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Resourse-saving technology

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In agriculture, special attention should be paid to reducing the cost of the product using innovative technologies that minimize the cost of fertilizers, fuels, and lubricants, mechanization services for the placement of fertile varieties in conditions of appropriate soil and climate based on the integration of science, education and practice.

INTRODUCTION

The aim of workis to develop a technology for the use of non-conventional agro-ore material (bentonite clay) to save irrigation water and mineral fertilizers depending on an irrigation scheduling in the cultivation of early, highly-productive and high-quality yields of upland cotton varieties in conditions of the light sierozem soils of the Andijan province.

MATERIALS

The object of study is light sierozem soils, upland cotton varieties “Andijan-37” and “Sultan”, bentonite clay.

Scientific novelty of researchis the following:

for the first time in conditions of the light sierozem soils of the Andijan province, a resource-saving agrotechnology for the use of unconventionfl agro-ore as an addition to mineral fertilizers before soil plowing at a rate of 6000 kg ha^{-1} and during the budding phase of cotton varieties at a rate of 750 kg ha^{-1} has been developed;

optimal water consumption has been identified, up to 25% reduction of the use of mineral fertilizers in the cultivation of cotton varieties achieved due to the use of non-traditional agro-ore (bentonute), wich resulted in increase of soil water-holding capacity;

the impact of the effective use of non-traditional agro-ore as resource-saving agrotechnologies in the cultivation of cotton varieties “Andijan-37” and “Sultan” on their irrigation scheduling, fertilization and on growth, development and yield has been determined;

the effect of using non-traditional agro-ore as supplements to mineral fertilizers once everu three years before soil fertility, agrophysical, agrochemical properties as well as on the 10-15% increase of economic efficiency of resource-saving technology has been determined.

It is very important to make right choice of cotton varieties reliable to the local climate, fast ripen, highly productive, stable to diseases and vermins; to locate them reliable to the zones, to seed cotton in double raws, to till the soil and get ready for seeding, thin cutting, applying growth controlling minerals; cutting cotton plant top, fertilizing, eliminating qualified effective agritechnical processes on time.

RESULTS

Growth conferming minerals effect elevating of plants sprouting capacity,their stability to drought and activity, diseases and vermins of agricultural crops, their ripening speedelevating (Kalinin, Meregenskiy).

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There exist lots of factors to increase crop productivity but the most decisive part havemeliorative state of soil, fertilizer, crop variety and crop rotation. Without firtilizing cotton productivity can not run over 12-14 centner per hectare, when fertilized with mineral it can reach 20-30 centners and with organic fertilizers 30-33, with crop rotation it reaches 35-40 centners /hec. (J.Akhmedov, K. Mirzajonov, 2007). Having studied the scientific conclusions of a number of scientists we experimentedSulton and Andijan-37 cotton varieties in Asaka, Izboskan districts of Andijan region and in Andijan Agriculture Institute experimental campus in 2011-2014.We studied growth, vegetation and agritechnical processes and those varieties.

Studying were carried out in the field conditions of Uz.S.V.I. (Uzbekistan scientific verfiection)based on “Methods of carrying out field experiments” (2007). Field experiments were located out at 12varients, general area of 200 m^2 , 100m^2, in total; 8 rows and 3 repetitions.

In the experiment Andijan-37 and Sultan cotton varieties were sowed at scheme 90x15-1-2. The variants were cultivated in LFCD (Limited field contained dampness) soilumidityduring growing period 60-70-60 % and 70-70-60% in two different watering regimes, two seedlings density 100-110 and 120-130 thousand per/hec. , two kinds of fertilizers NPK 150-105-75 and NPK 200-140-100 kg/hec. There 70% of a year limit of phosphorous and 50% of potassium minerals were used befor autumn tillage, the rest norn is used during germination of 2-3 real leaves budding and flowering of cotton plant. In both watering regimes with NPK 150-105-75 kg/hec. Variants cotton plant seeds were capsuled with bentonite powder , sowed and before budding the crop was fed with bentonite powder at 750 kg/hec. repeatedly. The number of branches of the plant, buds and their forming, sedling density (thickness), norms of fertilizing, were investigated according to watering regime and agricultural minerals.

Before watering made the most realiable condition for growth and vegetation of plants aqnd for the plants of other soil condition concerning to 70-70-60 percent watering regime variants and agricultural mineral powder used variants soil humidity.

PRIMARY CONCLUSIONS

-limited field humidity capacityof the field experimental soil (LFCD) in 0-100 sm layer made 24 % and mass uright made 1,35 gr sm^3 a little superiority of Sultan variety vegetation at the beginning of progressing period over Andijan-37 and capsule with bentonite was noticed;

-Cotton plant varieties were fertilized with NPK 150-105-75 kg/hec. mineral at 750 kg mixed with bentonite, in two different in comparison to varientsLFCD 60-70-60% and 70-70-60% in both soil humidity variants watered with bentonite it effected fruitfully and maintained saving humidity in cotton plant rows, cavity of soil, water conductivity features during vegetation period in comaparision to usual soil humidity variants

-In the experiment in the soil condition fertilized with NPK 150-105-75 kg/hec. edding 750 kg bentonite concerning to both variants LFCD in both watering regimes diminishing soil capacity and improving its cavity considerably in creased its water absorbing capacity. Soil layers watered in 60-70-60% soil humidity in comparison with LFDC showed the highest capacity of water absorbtion

. Water absorbtion of soil in fertilized soil was 74,6 m^3 in comparison to the starting point of vegetation period it was 80,5 m^3/hec;

-in cotton plant cultivation use of NPK 150;105;75 kg/hec with minimal doses of bentonite made reliable condition for growth and vegetation of cotton plants. Efficacy of fertilizers in reased the process to 25%.

-In Andijan region light grey soil conditions fertilizing cotton plants in vegetation period at NPK 150-105-75 kg/hec with minimal doze of bentonite 750 kg/hec was observed to be the most agricultural process. It gave the opportumty to diminish technology resource use, water, fertilizer, fuel, cotton plant seeds application.

References

1. 1. 1. Methods of field experiments. UzPITI. 2007
2. 2. 2. Boboev F. Toshtemirov A. Effects of water and nutritional regimes on the productivity of cotton varieties. "Water and Resource Agro Technologies in Agriculture of the Republic of Uzbekistan". Proceedings of the international scientific-practical conference. Tashkent, 2008. 369-370 pages.
3. 3. 3. Jumanov D., Muminov K., Toshtemirov A. Waterfall. Journal of Agriculture of Uzbekistan. Tashkent, 2004. No. 3, pp. 23-24.
4. 4. 4. Mamadzhonova N.A., Tukhtasinova S. Morphological and biological and agrotechnical properties of the promising cotton variety “Andijan-37” // Vth International Scientific and Practical Conference of Young Scientists dedicated to the 25th anniversary of the FSBI Pre-Caspian Research Institute of Arid Agriculture directions of development of modern science of young scientists of agrarians. May 11-13, 2016 S. 291-293.
5. 5. 5. Mamadjonova N.A, Isashov A. Farmers' Recommendations on the Use of Bentonite from Agroma in Supplementing Cotton with Extra Water and Fertilizers // Recommendation. - Tashkent, 2018. page. 30.
6. 6. 6. Mamadzhanova, N.A., & Urazmatov, N.N. (2018). Shoot of cotton seeds and density of seedlings. Actual problems of modern science, (5), 224-226.
7. 7. 7. Mamajonova, N.A., & Tukhtasinova, S. (2016). MORPHO-BIOLOGICAL AND AGROTECHNICAL PROPERTIES OF THE ANDIZHAN-37 PERSPECTIVE VARIETY VARIETY. In PRIORITY DIRECTIONS OF DEVELOPMENT OF MODERN SCIENCE OF YOUNG SCIENTISTS OF AGRARIANS (pp. 291-293).
8. 8. 8.Saliyeva, R., Musaev, A., &Jumaeva, A. (2019). CLEARANCE OF THE EAST FRUIT BIOLOGY. AcademiaOpen, 1(1).