures. will depend. In particular, soil-climatic conditions, geographical position and location of the place, seed quality, soil type, variety, planting period, all these determine the rate of planting winter wheat.

Wheat is one of the most demanding crops among grain crops regardless of soil conditions.

Application of fertilizers based on scientifically based recommendations is one of the main factors in growing high grain yield from grain crops. Due to the full application of fertilizers, the yield of spring wheat increases by 2-3 times, and the yield of autumn wheat increases by 15-20 s/ha in irrigated lands. The yield of winter wheat is on average 6.2 kg per kg of active substance of NRK [16].

Among other mineral fertilizers, phosphorus fertilizers also play a big role in the normal growth and development of plants. According to the data, the application of phosphorus fertilizers to wheat began before the application of nitrogen and potassium fertilizers.

According to numerous data, wheat roots absorb orthophosphorus and pyrophosphorus salts.

It has been proved by many scientists that the use of potassium fertilizers in wheat is the reason for its high yield and quality of grain.

The effectiveness of mineral fertilizer application rates and periods depends on soil and climate conditions, the characteristics of varieties, the degree of water supply of wheat and other factors. Kolomeichenko. V.V. According to [2002-24-25], phosphorus fertilizers have a positive effect on the formation of the root system of winter wheat and on all physiological processes in the plant. Sufficient feeding with phosphorus improves wintering of seedlings, resistance to diseases and pests increases dramatically. 5-6 million per hectare for the cultivation of high-quality grain crops from durum wheat varieties on irrigated lands. it is recommended to give germinating seeds in the first half of October, mineral fertilizers from N₁₂₀ R₉₀ K₆₀ kg per hectare.

Mineral fertilizers are of great importance in increasing the productivity of agricultural crops. Mineral fertilizers, in turn, affect soil fertility.

RESULTS. The number of bush of winter wheat and its level of wintering. It is known that one of the factors determining the weight of the crop in any type of crop is the seedling thickness (the number of stems). Crops with a normal seedling thickness have higher productivity. Biologically, the varieties of wheat studied in the experiment we are analyzing are autumn. That is why it is necessary to pay attention to the planting period, rate and depth in order to maintain the thickness of seedlings. Basically, before entering the village of wheat, it is necessary to achieve the formation of a joint in it. During the growing season, when the crowding is good, the surface of the leaves produces a large amount of organic matter and side stems are formed. 30-50% of the grain yield, and winter wheat frost resistance depends on the conditions and age of the growing season.

(Table 3.1)

The number of bush and the degree of wintering in winter wheat

№	Varieties	Planting standard million units/ha	Rate of mineral fertilizers, kg/ha	The number of bushes at the beginning of vegetation, 1m ² /pc	The number of bushes at the end of vegetation, 1m ² /pc	Dead sprouts number, %
1.	Sanzar-6	4,0	N ₁₂₀ R ₉₀ K ₆₀	296,0	254,6	13,9
2.			N ₁₈₀ R ₁₂₀ K ₉₀	295,0	268,4	8,9

3.		5,0	N ₁₂₀ R ₉₀ K ₆₀	388,5	315,8	18,8
4.			N ₁₈₀ R ₁₂₀ K ₉₀	394,1	324,9	17,8
5.	Polovchanka	4,0	N ₁₂₀ R ₉₀ K ₆₀	306,4	276,3	11,1
6.			N ₁₈₀ R ₁₂₀ K ₉₀	299,2	275,6	8,1
7.		5,0	N ₁₂₀ R ₉₀ K ₆₀	405,3	359,9	14,3
8.			N ₁₈₀ R ₁₂₀ K ₉₀	409,3	369,3	10,5
9.	Demetra	4,0	N ₁₂₀ R ₉₀ K ₆₀	296,4	273,1	8,0
10.			N ₁₈₀ R ₁₂₀ K ₉₀	294,9	274,5	7,0
11.		5,0	N ₁₂₀ R ₉₀ K ₆₀	395,1	357,0	9,8
12.	N ₁₈₀ R ₁₂₀ K ₉₀		398,8	370,3	7,2	

For example, at the end of the growing season, compared to books, the rate of loss of seedlings (number of stems) in the variety "Demetra" was 7.0-9.8% on average. So, among the varieties of winter wheat, the variety "Demetra" showed a high level of wintering and resistance to cold.

The impact of planting standards on the number of wheat varieties and the degree of wintering was determined. When planting 4.0 million seeds per hectare and applying fertilizers at the rate of N₁₂₀R₉₀K₆₀ kg/ha ("Demetra" variety), the bush loss at the end of the vegetation period was 8.0%, per hectare. When 5.0 million seeds were sown and the rate of these fertilizers was applied, it was 9.8% (options 9, 11), or these indicators were corresponding to the variety "Sanzar-6". It was 13.9-18.8% (1, 3 variants), 11.1-14.3% (5, 7 variants) in the "Polovchanka" variety. So, as the rate of planting in winter wheat increases, the rate of plant death also increases. It is known that the role of mineral fertilizers in plant development and productivity is incomparable.

According to the data obtained on the effect of mineral fertilizers, the high rate of mineral fertilizers ensured a relatively high number of plants in the field.

Based on the obtained data, it can be concluded that among winter wheat varieties, the loss of the number of stalks is relatively small in the "Demetra" variety. Also, increasing the rate of planting leads to a small loss of the number of bushes.

SUMMARY

Based on the results of the studied analysis, the following conclusions can be drawn: Among the varieties of winter wheat, the highest indicator of winter resistance was observed in the "Demetra" variety, the loss of the number of stems during the winter period was 7.0-9.8%. Also, 4 million per hectare of winter wheat. It was observed that the use of mineral fertilizers at the rate of N₁₈₀R₁₂₀K₉₀ kg/ha had a positive effect on the level of wintering of winter wheat. Determining the standard of wheat planting at the rate of 5.0 million pieces per hectare increases the number of stems in the plant by 60-80 m²/piece, and the number of productive stems by 8.2-19.9 m²/piece. provided that.

It was observed that setting the rate of mineral fertilizers at the rate of N₁₈₀R₁₂₀K₉₀kg/ha in winter wheat care resulted in higher plant growth and development in all varieties of winter wheat. Determining the norm of mineral fertilizers at the rate of N₁₈₀R₁₂₀K₉₀kg/ha has a positive effect on the agrochemical parameters of the soil, including the amount of nitrate nitrogen, mobile phosphorus and exchangeable potassium, the preservation of these nutrients in the soil and the good growth of plants. made it possible to grow and high grain yield was observed.

REFERENCES

1. Lavronov G.A. Pshenitsa v Uzbekistane. // T: SHark. 1969. 336 s
2. Tojiev M., Xushmonov O. Kuzgi bug'doy hosildorligini urug' ekish me'yorlari va o'g'it miqdoriga bog'liqligi. // J. O'zbekiston qishloq xo'jaligi. №3. 2000. 26-28 bet.
3. Xalilov N.X., Bobomirzaev G., Daminov S. Kuzgi bug'doy etishtirish texnologiyasini takomillashtirish shartlari. // J. O'zbekiston q/x jurnali. №5-6. 2000. 35-37 bet.
4. Kolomeychenko V.V. Osobennosti zasorennosti posevov ozimoy rshenitsy pod vliyaniem fosforных udobreniy //j. "Zemledelie" 2002, //№6, s. 24-25
5. Azizov B., Usmonov I., Haydarov B., «Qahrabo» qattiq bug'doy navi: ko'chat qalinligi va ozikdantirish. // J. AGRO ILM, nishona, 2007, 14 bet.