GROWTH AND DEVELOPMENT OF SUNFLOWER PLANTED AFTER FLOODING OF SARDOBA RESERVOIR

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Introduction

Today, in the conditions of climate change, conducting scientific research in agriculture, especially in the field of irrigated agriculture, is becoming a very big issue. The increasing population and the emergence of new sectors of agriculture and industry at the same time increase water consumption. is expanding the world further, this process continues continuously. Reservoirs are very important in providing water to agriculture and other industries. In countries such as the USA, China and India, where irrigated agriculture is widespread, the main part of irrigation water is provided by reservoirs. However, under the influence of some natural and anthropogenic factors, dams are bursting, collapsing, and washing away. As a result, floods have a negative impact on people's lives, health, homes and incomes. In connection with the rapid growth of the population, increasing the scale of water consumption in agricultural sectors is becoming the main issue of today.

Main part

In the experiment, the land allocated for planting sunflowers was the land where 5-10 cm of the upper layer of the soil was covered with mud and a layer of sand was formed due to the flood of the reservoir. After this mud dried, the top soil formed a sand layer consisting of sand particles of various sizes. Therefore, the fertility of this soil is low. Here, the field was partially cleared of sand and mud before planting sunflowers. It was lightly plowed with a plow to a depth of 20-25 cm. After that, the field was buried and leveled by plowing. Soil is mixed in this technological process. For this condition, the soil had to be mixed in this way. Otherwise, a 10 cm layer of sand would be formed in the upper layer, and there would be no conditions for the growth of the plant. Therefore, in the process of plowing, these two layers were mixed and the soil became suitable for planting some crops.

Sunflower seeds germinate in 9-10 days at soil temperature of 15-16^{0}C. The optimum temperature for sunflower is 25-27^{0}C. Planting: 60 cm between rows for silage, 15 cm between plants. Sunflower was planted in the scheme of 60x15-1. There were 111111 seedlings on the 1st square. In our study in 2021, phenological observations were made on the growth and development of sunflower in the fields. During the growth and development of sunflower,

activities related to its care and phenology were carried out in sequence. Weeding was done for the 3rd time during sunflower vegetation. In the second cultivation, an additional knife (razor) was used to cut off the bruised weeds 6-8 cm away from the row planted with sunflowers.

In experimental variants planted in research, sunflower seeds fully germinated on 10-12 days, and finally, on 38 days, the formation of baskets began. In the plant, the initial period of flowering phase (25%) was recorded in 65 days after planting and intensive flowering in 70 days (75%). The initial ripening of sunflower seeds was observed from 16.08. This was 81 days after germination. As soon as the sunflowers began to bloom rapidly, they began to harvest them for silage.

The first days of basket formation (25%) were observed at 36 days after germination and rapid development at 40 days. It was observed that 25% of sunflower entered the flowering phase in 68 days after planting, and it entered the intensive flowering phase in 74 days. Due to silting and washing of the upper fertile layer of the soil after the flood of the reservoir, ripening of sunflower was accelerated by 10-13 days. Sunflower growth and development in 2021, biometric calculations (calculation of the plant's height and the number of leaves) were carried out. For this purpose, 25 typical plants were selected from each return (delyanka) and labeled. In the course of the experiment, plant height and number of leaves were calculated for the 3rd time during the growing season of sunflower. Based on the methodology of the experiment, biometric calculations of plants were carried out on June 1, July 1 and August 1, See Table 1.

Table 1. **Carrying out biometric calculations in sunflower**

Blur thickness sm	01.06.21		01.07.21		01.08.21	
	Plant height	Leaf the number	Plant height	Number of leaves	Plant height	Number of leaves
0-15 sm	20,6	5,5	88,7	13,7	158,4	17,5
15-30 sm	23,5	6.0	84,4	13,5	166.1	15,3
>30sm	24,7	6,5	92,4	14.5	168,2	18,1

It was found out from the conducted research that the average height of a sunflower plant is 15.5 cm one month after planting or on the 14th day of germination, and the 6th leaf has begun to emerge, and in the following periods of development, the growth was accelerated. In the calculations made at 1.07, the height of the plant was 85.8 cm, and the leaf in the corresponding condition was 14.2 and finally, in the third term, when biometric calculations were performed

on the plant, it was observed that the height of the plant was 163.7 cm and the number of leaves was 16.8 at 1.08.

References

1. Norkulov, U., Izbazarov, B., Tukhtashev, B., & Eshonkulov, J. (2022). Effects of Sardoba Reservoir Flood on Irrigated Land. *International Journal of Innovative Analyses and Emerging Technology*, *2*(2), 40-42.
2. Norkulov, U., Tukhtashev, B., & Eshonkulov, J. (2022). Change of Mechanical Composition of Soils after Flood of Sardoba Water Reservoir. International Journal of Innovative Analyses and Emerging Technology, 2(2), 36-39.
3. Abdalova, G.N.; Eshonkulov, J.S.; Sulaymonov, S.O.; Abdullayeva, F.M. Improvement of Cotton Nutrition Procedure and Irrigation Technologies. ACADEMICIA Int. Multidiscip. Res. J. 2021, 11, 720–723. [Google Scholar] [CrossRef]
4. Nasirov Bakhtiyor Salakhiddinovich Charshanbiyev Umuroq Yuldashevich, Eshankulov Jamoliddin Saporboy ugli. "Efficiency of application of herbicides which are samuray 33% ek, zellek super 10.4% ek and triflurex 48% ek against weeds in cotton fields" Web of Scientist: International Scientific Research Journal 2.09 (2021): 136-139.
5. Salakhiddinovich, Nasirov Bakhtiyor., Eshankulov Jamoliddin Saporboy ugli 2021 "Development of Irrigation Procedures for Shadow Varieties Planted After Autumn Wheat." International conference on multidisciplinary research and innovative technologies. Vol. 1. 2021. Google Scholar]
6. J Eshonkulov, B Kamilov Effect of irrigation regimes on the fertility of soybean and sunflower cultivars planted in repeated periods To cite this article: January 2023 IOP Conference Series Earth and Environmental ScienceDOI: 10.1088/1755-1315/1140/1/013006 Google Scholar]
7. Burievich, T. B., Olimovich, A. Eshankulov J.S., Turaevich, M.T 2021 Groundwater consumption and cotton productivity. Web of Scientist: International Scientific Research Journal, 2(09), 130-135. Google Scholar]
8. Norkulov U, Izbasarov B, Tukhtashev B, Eshonkulov J., Volume: 2 Issue: 2 2022 Effects of Sardoba Reservoir Flood on Irrigated Land, International Journal of Innovative Analyses and Emerging Technology e-ISSN: 2792-4025 40-42 p.
9. U Norqulov, Sh Axmurzayev, J Eshonqulov, S Raxmatullayev Toshkent viloyati sharoitidasoya dalasidagi zarpechakka qarshi zeta 100 g/l gerbitsidini qo ‘llashning samaradorligi 2022/12/31 RESEARCH AND EDUCATION 503-507 [Google Scholar] [CrossRef]

10. Tukhtashev B, Norkulov U, Izbosarov B Technology of proper use of saline soils in the conditions of Uzbekistan. E3S Web of Conferences 258, 03027 (2021) Google Scholar]
11. Izbasarov B.E, Norkulov U, Tukhtashev, Hikmatov Sh Influence Of New Types Of Horizontal Ditches On The Growth, Development And Yield Of Winter Wheat In Saline And Groundwater Surface Soils. Influence Of New Types Of Horizontal Ditches On The Growth, Development And Yield Of Winter Wheat In Saline And Groundwater Surface Soils 2021Google Scholar]
12. Norkulov U, Tukhtashev B, Eshonkulov J., Volume: 2 Issue: 2 2022 Change of Mechanical Composition of Soils after Flood of Sardoba Water Reservoir, International Journal of Innovative Analyses and Emerging Technology e-ISSN: 2792-4025 36-39 p. Google Scholar]
13. Ziyatov Musulman Panjiyevich, Shamsiyev Akmal Sadirdinovich, Kamilov Bakhtiyor Sultanovich, Abdalova Guliston Nuranovna, Abdurakhimov Shavkatjon Olimovich, Eshonkulov Jamoliddin Saporboy ugli. PJAEE, 17(6) 2020 Effective agrotechnology of cotton feeding in different irrigation methods. Palarch's Journal Of Archaelogy Of Egypt/Egyptology 17(6). ISSN 1567-214x. 3415-3428 p. http://www.palarch.nl/index.php/jae/article/view/1335 Google Scholar]
14. Shamsiyev Akmal Sadirdinovich, Eshonkulov Jamoliddin Saporboyugli, Sultanov Umbetali Tazabayevich 2020 Growth and devolopment of soy and sunflower varieties. ACADEMICIA An International Multidisciplinary Research Journal 10(11):1289-1291
15. Shamsiyev Akmal Sadirdinovich, Kamilov Bakhtiyor Sultanovich., Eshonkulov Jamoliddin Saporboyugli, Ashirov Y.R. Agrophysical and agrochemical properties of influence of recycled soya and soil of the field 2020 ACADEMICIA An International Multidisciplinary Research Journal August – India, 2020. – Vol. 10. – Issue 8. – P. 475-479
16. Dusbayev I R, Nasirov B.S, Ashirov Y.R, Eshonkulov J.S, Rashidov Q 2021 Methods of planting fine fluid cotton and effects of Herbicides. 2nd International Conference on Science Technology and Educational Practices. Turkey 251-254 p. Google Scholar]
17. Eshonkulov Jamoliddin Saporboy ugli., Shamsiev Akmal Sadirdinovich. Vol.5 NO. 2020 Congress (2020) ChanGES in water-physical properties of soil in repeated crop sunflower care. International congress on modern education and integration congress – India – Volume 5. – P. 89-90. Google Scholar]
18. Chorshanbiyev U.Y., Allanov Kh.K., Safaraliyev L.H., Berdiboev E.Y. The effect of organic fertilizer application in growing amarant (amaranthus) plant. IOP Conference Series: Earth and Environmental Science. 2022 IOP Conf. Ser.: Earth Environ. Sci. 1140. 011021. 1-8.

19. Charshanbiev U., Shodmanov M., Sultanov U., Dusbaev I. Effects of continuous application of Samurai and Zellek Super herbicides on cotton fields against weeds in the conditions of Uzbekistan. E3S Web of Conferences 258, 04052 (2021). 1-11.
20. Nasirov B.S., Charshanbiyev U.Y., Eshankulov J.S., Oblokulova J.B. Efficiency of application of herbicides which are samuray 33% e.k., zellek super 10.4% e.k. and triflurex 48% e.k. against weeds in cotton fields. Web of scientist: Internstional scientific research jurnal ISSN: 2776-0979 (Volume 2, Issue 9, Sep., 2021. 136-139. Google Scholar]
21. J Eshonqulov E Ravshanov, Q Rashidov, Sug‘oriladigan tipik bo‘z tuproqlar sharoitida kungaboqar navlarining o‘sishi va rivojlanishi- Innovative Development in Educational Activities, 2023/4/16.