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Review Article

SCIENTIFIC BASIS FOR SOYBEAN PLANTING IN THE CONDITION OF GRASSY ALLUVIAL SOIL PRONE TO SALINIZATION

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Abstract
This article considers the use of resource-saving irrigation technologies for cultivation of soybeans in the conditions of specific land-reclamation of the Bukhara region. In the article, the irrigation by laying a black film on the furrow, spreading a straw in the furrow and adding pre-treated hydrogel crystals to the soil in soybean cultivation is scientifically based. In the conditions of the Bukhara region, the varieties of soybean "Nafis", "Uzbek-6", "Orzu" were grown in 2017-2019 and some researches were done on them.

Keywords: Ancient irrigated, grassy alluvial soils prone to salinization, limited field moisture capacity, soil mass, water permeability, soybean grain yield.

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INTRODUCTION

The growth of the world population is causing the ever-increasing demand for food day by day. For meeting the demand for food in the Republic of Uzbekistan, from the first years of independence, serious attention has been paid to the selection and breeding of grains and legumes.

Wide and abundant spread of soybean, the amount of protein, oil and other important organic and mineral substances in soy grain, their proportion allow it to be used on various areas.

There are a wide range of valuable food products from its cereals and it is considered as a technical crop with a high processing capacity. The most economically developed countries of the world, the USA, Japan, China, Korea, Brazil, Argentina are achieving to solve the protein deficiency as a result of increased soya bean production, [1]. The Decrees of the President of the Republic of Uzbekistan were made "On measures to increase Glycine max planting and soya bean production in the Republic in 2017-2021"[2] dated March 14, 2017 № PD-2832, on amendments and additions to the Decrees of PD-2832 and PD-3144 of July 24, 2017, namely, "Program of measures on creation of high-yield soybean varieties in the republic for 2017-2021, establishment, cultivation and expansion of the primary seeds"[3]. The determination of the sown areas of soybeans by the Decree of the President of the Republic of Uzbekistan for its development requires development and introduction of agro-technologies for obtaining high quality and high quality grain from soybeans for the full satisfaction of the population's demand for food, in particular, for vegetable oil, the stable provision of population with vegetable oil, reducing imports, increasing in livestock and poultry production by providing the most important and valuable feeds for livestock and poultry and the development of selection and seed production.

Due to insufficient research on leguminous plants in the Republic of Uzbekistan, the study of the agro-technology of the proper selection of soybean varieties and obtaining of abundant, high-quality crop including the period and norms of irrigation, the period and norms of sowing, factors such as nutrition demands to be carried out the large-scale research works. For this purpose, some research works have been carried out on the cultivation of the varieties of soybean named “Nafis” and “Uzbek-6” in the conditions of alluvial and saline soils of ancient irrigated meadow fields of the Scientific Training Center of the Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers in 2017-2019 [4]. Field, laboratory researches and phenological observations, Cotton selection, Agro-technology of seed breeding are carried out according to the accepted “Methods of field experiments” (Uzbek Scientific Research Institute of Cotton breeding 2007) of the Scientific-Research Institute. Accuracy and reliability of the data obtained have been analyzed by the mathematical and statistical analysis of the common method of B.A.Dospexov and SPSS (Statistical Package for Social Science) software. Photosynthetic productivity of soybean varieties and the amount of chlorophyll pigments in leaves have been studied by developmental stages (by A.A.Nichiprovich in 1963).

It is not recommended to plant soybeans in areas with low soil fertility and water shortages. It is impossible also to get an expected harvest from the soybean planted in such areas.

Before the sowing of soybeans in the experimental plants, the weed was removed from the weeds for qualitative preparation of the field, qualitatively leveled the area with the cutters, the cutting of the slopes in the cuttings, and the setting of phosphorus and potassium mineral fertilizers. The soil was prepared by ensuring 100% of the phosphorus fertilizers in the amount of 90 kg and the potassium fertilizer at 60 kg. Particular attention should be paid to the leveling of the sowing area. Soil is impossible to get a certain amount of seedlings from poorly prepared area. Due to the lack of saplings in the field, weeds appear there, which results in a drastic reduction of sown grain yield.

It is necessary to set optimal timing for planting and to ensure that the soil is warm, humid and favorable. Experiments indicate that the soil temperature is 14-16 degrees for soybean planting, but the process given above should be done when the soil temperature is 10-12 ^{0}C. The standard for planting the soybeans depends on the variety and the purpose of its use.

Due to the large feeding area of late varieties, for planting less than 350-370 thousand seeds per hectare, 450-470 thousand seeds were chosen.

Planting depth should not exceed 4-5 cm. If the seeds are sown too deep, it becomes difficult for them to raise their leaves. The sowing is mainly done with vegetable seeders of "SPCh-6" Romanian "SON-2,6" and planted with the KEYS-1200 seeder. If the ground hardens until the grass is formed, it is immediately softened. Softening should be done twice.

MATERIALS AND METHODS

They are used in the subirrigation method in conditions of meadow soils with a groundwater level of 1-3 m and mineralization of 1-3 g/l and the influence of this method on the dynamics of development of winter wheat of the Polovchanka variety on obtaining high yields are established.

Field experiments were carried out in accordance with the methods of "Methods of State variety testing of agricultural crops", "Methods of agrochemical, agrophysical and microbiological studies in irrigated cotton areas", "Methods of field experiments with cotton", Statistical processing of experimental data was carried out according to method B.D.Doshekhova using Microsoft Excel.

RESULTS AND DISCUSSION

The normal maturing named "Orzu" Genetic-1, "Dustlik", "Tumaris", "Oyjamol", "Uzbekistan-2", "Parvoz" and early maturing named "Baraka," "Uzbek-6" varieties of soya beans were invented. Early maturing varieties ripen in 75-90 days, middle maturing varieties - 100-120 days and late varieties - 135-140 days. Soybean can grow in different soils. However, when it is planted in fertile, porous, humus-rich soil with the light mechanical composition, its productivity is certainly high [9, 10, 11].

The best period for sowing Glycine max is when the temperature in the 0-10 cm layer of soil is 12-14 ^{0}C. The seed germination of soybeans requires an effective temperature of 120-130 degrees (over 10 degrees).

The most effective way is to achieve 60 cm, 70 cm furrows for sowing and weighing 50-70 kg per hectare due to the large sowing of soybean seeds, with an average of 350-450 thousand seeds per hectare.

1. 60 cm x 4 cm x 1 pc is used for sowing between 60 cm rows. There are 416666 theoretical seedlings per hectare. When 1000 seeds of soybeans are 140 grams, 58 kg of seeds per hectare is needed. If we consider the field fertility to be 85%, it is necessary to correct the planting rate and require 68.6 kg of seeds per hectare, Table-1.
2. 70 cm x 3.5 x1 scheme is used for sowing of soybean crop in the range 70 cm. This includes 408,163 seedlings theoretically per hectare. At 140 grams per 1,000 seeds, we need 57.0 kg of seeds per hectare. If we estimate the field productivity to be 85%, we will need to adjust the sowing rate to 67.2 kg per hectare.
3. 90 cm x 3 x1 scheme is used for sowing soybeans between rows 90 cm. This includes 370370 seedlings theoretically per hectare. At 140 grams per 1000 seeds, we need 57.0 kg of seeds per hectare. If we estimate the field productivity to be 87%, we will need to adjust the sowing rate to 61.0 kg per hectare.
4. When sowing seeds on rain-fed lands, seeding seeders are used. No sowing of soybeans is currently planned in such lands. When sowing seeds, it is necessary to use SPCh-6-8 or any other type of pneumatic seeding drill. When planting soybeans in pneumatic drills, which are clearly nesting, it will ensure that the seeds are not damaged and sown in the same thickness. It is preferable to have a sowing depth of 4-5 cm. During sowing, the lid of the seed drill must be kept closed. Otherwise, the sunlight in the jars causes the seeds to die of nitrogen-fixing bacteria at the expense of sunlight. In cases where there is not enough moisture in the soil after the seeds are planted, Of course, the soybean is required to be given water to the planted area without light puddle. Affecting the germination energy of the seeds in the puddled area, the seeds are difficult to germinate and cause a decrease in the thickness of the seedlings in the area. The period of planting soybean seeds in spring in the main areas depends on the soil-climatic conditions, in the southern regions it is desirable to plant them at the end of March and in the first half of April, in the central regions-at the age of two in April, and in the northern regions, from the third decade of April to the end of April [5].

Table 1. Seeding standards on the sowing scheme of soybeans

№	Seeding system	Theoretical number of seedlings,	Weight of 1000 seeds, g.	Spending seed rate, kg.
1	60 sm x 3 sm x 1	555555	150	83,3
			130	72,2
2	60 sm x 4 sm x 1	416666	150	62,5
			130	54,2
3	60 sm x 5 sm x 1	333333	150	49,9
			130	43,3
4	70 sm x 3 sm x 1	476190	150	71,4
			130	61,9
5	70 sm x 4 sm x1	357142	150	53,5
			130	46,4
6	70 sm x 5 sm x 1	285714	150	42,8
			130	37,1
7	90 sm x 2 sm x 1	555555	150	83,3
			130	72,2
8	90 sm x 3 sm x 1	370370	150	55,5
			130	48,1
9	90 sm x 4 sm x1	277777	150	41,6

			130	36,1

Feeding the soybean in the field of experimental grazing. To obtain a hundredweight soybean from the soil, 4-5 kg of nitrogen and 2.3-2.5 kg of phosphorus and 3.5-3.7 kg of potassium fertilizer are spent. Soybeans in Uzbekistan grow and yield well on all washable salty soils. The shade can grow on different soils. But if the mechanical composition is planted on light, fertile, porous, humus-rich soil, the yield will certainly be higher. Soybeans poorly absorb nutrients from the ground until they blossom before sprouting. If the seeds of soybean fields are planted with nitrogen, it is necessary to plant 60-90 kg of phosphorous (160-200 kg in physical condition), 90-100kg potash fertilizers (140-180 kg in physical condition) in pure form per hectare, on average, 15-20 ton organic fertilizer is given. If the seeds are planted without nitrogen, the possibility of accumulating nitrogen in the amount of pure 40-50 kg (110-180 kg in physical condition) together with planting is lost.

When the plants formed a second or third Maple, the first cultivation was conducted. Later, this process was repeated 2 or 3 times. Soil is watered 3-5 times, depending on climatic conditions and varietal characteristics. The norm of irrigation will be 800-900 m^3 per hectare, sprinkling irrigation is also possible. The norm of irrigation in this process is 500-700 m^3. Fields with ground water 120-140 cm are considered the most suitable for soybean, in such areas soybeans are watered 2-3 times during the growing period. The number of irrigation increases if the groundwater is located below 2 meters.

Soybean is a very demanding plant for moisture. Therefore, it is planted mainly in irrigated areas in Uzbekistan. Soybeans are considered a demanding, short-day plant for lighting. But the early maturing varieties are not so affected by the light of the day. The soybean can grow on different soils. The soybean plant is demanding for heat. Its seeds are considered sufficient at the beginning of the flour 15-180C, and the temperature of 20-220C for the lawn to be formed. In Uzbekistan, the air temperature rises to 38-430C. The temperature of 1600-1700^{0}S for the early maturing varieties of soybeans, and 2000-2200^{0}S for the middle maturing varieties, and 2800-3000^{0}S for the late maturing varieties are needed. In autumn, low temperatures-2-2.5^0 C, harmless to soybeans, -at 4-5^{0}S degrees, the plant and its seeds are damaged by the cold. The lower the air and soil temperature when soybean seeds are planted, the later the seeds germinate, the higher they accelerate. When sown repeatedly, the seeds germinate on 3-4 day. Preparation of soybeans for planting agro-events are carried out in our region in the same way as prepared for planting of cotton land.

In order to ensure the exchange of air in the soil, reduce the amount of harmful salts contained in the soil, damage, as well as to improve the thermal, water permeability, and in order to eliminate weeds, the first processing with cultivators is carried out when the soybean plants germinate. In this regard, cultivators will have to be placed at least 10-12 cm away from the plant, due to the soil conditions of the depth of the working organs of the KRX-4, and at a distance of at least 8-10 cm from the plant. During the growth period of the shade, due to soil conditions, it is required to process it with cultivators at least 2-3 times in a row.

In order to clean the soybean fields from weeds, it is necessary to clean the grass and chop it with a hoe.

According to the soil conditions in the areas where the groundwater is near on the surface, in the rainy years conducted the drawing device at a depth of 20-25 cm after 1th cultivation in the coming years, thoroughly air and heat regime of the soil, it creates the necessary conditions to ensure rapid growth of the root.

Relying on the data for a high and quality harvest from soybeans, it is necessary to give it in its pure form an annual norm of 70-75 kg of nitrogen, 90 kg of phosphorus and 60 kg of potash fertilizers.

The assimilation of nitrogen in the air of the existing depleted bacteria in the root of the soybean plant occurs only when the seeds are fertilized with bio-drug. It should be fed with nitrogen fertilizer for the first time until the highest leafing period of the soybean. In this regard, on the account of pure nitrogen per hectare, 30-35 kg of mineral fertilizer with a cultivator fertilizer was placed at a depth of 12-14 cm from the soil surface between the rows 10-12 cm away from the plant.

The Fed area is lightly watered. When the irrigated area was reached, it was processed between rows in order to soften the soil at moisture. Feeding the shade with nitrogen fertilizer for the second time in the period of leafing and flowering of the plant, the fertilizer with a fertilizing cultivator in the pure form of nitrogen fertilizer in the amount of 40 kg per hectare, the working part of the cultivator was placed between the rows 14-16 cm away from the plant to a depth.

Giving nitrogen fertilizers at a later stage of development or in late periods delay the growth period of the plants and create the need for nutrients above. As a result, it delays ripening and reduces grain yield.

The growth and development of soybeans also depend on the relative humidity of the air, especially when the relative humidity at 60% of the plant's flowering stage causes the flower and legumes to fall. Therefore, the relative humidity at this stage of 75-80% is the most important for soybeans [8].

It is desirable to water the shade every 15-18 days for the first time on average 600-650 m per hectare due to soil conditions during the flowering and flowering phase during the growing period, for the second time during the flowering and salting period, the maximum of maintaining moisture during the ripening phase of soybeans and average 800-850 m3 per hectare for the third time during the leguminous grain filling period, Timely irrigation ensures that the grain is full. When there is no moisture in the field, the soybean grain becomes finer, resulting in a dramatic decline in productivity [9].

In the care of Meadow alluvial soils of Bukhara region prone to salinity, which is irrigated from ancient times, when the soil received moisture is 70-70-60% compared to the wet capacity of the boundary field, it is recommended to water the irrigation system 1-2-1, watering in flowering phase 615 m^3, watering in flowering phase 600-550 m^3 and sprouting, seasonal salting meyori-2360^3 m.

During the growing period of vegetation in medium-grassy soils-for the first time on average 800-950 m^3 per hectare due to soil conditions in the flowering phase, for the second time in the flowering-end period, for the third time during the ripening period 1000-1200 m^3 per hectare, during the ripening phase of soybeans, it is desirable to irrigate the soybean once in every 15-18 days. The timely implementation of irrigation ensures that the grain is full. The lack of moisture in the area leads to a sharp decrease in productivity, as a result of which the soybean grain ripen finely.

In the care of the soybean in the conditions of Meadow alluvial soils of the Bukhara region prone to salinity, which was formerly irrigated, when the soil received moisture (in medium-sandy soils) is about 70-70-60% compared to the limit field wet capacity, the irrigation system is recommended to water with 1-2-1, sprouting, irrigation norm 815 m^3 per hectare in flowering phase, watering norm 1000-1200 m^3 per hectare in flowering burdock finishing phase, seasonal irrigation norm 3615 m^3 per hectare [10].

Preparation of land for planting - it is desirable to water the field as much as possible in the autumn season, and then drive it to a depth of 22-25 CM with a pinch plow, provided that the

hectare is given 90 kg of phosphorus fertilizer and 100 percent of the annual norm of 60 kg of mineral fertilizers from potash fertilizer. Also in the plowed fields, leveling is carried out with the help of P-4, VP-8 or PN-5.6 base levers, the incisors are crushed, the process of harrowing is done, the ground is prepared qualitatively. When seeds are planted in well-leveled, uneven fields do not germinate to the same depth, as a result, the seedlings in the field on account of the fact that the soybean seedlings remain fully sprouted and the field remains strange. The preparation of soybean seeds for planting, agro-technical actions such as sowing seeds, is carried out just like in the main fields of the cotton plant. The norm of fertilization is increased by 20% the distance between the soil in the planting scheme is reduced. The thickness of seedlings in the area re-planted is 450-550 thousands. The early maturing varieties are selected for re-planting and its yield is relatively low. Therefore, it will be possible to obtain a higher yield from them by increasing the thickness of the seedlings. Due to the increase in the number of seedlings, it is possible to raise the legumes on the stem to 1.5-2.5 cm above the ground and it reduces the loss of soybean harvest.

All agro-technical activities that take place during the growing season in the soybean plant, such as the processing of sprouted plants among the range, fighting weeds, making hoe chop, agro-technical activities such as feeding and watering are held as in the main cotton fields.

Soybeans are considered the most valuable leguminous grain crop and it is the most important crop in providing the population with food, especially plant protein. The increase in plant protein production in the future will be associated with soybeans. Soybeans are the most important crop according to plant protein, oil, nutrient feed for livestock, nitrogen repellent in crop rotation and many other characteristics. After studying soybean cultivation technology, the field experiments were conducted for our farmers to produce vegetable and oil-rich products.

We conducted observations on some aspects of scientific research on the effect of the duration and norm of planting of prospective varieties of soybeans on the growth and development and yield of medium fertile soil in the same irrigation regime. In particular when the “Nafis” soybean variety was sown on April 10 at 60 kg per hectare, the average yield was -31.8 hundredweight per hectare. On April 30, an average of -29.8 hundredweight per hectare grain yield was obtained in the second sowing period, which was observed to have decreased 3.2 hundredweight per hectare yield when sown in the evening period compared to the first. It was found that the periods and norms of planting in the soybean varieties had a great influence on the development of growth, and all biometric indicators that confirm the yield were determined that the yield decreases as the planting time is delayed.

In the soybean plant, leaf vegetation season plays an important role as it is an important physiological process in the leaf. This speeds up the process of photosynthesis and the yield is formed in this biological physiological process. The development of plant leaves is directly dependent on productivity. Therefore, in scientific observations, the attention was paid to the development of the leaf. Since studies on leguminous grain crops have not been conducted sufficiently in the conditions of Zarafshan Oasis, the study of factors such as the agro-technics of obtaining high and high quality harvest from soybeans, in particular the duration and Norm, has shown that the location of the first legume from the bottom of the crop Horn in leguminous crops is very important because the legume is low, it can be difficult to harvest by the machine, causing the crop to fall. The first lower leg at an average height of 13.3 cm when the "Orzu" variety was planted on April 10; the variety was placed on April 20 at the second planting time of 11.4 centimeters and 1.9 centimeters lower than the first period. When the same variety was sown in the last planting period of 30 April, it was found that this indicator was 11.1 centimeters below the soil surface from the first planting period to 2.2 centimeters.

The effect of the periods and norms of planting studied in the experiment on the location of the first lower legumes can be seen from the table.

During the growing season, biometric measurements were carried out and data were analyzed with the completion of harvesting of different soy varieties.

Table 2 Growth and development of soybean

Variety№	Planting time	Planting norm, kg/he	Location of the first legume, cm	Harvest норн	Legumes		Grain	
					Number	Weight, gr	number	Weight, gr
1	10.04	50	16.4	3.0	42.2	20.1	42.1	18.5
		60	18.5	3.0	42.0	23.2	45.3	19.3
		70	19.6	3.0	44.9	22.1	46.3	19.6
2	20.04	50	15.0	3.0	39.0	18.9	35.2	13.2
		60	18.0	3.0	42.0	19.2	42.5	13.6
		70	19.2	3.0	38.0	18.2	43.8	14.9
3	30.04	50	14.6	2.5	39.0	18.2	28.0	9.1
		60	17.8	2.0	40.0	18.2	40.8	11.4
		70	18.1	3.0	38.0	17.9	41.5	12.1

When the "Nafis" variety was planted on 10-th April at a norm of 60.0 kg per hectare, the first lower legume was located at an average height of 17.5 cm; in the second planting period of 20 April-17.0 cm and was observed to be 0.5 cm lower than the first. During the last planting period, this indicator was 16.8 CM, which was lower than the first planting period by 0.7 cm.

In the experiment, it was found that the location of the first lower legume of the soybean varieties planted was lower than that of the late sow. The amount of sow norm 60.0 kg/per hectare is optimal. It was observed that the branching of the soybeans was rather slow, and in the "Orzu" and "Nasif", "Uzbek-6" soybeans there were an average of 3 horns. The number of legumes is a type indicator, which can change at the influence of the conducted technological events. In the experiment, the number of legumes was 41.6 when planted on April 10 in the "Orzu" soybean variety which was 40.0 in the second period of April 20, an increase of 1.6 times compared to the first seeding period. On 30 April, the number of legumes in the last planting period was 37, which was less than 4.6 from the first period. In scientific observations, when soybean “Nafis” variety were planted 60.0 kg on April 10, the number of legumes was 43, in the second term, it was 40.0 which was

sown on April 20, there was a decrease of 3 compared to the first planting period. At the last sowing period, the number of legumes was 38 which it was at 5 and it meant that it was less than the first term. Observations show that the weight of legumes was 10 Gramm when the soybean variety "Orzu" was sown on 13.1 April, in the second term, it was 12.2 grams, with a reduction of 0.9 grams compared to the first planting period. During the last sowing period, the weight of legumes was 12.9 grams, which was less than 0.2 gr from the first period. The observations showed that the weight of legumes was 23.3 Gramm when planted on April 10 at a rate of 60.0 kg per hectare in "Nafis" soybeans, 19.2 grams in the second term, a decrease of 4 gr compared to the first planting period. During the last planting period, the weight of legumes was 18.2 gram, which was less than 5 gram from the first period. The number of beans is a varietal indicator, which can change at the influence of conducted agro-technological activities. In Vegetative observations, when the soybeans of the "Orzu" were planted on April 10, the number of cereals was 36, in the second term it was 33, and there was a decrease by 3 compared to the first planting period. The number of legumes in the last sowing period was 32.2 and it was observed that it was less than 3.8 units from the first period.

When the "Nafis" variety of soybean was sown 60.0 kg per hectare on April 10, the number of grains was 45.3 and the second term was 42.5 on April 20, with a decrease of 2.8 compared to the first sowing period. The number of legumes changed as follows when planted during the last planting period was 40.8 and less than 4.5 from the first period were observed to be legumes.

Table 3 Impact of sowing time on productivity

№	Sowing time	Sowing norm, kg/ha	Returns				Average
			I	II	III	IV	
1	April 10	50	31	31.8	31.6	31.8	31.5
2		60	32	31.7	31.8	31.6	31.8
3		70	30.2	30.8	30.3	30.6	30.5
1	April 20	50	29.8	29.6	30.0	29.9	29.8
2		60	20.0	31.0	28.3	29.7	29.8
3		70	28.4	28.2	28.9	29.0	28.6
1	April 30	50	29.0	28.5	29.4	29.6	29.1
2		60	28.9	28.6	29.1	29.9	28.6
3		70	28.9	28.9	28.8	29.8	28.6
HCP-2.33							

The grain weight of soybeans "Orzu" was 14.9 gram when sown on April 10 and it was 9.8 grams in the second term and was 5.1 gram lower than the first sowing period. During the last planting period, the weight of legumes was 8.7 gram, which was 6.2 gram less than the first period.

Grain weight of soybeans was 19.1 grams when sown at the rate of 60.0 kg / ha on April 10, while on April 20 it was 13.5 grams and reduced by 5.6 grams compared to the first sowing time. In the last 30-April period, the weight of legumes was 11.2 grams, which was 7.9 gram less than the first period. It was found that with the delay of sowing season, the grain size becomes smaller.

It was determined how long the sowing times had an impact on soybean yields. The number of soybean leaves in April increased by 4.4 in the first planting period during the shunting period, while the number of leaves planted in April increased by 4.7 in relation to the first term by 0.3 in relation to the first term, the number of leaves planted in the last term decreased by 4.2 in relation to the first term.

Table 4 Formation of the harvest elements in soybeans

T.p.	Periods of development				
	Sowing time	Sowing norm	Growing leaves	Flowering	The formation of legumes
1	10.04	50	4.2	10.2	15.4
		60	4.4	10.9	16.1
		70	4.1	8.9	14.4
2	20.04	50	4.5	9.4	15.2
		60	4.7	9.9	15.8
		70	4.1	8.9	14.1
3	30.04	50	4.1	9.3	14.6
		60	4.2	9.7	14.9
		70	3.9	8.8	13.5

The period of formation of soybean legumes on April 10 when planted 60 kg per hectare during the first planting period the number of leaves of the "Nafis" soybean variety was 16.1. This indicator was 15.8 when planted on April 10, which was by 0.3 less than in the first half. The number of leaves in the last period was 14.9, and the number of leaves decreased by 1.2 compared to the first period.

Planting times for the development of soybean leaves were sharply affected, it was found that the number of leaves decreased to 0.3-2.2 when the planting time was delayed. As the norm of sowing in variants increases, the number of leaves decreases.

The organ of the plant that forms the crop is the leaf. The more developed and healthy the leaf is, the more active it is in

photosynthesis, and the more complex organic matter is in the leaf. To predict the crop that will be formed, it is necessary to determine the leaf surface of the plant. The surface of the Leaf was determined in several different ways. In order to determine the surface of the leaf in the soybean plant, a certain circle of incisions from the calculated plants were cut and weighed. In the period of the appearance of legumes in the soybean plant, the leaf surface of the "Nafis" variety was in the option of germinating 60kg per hectare during the first planting period, it amounted to 38 thousand m^2/ha, in the second term-35 thousand m^2/ha. Compared to the first period, there was a decrease of 3 thousand m^2/ha. During the last crop period, the leaf surface was 34 thousand m^2/ha and decreased to 4 thousand m^2/ha compared to the first period. There was a decrease in the size of the leaf surface when sowing 70 kg per hectare. If the growth and development of plants is observed in the norm, it causes the rapid formation of the harvest elements. If favorable conditions are created for the growth of the soybean, the yield will also be high. The state of development of the soybean plant is of great importance, a high yield can be obtained from a healthy high-growing plant. In the process of plant growth, a crop is formed.

Table 5 The size of the leaf surface of the soybean, (thousand m^2 / ha)

T.	Variants			The surface of a leaf, m^2/ha
	The name of the variety	Sowing time	Sowing norm, kg/ha	
1	Nafis	10.04	50	46
2			60	48
3			70	45
1		20.04	50	44
2			60	45
3			70	43
2		30.04	50	43
2			60	44
3			70	40

In scientific observations, the effect of planting periods and norms on the growth of soybeans was observed, during the first planting period in the leaf-bearing period, the share height of the "Nafis" soybeans was 36 cm. When this variety was planted on April 10, the height of the stem was 40.0 CM, which increased by 4.0 cm compared to the first period. At the last term, the height of the stem was 43.0 cm and increased by 7.0 cm compared to the first term. The height of the stem of the soybean variety "Nafis" during the first sowing period in the flowering period was 53 sm. When this variety was planted on April 20, the height of the stem was 58 cm and it increased by 5 cm compared to the first period. When sown in the last term, the height of the stem was 60 cm, with an increase of 7 cm compared to the first term. During the first sowing period in the formation of legumes, the height of the stem of the "Nafis" soybean variety was 60 cm, and there was no difference compared to the first period. When sown in the last term, the height of the stem was 62 cm, which increased by 2 cm compared to the first term. In general, during the 1-2 period of planting, from the period of leaf formation to the formation of legumes, the number of plants increased, the height of the stem increased, and in the last period its differences decreased.

The most effective method of mulching is when we planted black polyethylene film between soybean plants and growing irrigation during the growing season, when we lay black polyethylene film between rows of soybean plants and insert hydrogel crystals into the soil and straw between rows. Then accelerated yields of 11.8 hundredweight per hectare were higher than the crop control option, and grain quality was also improved.

One of the peculiarities of the soybean plant is that most of its varieties, when they reach full maturity, are about 75-85% of the natural spillage of leaves on the stem, which is why soybeans are harvested. In the event of a delay in soybean maturation, the soybean leaves may not fall spontaneously. In these cases, a defoliation procedure can be performed to shed the leaf. Defoliation is done when the shade ripens 80-85%. The consumption of defoliation is determined depending on the amount of the leaf of the soybean.

Using the combine harvester in harvesting the mill by harvesting the soybean grain at once, its reaper is reduced to by 10 cm, the rotation number of the milling drum is reduced to 400-500 times per minute, and the soybean harvester is re-adjusted to harvest.

In full compliance with the above recommendations, when the agro-technical activities of the soybean care are carried out in a timely manner, a qualitative and abundant harvest from it is ensured.

In conclusion, we found it reasonable to sum up the results of many years of research and observations on the plant in the soybeans and describe the following points. Moisture of shade from moderately sandy pastures in wetland soils during the growing season, depending on soil conditions during the growing season: for the first time at an average of 800-950 m^3 / ha, the second time during flowering-ripening, 1000-1200 m^3 / ha for the third time, it is desirable to keep watering once every 15-18 days in order to maintain it. In the care of the soybean in the conditions of Meadow alluvial soils of the Bukhara region prone to salinity, which was formerly irrigated, when the soil received moisture (in medium-sandy soils) is about 70-70-60% compared to the limit field wet capacity, the irrigation system is recommended to water with 1-2-1, sprouting, irrigation norm 815 m^3 per hectare in flowering phase, watering norm 1000-1200 m^3 per hectare in flowering burdock finishing phase, seasonal irrigation norm 3615 m^3 per hectare. The timely implementation of irrigation ensures that the grain is full. When there is a lack of moisture in the area, the soybean grain ripens finely, resulting in a sharp decrease in productivity.

The most effective method of mulching is when we planted black polyethylene film between soybean plants and growing irrigation during the growing season, when we lay black polyethylene film between rows of soybean plants and insert hydrogel crystals into the soil and straw between rows. Then accelerated yields of 11.8 hundredweight per hectare were higher than the crop control option, and grain quality was also improved.

In the "Nafis" variety among the varieties that were tested the soybean grain weight, the grain weight of soybeans was 19.1 grams when sown at the rate of 60.0 kg / ha on April 10, while on April 20 it was 13.5 grams and reduced by 5.6 grams compared to the first sowing time. In the last 30-April period, the weight of legumes was 11.2 grams, which was 7.9 gram

less than the first period. It was found that with the delay of sowing season, the grain size becomes smaller. In other varieties, the above-mentioned condition was observed.

In the period of the appearance of legumes in the soybean plant, the leaf surface of the "Nafis" variety was in the option of germinating 60kg per hectare during the first planting period, it amounted to 38 thousand m^2/ha, in the second term-35 thousand m^2/ha. Compared to the first period, there was a decrease of 3 thousand m^2/ha. During the last crop period, the leaf surface was 34 thousand m^2/ha and decreased to 4 thousand m^2/ha compared to the first period. There was a decrease in the size of the leaf surface when sowing 70 kg per hectare. If the growth and development of plants is observed in the norm, it causes the rapid formation of the harvest elements. If favorable conditions are created for the growth of the soybean, the yield will also be high. The state of development of the soybean plant is of great importance, a high yield can be obtained from a healthy high-growing plant. In the process of plant growth, a crop is formed.

The period of formation of soybean legumes on April 10 when planted 60 kg per hectare during the first planting period the number of leaves of the "Nafis" soybean variety was 16.1. This indicator was 15.8 when planted on April 10, which was by 0.3 less than in the first half. The number of leaves in the last period was 14.9, and the number of leaves decreased by 1.2 compared to the first period. Based on the results of the observations, it is considered acceptable that the soybean for the formation of legumes should be sown in the first ten days of April.

CONCLUSIONS

We conducted observations on some aspects of scientific research on the effect of the duration and norm of planting of prospective varieties of soybeans on the growth and development and yield of medium fertile soil in the same irrigation regime. In particular when the "Nafis" soybean variety was sown on April 10 at 60 kg per hectare, the average yield was -31.8 hundredweight per hectare. On April 30, an average of -29.8 hundredweight per hectare grain yield was obtained in the second sowing period, which was observed to have decreased 3.2 hundredweight per hectare yield when sown in the evening period compared to the first. It was found that the periods and norms of planting in soy varieties greatly influenced the development of growth, and it was observed that the most optimal norm and term is when sowing the seeds of "Nafis" varieties in the first ten days of April and a weight of 60 kilograms per hectare. In this case, it was found that all biometric indicators that confirm the yield are delayed in the planting period, and productivity decreases as the seed norm decreases. In other varieties sown for comparison, the same situation was observed.

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