Volume 2, Issue 12, December - 2024
ISSN (E): 2938-3781

Web of Agriculture: Journal of Agriculture and Biological Sciences
webofjournals.com/index.php/8

PROCEDURE AND AGRO-TECHNIQUE OF CARRYING OUT T AJRJI IN THE MAINTENANCE OF COTTON VARIETIES

Marufjonov Abdurakhmon Mosinjon ogli
Doctoral Student of Fergana Polytechnic Institute, Department of Technology of Agricultural Products Storage and Preliminary Processing

Abstract

Experiments were conducted in the cotton field where developments are introduced by the farm "Qasim-karvon", Kuva district, Fergana region. All agricultural activities carried out in the experimental field, including land preparation, planting seeds, harvesting cotton, installing new water-saving irrigation equipment for irrigation, fertilizing, processing between cotton rows, chilpish, control of cotton pests, defoliation and harvesting were carried out.

Keywords: Agrotechnics, cotton, soil, volume mass, density, field moisture capacity, water permeability.

Introduction

Soils of Fergana region are different from each other. All arable land of the region is 511 thousand hectares, of which 55.6 percent, i.e. 284 thousand hectares, is arable land. Most of the territory of the province is irrigated land, and the remaining part is developed sand , mostly gray and desert soil.

44,200 ha of irrigated gray soil area is typical gray soil, 43 percent of which is arable land. Pale gray soils make up 61,000 hectares, of which 33 percent are arable. There are 10,000 hectares of alluvial soils, 70 percent of which are plowed. Grasslands cover 14,500 hectares and 70% of them are irrigated areas .

The desert region mainly has the following soils: the main soil of this region is sandy loam, which is 237.5 thousand hectares. 72 percent of it is arable land. There are 13,800 hectares of compacted, i.e., artificially created soil by man, and 89 percent of it is currently cultivated. Grassy-barren and grassy desert soils are 19.2 thousand hectares, 97 percent of which are arable lands. Grassy alluvial soils make up 25.2 thousand hectares, 73 percent of which are cultivated, 26.1 thousand hectares of land are meadow soils under sand dunes and hills . Swamp meadow soils make up 4.5 thousand hectares, and only 44% of it is arable. 55,400 hectares of the region's land consists of poorly developed gravelly brown soils and salty, grassy soils. They are considered unfit for driving.

The areas under irrigated agriculture of the province are located as follows according to the level of seepage water: the area with seepage water up to 1 meter 1000 gektar, 2 metrthe area located at the 1st depth 173000 gektar, and 3 metrthe area located at the 2nd depth is 55,000 hectares.

Experimental conditions and methods. The field experience is intended for 2023-2025, and this year it was placed in the field of the "Kasim Karvan" farm, Kuva district, Fergana region. The field experiment consists of 13 variants, each variety consists of 8 rows and 3 returns. Width between

Volume 2, Issue 12, December - 2024
ISSN (E): 2938-3781

Web of Agriculture: Journal of Agriculture and Biological Sciences
webofjournals.com/index.php/8

rows 90 sm, length 50 m. The area of one slice is (50X7.2) 360 m^2. The calculation area consists of (50X3,6)= 180 m^2.
The soil of the experimental field is irrigated meadow-loam, heavy loam according to its mechanical composition, weakly saline. The water level of Sizot is located at a depth of 1.6 1.8 m. Namangan-77 control (control), new promising varieties C-8296 and C-6580 are planted in the experimental area.

Cotton agrotechnics. On February 23, mineral fertilizers were applied before driving. Land leveling was carried out on April 4, harrowing was carried out on April 9, troweling was carried out on April 10, and cutting was carried out on April 16.

The seed was sown on April 18 according to the pilot scheme. Since there was not enough moisture in the soil, the seed was watered on April 25. According to the experimental scheme, the first cotton harvest was carried out on May 9.

During the operation, cotton was cultivated 4 times between rows, 2 times weeded, 3 times against agricultural pests.

Cotton varieties were fed 3 times and watered 3 times according to the experimental schemes. Cotton threading was done on July 26. Cotton was harvested by hand in 3 periods. The agrotechnical activities performed in the experimental area are shown in Table 2.

Results of the experiment, agrophysical properties of the soil of the experimental field, volume mass of the soil . The bulk weight of the soil is one of the main indicators of the agrophysical property of the soil, and it can reach 1.16-1.45 or even 1.50 g/cm ^{3}. It is known that the softer and more porous the soil, the more favorable the conditions for the growth of plant roots. On the contrary, the more dense and hard the soil is, the more it prevents the development of plant roots. As a result, the plant develops poorly.

In the experimental area, the volume weight of the soil was determined at three points in spring and autumn. The volume weight of the soil layer (0-) is 1.23 g/cm 30 sm^3 on average in the spring months , in the sub-haydov (30- 50 sm) layer it is 1.34 g/cm ^{3}, and in the soil layer (0.50 cm) it is 1.27 was g/cm ^{3}. These indicators are favorable for the growth and development of plant roots. By the autumn months, the volume weight of the soil increased slightly. That is, it was 1.32 g/cm ^{3} in the clay layer of the soil , 1.37 g/cm 50 $sm^{3 \text{ in the clay}}$ layer (30-) , and 1.35 g/cm ^{3} in the layer of the soil (0.50 cm). . In the autumn months, the increase in volume weight of the soil was caused by the increase in density, firstly, as a result of running water, and secondly, as a result of the movement of driving equipment and aggregates. The indicators of volume mass of the soil are presented in table 1 .

Table 1 **Volumetric mass of soil.**

Variant	In the spring			In the fall		
	Soil layer, cm			Soil layer, cm		
	0-30	30-50	0-50	0-30	30-50	0-50
1	1.22	1.31	1.26	1.28	1.36	1.33
5	1.25	1.33	1.27	1.35	1.38	1.36
6	1.24	1.34	1.27	1.32	1.37	1.35
Average	1.23	1.34	1.27	1.32	1.37	1.35

Water permeability of the soil. The water permeability of the soil depends on its mechanical composition, granularity, and density. For example, if the mechanical composition of the soil is light (sand, light, medium loam), well-grained soil has a low volume weight, the soil conducts water well, and vice versa. The water permeability of the soil is determined by the amount of water that has passed through the soil in a certain time.

In order to determine the water permeability of the soil of the experimental field, it was studied by pouring water into a 25x25 cm frame for 6 hours at three points in the square rhombus method and determining the water consumption.

2 shows the water permeability of the soil . According to the obtained data, the water permeability of the soil in the first hour was 238.1 mm/h on average, then this indicator decreased during the next 6 hours, and the minimum water permeability was at the 6th hour. It was observed that it was 45.2 mm/h. In general, the water permeability of the soil in a total of 6 hours is 625.3 mm/h, according to the ASAstapov table, the experimental field has an average water permeability.

Table 2 **Water permeability of the soil of the experimental field, mm/h.**

Variant	Watches						In 6 hours	On average, per hour
	1	2	3	4	5	6		
1	238.1	120.1	91.4	61.1	53.0	45.2	608.8	101.5
2	251.3	116.5	96.2	72.0	65.3	42.8	644.1	107.3
3	265.4	113.5	89.6	65.4	50.5	38.3	622.6	103.8
Average	251.6	116.7	92.2	66.2	56.3	42.1	625.3	104.2

Limited field moisture capacity of soil. Soil moisture capacity varies from soil to soil. Soil moisture capacity may vary depending on its mechanical composition and granularity.

According to SNRijov (1948), the field moisture capacity of the soil of heavy clay soils is high (27-28%), and on the contrary, it is low (22-23%) in light loamy and sandy soils. ladi

In order to determine the limited field moisture capacity of the soil of the experimental field, according to ASAstapov's instructions, a 3x3 meter plot 30 smwas taken at a height of 25 meters and filled with water. After the water in the marza was absorbed, it was covered with a special film, and after 3 days its moisture was determined.

The limited field moisture capacity of the experimental field soil is presented in Table 5 . According to the obtained data, the limited field moisture capacity of the field soil 50 smwas 24.3% in the 0th layer, 70 sm24.7% in the 0th layer, and 100 sm25.4% in the 0th layer.

References:

1. Madaminjon Ubaydullayev, Nodirjon Usmonov, Mirzabobur Mirzaikromov, Farrux To'xtashev, Barchinoy Umarqulova, Nodirbek Ergashev. Scientific analysis of the morphological state of cotton varieties in the experiment before defoliation. E3S Web Conf. Volume 538, 2024. XVI International Scientific-Practical Conference “Actual Problems of Improving Farming Productivity and Agroecology” (IPFA 2024). 04012. page(s) 5. DOI https://doi.org/10.1051/e3sconf/202453804012

2. SAMIYEVICH, A. A., & BOTIRALIYEVICH, U. N. (2020). Effectiveness of co-planting crops in sandy soils. Plant cell biotechnology and molecular biology, 21(65-66), 1–9. Retrieved from https://ikprress.org/index.php/PCBMB/article/view/5688

3. Madaminjon Ubaydullayev, Hasanboy Asqarov, Raxnamoxon Nazirova, Omonjon Sulaymonov, Nodirjon Usmonov, Dinara Abdukarimova. (2024). Research of the scientific basis of leaf surface formation indicators in medium fiber cotton varieties. E3S Web Conf. Volume 538, 2024. XVI International Scientific-Practical Conference “Actual Problems of Improving Farming Productivity and Agroecology” (IPFA 2024). 04010. page 5. DOI https://doi.org/10.1051/e3sconf/202453804010

4. Усмонов, Н. (2024). ИСПОЛЬЗОВАНИЕ ОТХОДОВ ВИНОДЕЛИЯ И ПРОИЗВОДСТВО БИОХИМИЧЕСКОГО УКСУСА. *Interpretation and Researches*, (3). извлечено от https://interpretationandresearches.uz/index.php/iar/article/view/2704

5. Усмонов, Н. (2023). БИОТЕХНОЛОГИЧЕСКИЕ АСПЕКТЫ БОРЬБЫ С ВОЗБУДИТЕЛЯМИ БОЛЕЗНЕЙ РАСТЕНИЙ. *Biologiyaning Zamonaviy Tendensiyalari: Muammolar Va Yechimlar*, *1*(4), 658–660. Retrieved from https://inashr.uz/index.php/bztmy/article/view/431

6. Usmonov Nodirjon Botiraliyevich. (2023). Water-Saving Technology in Sandy Soil Conditions. *Web of Agriculture: Journal of Agriculture and Biological Sciences*, *1*(9), 7–12. Retrieved from https://webofjournals.com/index.php/8/article/view/460

7. Usmonov Nodirjon Botiraliyevich. (2023). Technology of Intensive Planting of Sunflower and Soybean for Grain in Sandy Soils. *Web of Agriculture: Journal of Agriculture and Biological Sciences*, *1*(8), 21–24. Retrieved from https://webofjournals.com/index.php/8/article/view/313

8. Усмонов, . Н. (2023). ЭКИШ ТЕХНОЛОГИЯСИ. *Естественные науки в современном мире: теоретические и практические исследования*, *2*(4), 67–69. извлечено от https://in-academy.uz/index.php/zdtf/article/view/13456

9. Usmonov Nodirjon Botiraliyevich. (2022). EFFECT OF SEED GERMINATION OF INTERCROPPING COTTON AND PEANUT. *E Conference Zone*, 1–2. Retrieved from https://www.econferencezone.org/index.php/ecz/article/view/1423

10. Usmonov Nodirjon Botiraliyevich. (2022). BENEFITS OF CO-PLANTING COTTON WITH PEANUTS. *Conferencea*, 90–92. Retrieved from https://conferencea.org/index.php/conferences/article/view/1040

11. Nazirova Rakhnamohon Mukhtarovna, Akhmadjonov Avazbek Akmaljon ugli, & Usmonov Nodirjon Botiraliyevich. (2022). ROOTSTOCK GROWING TECHNOLOGY. *INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT, ENGINEERING AND SOCIAL SCIENCES ISSN: 2349-7793 Impact Factor: 6.876*, *16*(5), 1–5. Retrieved from https://gejournal.net/index.php/IJRCIESS/article/view/442

12. smonov Nodirjon Botiraliyevich. (2022). Effect of Intercropping of Cotton and Peanut on Quantity and Quality of Soil Microorganisms. *Eurasian Scientific Herald*, *11*, 12–15. Retrieved from https://www.geniusjournals.org/index.php/esh/article/view/1990

13. Usmonov Nodirjon Botiraliyevich. (2022). EFFICIENCY OF CO-PLANTING OF COTTON AND PEANUTS IN SANDY SOILS OF THE DESERT REGION. *Web of Scientist: International Scientific Research Journal*, *3*(7), 458–461. https://doi.org/10.17605/OSF.IO/GY54Z

Volume 2, Issue 12, December - 2024
ISSN (E): 2938-3781

Web of Agriculture: Journal of Agriculture and Biological Sciences
webofjournals.com/index.php/8

14. Mukhtarovna, Nazirova R., et al. "Study of the Influence of Processing on the Safety of Fruit and Vegetable Raw Materials." European Journal of Agricultural and Rural Education, vol. 2, no. 6, 2021, pp. 43-45. https://www.neliti.com/publications/378976/study-of-the-influence-of-processing-on-the-safety-of-fruit-and-vegetable-raw-ma#cite

15. Назирова Рахнамохон Мухтаровна, Мирзаикромов Мирзабобур Алишер Угли, Усмонов Нодиржон Ботиралиевич Влияние процесса охлаждения зерна кукурузы на его сохраняемость, количество потерь и на заражённость насекомыми-вредителями // Проблемы Науки. 2020. №6-2 (151). URL: https://cyberleninka.ru/article/n/vliyanie-protsessa-ohlazhdeniya-zerna-kukuruzy-na-ego-sohranyaemost-kolichestvo-poter-i-na-zarazhyonnost-nasekomymi-vreditelyami