EFFECTS OF IRRIGATION REGIMES ON HIGH AND QUALITY YIELD OF REPLANTED SOYBEAN CULTIVARS. (IN THE CONDITIONS OF MEADOW GRAY SOILS OF ANDIJAN REGION)

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Annotation: This article highlights the scientific research of modern factors about the seed production system for growing and multiplying the gross potato product and increasing yields, as well as the introduction of irrigation regime.

Key words: irrigation regime, vegetation period, irrigation technique, irrigation technologies, irrigation methods, irrigation duration, irrigation rate, water flow, water use coefficient.

The total water reserve on our planet is 1454.3 million cubic kilometers, and only 3 percent of it is fresh water. Of this 3% water, only 0.3% can be used. Therefore, using it carefully and sparingly is the most important task.

80% of plants, and 90% of some agricultural crops, are made up of water. 4-5 g of water is needed to form 1 g of dry matter. From this point of view, it seems that the plant has an excess of water, but when we consider the water consumption of different crops, we come to a different opinion. Winter wheat is a plant that consumes water very sparingly, it consumes 450-600 g of dry matter, spring wheat - 340-500 g, barley - 300-350, and sorghum - 200-300 g of water. Water consumption of red clover is 310-900 g, but it consumes water slowly. A rice plant consumes 600-800 g even if it is constantly in water.

So, plants use only 0.2% of the water they receive for the formation of organic matter, and the remaining 99.8% goes to evaporation and transpiration.

It should be noted that transpiration is the main means for plants to obtain the necessary nutrients from the soil. Therefore, it is necessary to selectively plant crops in different soil conditions according to the level of water supply.

In order to meet the population's demand for agricultural products, it is necessary to obtain a high yield from crops, at the same time, to achieve low-cost and high-quality raw materials, as well as efficient use of water and nutrients used for their cultivation.

Despite the above-mentioned water problems in the agriculture of our Republic, in the following years, the methods of watering the soybean plant, which have a favorable effect on soil fertility among repeated crops, and the water balance have not been fully studied. However, we considered it appropriate to present the results of scientific research conducted in soil and climate conditions of other countries.

ChDNS – limited field moisture capacity is the most important of soil water properties. ChDNS refers to the maximum amount of water that can be accumulated and retained in the soil for a long period of time due to suction power. This indicator depends on the mechanical and mineralogical composition of the soil, the amount of humus, the state of granularity, porosity and density. Field moisture capacity is of great importance in practical reclamation and irrigated agriculture. It is only when ChDNS is determined that irrigation rates, salt leaching rates, and transpiration rates of highly waterlogged soils can be determined. The best time to determine ChDNS is spring, when the soil has not yet compacted after autumn plowing. Therefore, we determined the ChDNS ability of the soil of the experimental field after wheat (Table 1).

It should be noted that in both varieties of soybeans, irrigation standards and periods were determined according to the same soil moisture. According to the data, the average of the samples taken from 6 points in the 0-30 cm layer was 23.7%. At 30-50 cm, this indicator was 23.8%, at 50-70 cm - 22.6%, at 0-50 cm - 23.9%, and at 0-70 cm - 24.4%. These indicators were used as a basis for

determining the watering norms of soybean varieties at specified soil moisture levels (70-70-60; 70-75-70 and 70-75-75% compared to ChDNS).

Table 1

Limited field moisture yield (ChDNS) of grassland gray soils, in % (2021)

Soil layer, cm	Moisture detection points						Average
	1	2	3	4	5	6	
0-30	23,0	23,4	23,5	23,6	23,5	25.2	23.7
30-50	23,7	23,8	23,0	23,9	23,0	25,1	23.8
50-70	21,9	22,9	22,5	22,8	22,5	22,8	22.6
70-100	20,9	22,9	21,4	21,8	21,7	24,7	22.2
0-50	23,6	23,4	23,8	23,5	23,8	25,7	23.9
0-100	25,3	22,8	22,8	22,9	22,8	26,8	24.0

It should be noted that the duration of watering soybeans planted in repeated cropping conditions mainly depends on the actual moisture content of the soil. This can change depending on the climatic conditions of the year in relation to the mechanical composition of the soil, the organic part and the salinity level.

In our research on crop irrigation, irrigation rates were calculated based on S. N. Ryzhov's formula.

$$M = (W_n - W_m)100\lambda h, \text{ m}^3/\text{га}$$

In this case: Wn is the field moisture capacity in relation to the weight of the soil, %, we wrote about this indicator of the experimental field in section 3.1.1, and ChDNS in the 0-50 cm and 0-70 cm layers was 23.6 and 23.2%, respectively. W_m – soil moisture before irrigation, %

λ – volume weight of soil, g/cm^3

h – considered soil layer, cm

The second irrigation was carried out on August 11, and the irrigation rate was 1100 m3/ha, and the period between irrigations was 27 days. Soil pre-moisture was 70-75-70 in relation to ChDNS. (from 900-650 and 930 m3/ha) seasonal irrigation rate was 2489 m3/ha.

To sum up, in the conditions of meadow gray soils of Andijan region, near the seepage waters, if the seeds of soybean varieties planted as a repeated crop are treated with rhizotorphin at the specified rate and the irrigation system is 1-1-1, the soil moisture before irrigation is 70-75-70% compared to ChDNS. it was observed that optimal conditions were created for the growth and development of plants.

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