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MAINTAINING SOIL FERTILITY AND THEIR EFFECTIVE USE IN RECIPROCATING CROPPING

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Annotation

In the conditions of the soil of Kashkadarya region, the method of economical irrigation of the oil sunflower crop, which has been repeatedly planted in the fields freed from grain crops, is the study of agro-technologies of effective maintenance and the maintenance of soil fertility and their effective use.

Аннотация

Qashqadaryo viloyati tuproqlari sharoitida boshoqli don ekinlaridan bo‘shagan maydonlarga takroriy ekilgan moyli kungaboqar ekinini tejamkor sug‘orish tartibi, samarali parvarishlash agrotexnologiyalarini o‘rganish va tuproq unumdorligini saqlash hamda ulardan samarali foydalanish hisoblanadi.

Аннотация

В почвенных условиях Кашкадарьинской области способом экономного орошения масличного подсолнечника, повторно высаживаемого на полях, освобождаемых от зерновых культур, является изучение агротехнологий эффективного поддержания и сохранения плодородия почв и их эффективного использования.

One of the main problems of today remains the conduct of scientific research on pressing issues facing agricultural science, such as fully satisfying the country's population's need for food products, including vegetable oil, providing livestock with nutritious feed, while maintaining soil fertility, and effectively using the water limit allocated to the regions.

The main purpose of the research is the method of economical irrigation of oilseed sunflower crops repeatedly planted in the fields freed from grain crops in the conditions of the soils of Kashkadarya region, the study of effective agrotechnologies of maintenance and the maintenance of soil fertility and their effective use.

In the southern regions of our republic, hot and sunny days are 220-250 days, and clear, cloudless days are 150-180 days. Therefore, natural conditions are sufficient for planting repeated crops after winter wheat. Based on their economic and social goals, it is desirable for farms to grow pulses and oilseeds as a repeat crop on the fields freed from winter wheat.

Scientific research was carried out on newly developed barren soils of the Kashkadarya region, with a groundwater level of 2.0-2.5 meters, on the territory of the S. Murodov MMTP of the Mirishkor district, on the newly developed barren soils of the medium mechanical composition of the "Rajabov Nurali Kenja ugli" farm.

After the harvest of winter wheat "Tanya" variety, the experimental field was plowed and seasonally leveled. Before planting, reserve moisture was collected by giving 1100-1200 cubic meters of water per hectare. Sowing of the seeds of the "Arleta" soybean variety was carried out in the first ten days of July.

Variants 2 and 3 of the experiment were conducted at moisture levels of 65-65-60% relative to the limited field moisture capacity (LFMC), variants 4 and 5 were conducted at moisture levels of 75-75-65% relative to the FLMC, in the 0-50 and 0-70 cm calculation layers, and variant 1 was used as a control, using the irrigation regime adopted on the farm.

After the soybean plants emerged and the first three sets of leaves appeared, the rows were cultivated with a cultivator to ensure air exchange in the soil and to eliminate weeds.

On the basis of existing methodical manuals, limited field moisture capacity (ChDNS) and volume mass were studied in a layer of soil up to one meter in the experimental field. ChDNS is 17.4% in the 0-30 cm layer of the soil, 18.3% in the 0-50 cm layer, 19.0% in the 0-70 cm layer, and 21.9% in the 0-100 cm layer, and the volume mass is 1.28 according to the above situation; 1.34; 1.37; It was 1.39 g/cm3.

Soil water permeability, porosity, moisture capacity, thermal behavior, etc. depend on its mechanical composition. The agrotechnical processes carried out in the field maintained by repeated planting of legume after winter wheat had different effects on the soil water-physical properties of the repeated legume soybean.

The results of agrophysical monitoring of the soil, which was studied in general tightness before re-sowing, showed that the bulk density in the 0-30 cm layer of the field was 1.26 g/cm3, and in 0-50 cm - 1.30 g/cm3. By the end of the experimental period, the smallest change in soil mass among the variants was observed in variants 2 and 3, and it was 1.35 g/cm3 in 0-30 cm, and 1.38 g/cm3 in 0-50 cm. The largest change in bulk density was observed in variant 1 of the experiment and was 1.42 and 1.43 g/cm3, respectively. In variants 4-5 of the experiment, the change in bulk density occupied an intermediate position.

Soil permeability is inversely proportional to bulk density, and at the beginning of the experiment, the soil permeability was -93 mm/ha or 0.26 mm/min for 6 hours. By the end of the experiment, the water absorption capacity of the soil decreased in all variants. The largest decrease in water permeability was observed in variant 1, irrigated under conditions of repeated crop production, and amounted to 56 mm or 0.15 mm/min for 6 hours, and a small change was observed in variants 2 and 3, irrigated in the 0-50 and 0-70 cm calculated soil layers, within the range of 65-65-60% relative to the NWO, and amounted to 64 mm or 0.18 mm/min for the recorded time.

In the first variant of the experiment, when soybean irrigation was carried out under production conditions, the amount of irrigation water per hectare was 3080 cubic meters, in the second variant, when irrigated with 65-65-60% of the NDRC, it was 2082 cubic meters in the 0-50 cm calculation layer, in the 0-70 cm calculation layer (variant 3), it was 2269 cubic meters, in the 0-50 cm calculation layer (variant 4), when irrigated with 75-75-65% of the NDRC, it was 2726 cubic meters in the 0-70 cm calculation layer, and in the 0-70 cm calculation layer (variant 5).

According to the water consumption of the fast-maturing soybean variety "Arleta", in order to obtain 1 centner of soybean grain yield in the 3rd variant of the experiment, 93 cubic meters of water were required. In the other variants (variants 1, 2, 4 and 5), 114-175 cubic meters were required. The highest soybean grain yield per cubic meter of water was obtained in the 3rd variant (1.25 centners), and the lowest yield was obtained in the other variants (0.70-1.06 centners).

When analyzing the yield of whole grains from the harvested pods, the grain yield ranged from 68.3% to 71.1%, with the highest grain yield occurring in variant 3 of the experiment (70.6%), and the lowest yield in variant 1 (66.7%).

The smallest unit in the weight of 100 grains and 1000 grains was 114 grains and 78.7 grams in variant 1 and correspondingly, while the largest unit was observed in the optimal irrigation regime of the experiment (variant 3), when the calculated layer was 0-70 cm, and was 129.2 grains and 95.6 grams.

When analyzing the yield obtained from the experiment, the highest grain yield was achieved in the 3rd variant of the experiment, i.e., with a calculated layer of 0-70 cm at a soil moisture content of 65-65-60%, irrigated 3 times during the operation period, and the grain yield was 28.6 c.

The lowest soybean grain yield was observed in experiment variant 2, in the 0-50 cm soil layer, when the soil moisture before irrigation was maintained within the range of 65-65-60% relative to the NRV, and the total grain yield was 22.7 c/ha. Grain yield indicators in all other experiment variants occupied an intermediate position.

In conclusion, it should be noted that the repeated sowing of the early-maturing soybean variety "Arleta" on the areas cleared from winter wheat allowed to improve the water-physical properties of the soil, to save water consumption (0.93 cubic meters of water consumption per 1 c. of grain), to increase productivity (to obtain the highest yield per hectare - 26.7 c. / ha). The net profit from one hectare of land is 2875 soums, the profitability level is 54.6%.

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