AJRCS GLOBAL RESEARCH NETWORK

Intersections of Faith and Culture: AMERICAN Journal of Religious and Cultural Studies
Volume 01, Issue 09, 2023 ISSN (E): 2993-2599

Effect of the Norms of Mineral Fertilizer Applied to the Growth-Development and Yield of Sunflower Planted After Autumn Wheat

L. A. Mirzaev
Research Institute of agrotechnologies of cotton selection, seeding and cultivation, Tashkent, Uzbekistan
A. N. Zaitsev, O. L. Orifjonov, Sh. O. Oribjonov
A.A.Irkutsk agrarian university named after Ejevskogo, Irkutsk, Russia

Abstract: The article presents information on the Republic of Karakalpakstan's grassland-alluvial soils, and the impact of mineral fertilizer standards used in the short povernut rotation system on the accumulation of growth and sunflower productivity.

Keywords: hectares, cultivated oil, soil-climatic conditions.

Currently, in order to ensure the continuous demand of the population of the Republic for vegetable oil and maintain the stability of the narhs of this product in domestic markets, special attention is paid to expanding the areas of oil crops based on the recommendations of scientists and obtaining higher yields from them, based on soil-climatic conditions.

In particular, in the current year, oil crops were planted on 225 thousand hectares under the Republic, of which 160 thousand hectares were planted on the main, 30 thousand hectares on tulips and 35 thousand hectares on repeated plots.

Of these cultivated oil crops, 422 thousand tons, of which 245 thousand tons of soybeans, 111 thousand tons of sunflowers, 41 thousand tons of Sesame, 14 thousand tons of mahsar and 11 thousand tons of flax are expected to be the basis for the production of 120 thousand tons of vegetable oil.

From this goal, Research has been carried out to study the effect of applying mineral fertilizers on the sunflower crop after autumn wheat in the conditions of the Republic of Karakalpakstan on the growth-development and productivity of the plant.

Crop growth-development and yield are inextricably linked to all factors, in particular soil-climatic conditions, variety, duration of the growing season, agrotechnical measures used in crops and other indicators [1; 2; 3; 4; 5; 6].

The soil of the experimental field is low in nutrients, with humus in the plowing (0-30 cm) layer at 0.517%, gross nitrogen at 0.047, total phosphorus and potassium at 0.047 and 0.042 percent respectively, N-NN_4-10.7; n-No_3-7.1; P2O5 -25 and K_2O-120 mg/kg.

In the experiment, Fertilizers of urea (46% N), suprefos (N-10%, P2O5-22-23%) and potassium chloride (60% K_2O) were applied.

Conducting experiments, phenological observations, soil and plant sampling were carried out on the basis of the manuals "metodika polevix opitov" (Dospexov, 1985), "metodika Gosudarstvennogo sorta ispitania selskoxozyaystvennix Kultur" (1964), "field experiment methods" (2007).

The quantities of the total and motile types of humus, NPK in soil samples were carried out according to the methodologies "metodi agroximicheskix, agrofizicheskix i microbiologicheskix issledovaniy v polivnix khlopkovix rayonax" (1963) and "metodi agroximicheskix analizov pochv i rasteniy Sredney Azii" (1977).

In studies, a sunflower crop was planted as a repeat crop after autumn wheat, and the effect of various norms of mineral fertilizers applied in it on the growth and yield was studied.

In studies, sunflower, grown as a repeat crop after autumn wheat, used mineral fertilizer in the norms N0P0K0 (1 var), n120r80k60 (2 var) and n180r120k90 (3 var) kg/ha. As the basis (background) for these fertilizer options, three different mineral fertilizer norms were obtained, which were applied in autumn wheat (Table 1).

During the first 4-5 leaf periods of the development of the sunflower crop, planted as a repeat crop after autumn wheat, there was no sharp difference between the options for growth and development of the plant (the plant height is 18.1-19.6 cm, the number of leaves is 4.1-5.0 PCs.).

Phenological observations at the end of the operational period of sunflower Development show that on the basis of the application of fertilizer to $N_{120}P_{80}K_{60}$ kg/in autumn wheat, in the control option of sunflower without fertilizer ($N_0R_0K_0$), the plant height was 129.8 cm, the number of leaves was 16.4 pieces, while when applied to mineral fertilizer norm $N_{120}P_{80}K_{60}$ kg/, these indicators are proportional to 143.4 cm in the variant applied to $N_{180}P_{120}K_{90}$ kg/, it was 151.0 cm and 18.1 grains.

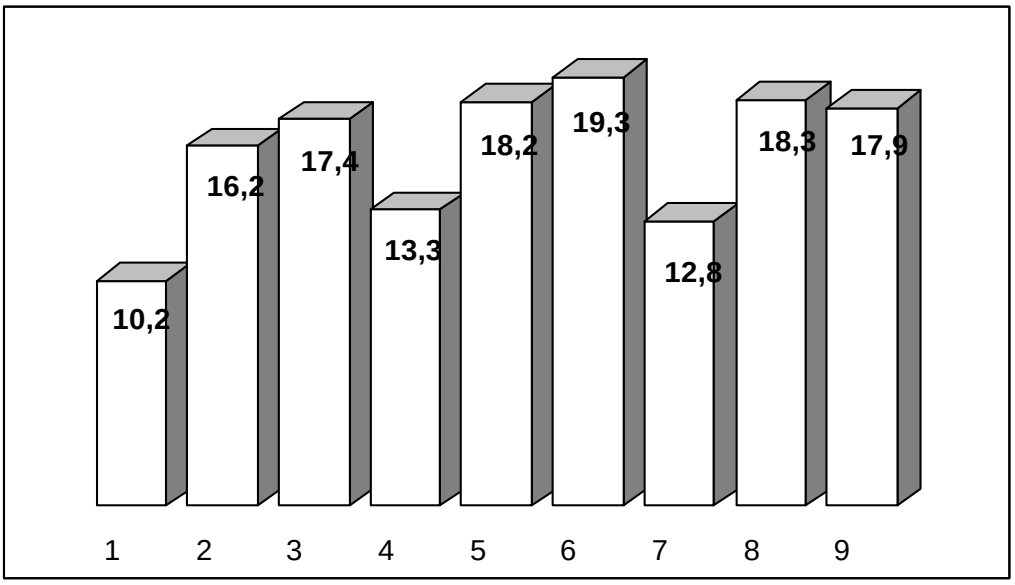
On the basis of application to $N_{180}P_{120}K_{90}$ kg/in autumn wheat, the repeated crop in the fertilizer-free ($N_0P_0K_0$) variant of sunflower is 131.2 cm plant height, the number of leaves is 15.8 pieces, and these indicators are 145.7 cm and 16.9 pieces when applied to mineral fertilizers $N_{120}P_{80}K_{60}$ kg/, and 153.8 $_{CM}$ and 17.8 when applied to $N_{180}P_{120}K_{90}$ kg/ha formed the Navy.

Table 1. Influence of mineral fertilizer norms on the growth and development of sunflower (2015)

Option number (autumn wheat)	Mineral fertilizers applied in autumn wheat, kg / ga	Option number (kunga Bokar).	Mineral fertilizers applied in sunflower, kg / ga	Crop 4-5 leaf period		Basket ending period		Амал даври охири	
				Tumor height, cm	Number of leaves, pieces	Tumor height, cm	Number of leaves, pieces	Tumor heigh, cm	Leaf number pieces
1	$N_{120}P_{80}K_{60}$	1	$N_0P_0K_0$	18,5	4,3	105,7	14,5	129,8	16,4
		2	$N_{120}P_{80}K_{60}$	18,2	4,3	108,5	14,5	143,4	17,4
		3	$N_{180}P_{120}K_{90}$	19,3	4,5	110,1	15,5	151,0	18,1
2	$N_{180}P_{120}K_{90}$	4	$N_0P_0K_0$	18,4	4,4	105,7	14,8	131,2	15,8
		5	$N_{120}P_{80}K_{60}$	19,0	4,8	108,5	15,3	145,7	16,9
		6	$N_{180}P_{120}K_{90}$	19,2	4,8	113,6	15,2	153,8	17,8
3	$N_{240}P_{160}K_{120}$	7	$N_0P_0K_0$	18,1	4,1	108,7	14,7	138,7	16,2
		8	$N_{120}P_{80}K_{60}$	19,1	4,9	111,1	14,3	148,7	16,1
		9	$N_{180}P_{120}K_{90}$	19,6	5,0	113,9	14,5	155,2	17,4

In autumn wheat, the growth of sunflower grown on the basis that mineral fertilizer was applied at the highest norm ($N_{240}P_{160}K_{120}$ kg/ha) was as follows: in the fertilizer-free option, the plant height is 138.7 cm and the number of leaves per plant is 16.2 pieces; when mineral fertilizer is applied to sunflower $N_{120}P_{80}K_{60}$ kg/ha, the plant height is 148.7 cm and 16.1 pieces, mineral fertilizer $P_{180}P_{120}K_{90}$ kg/ha when applied, it measured 155.2 cm and 17.4 pieces.

These indicators also had an effect on the yield of sunflowers planted as a repeat crop (draw 1).



Draw 1. Grain yield of sunflower planted after autumn wheat, s / ga

HCP_{05}= 1,86 (2015 year)

It is worth mentioning on the basis of the data obtained that the effect of mineral fertilizers applied in sunflower, planted after the background of 3 varieties of mineral fertilizers applied in autumn wheat and the non-fertilizer option, on grain yields was significant.

That is, in options 1, 4 and 7, in which no fertilizer was applied, the grain yield of sunflower was 10.2; 13.3 and 12.8 s/ga, respectively, according to the experimental options.

The highest grain yield was obtained in 6 and 8 variants of the experiment (19.3 and 18.3 s/ga), that is, in the autumn wheat, the norm of mineral fertilizers was obtained in the options fed at the norms $N_{180}P_{120}K_{90}$ and $N_{240}P_{160}K_{120}$ kg/ga after application of sunflower to $N_{180}P_{120}K_{90}$ and $N_{120}P_{80}K_{60}$ kg/ga.

The highest grain yield was obtained in 6 and 8 variants of the experiment (19.3 and 18.3 ts/ha), that is, in the autumn wheat, the norm of mineral fertilizers was obtained in the options fed at the norms N180R120K90 and n240r160k120 kg/ha after application of sunflower to n180r120k90 and n120r80k60 kg/ha.

In this, the highest (19.3 and 18.3 s/ga) yield was observed in autumn wheat when mineral fertilizers $N_{180}P_{120}K_{90}$ and $N_{240}P_{160}K_{120}$ kg/ga were fed sunflower in moderation to $N_{180}P_{120}K_{90}$ and $N_{120}P_{80}K_{60}$ kg/ga.

REFERENCES

1. Белоусов М.А. Физиологические основы корневого питания хлопчатника – Т. “Фан”, 1975, с. 58-133
2. Протасов П.В. Азот в хлопководстве Средней Азии. Ташкент, МСХ УзССР, 1961, с.164.
3. Смирнов П.М., Муравин Э.А. Агрохимия, М., Колос, 1984. с.304
4. Сулейманов С.Р. Биологические препараты в технологии возделывания подсолнечника на маслосемена в условиях Республики Татарстан, Автореферат диссертации на соискание ученой степени кандидата сельскохозяйственных наук. Казан, 2015, с. 19.
5. Ташкузиев М.М., Каримбердиева А.А., Бердиев Т.Т., Очилов С.К. Влияние новых форм органических и бактериально обработанных удобрений на рост, развитие и

урожайность хлопчатника. Ж.Агрокимё химоя ва ўсимликлар карантини. 2017 й., №2, 40-42-бетлар.

6. Фомичев Г.А. Корсаков К.В., Пронько В.В. Влияние минеральных удобрений и регуляторов роста на потребление элементов питания и урожай подсолнечника на южных черноземах Поволжья. Вестник Саратовского госагроуниверситета им. Н.И. Вавилова, – 2011, – №5, – С. 37–39.