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Seasonal and Irrigation Rates of Rice Planted as a Repeated Crop after Winter Grain Crops in the Conditions of Light Gray Soils of the Andijan Region

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Abstract: This article describes the results of scientific research on the introduction of water-saving methods and the introduction of irrigation regimes, one of the main factors in increasing gross production and increasing productivity in rice varieties grown as a secondary crop.

Keywords: *watering regime, vegetation period, watering technique, watering technoloques, watering types, duration of watering, limit of watering, waste of water, coefficient of water usage*

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Introduction. In order to ensure food security in a number of developed rice-growing countries around the world, grain quality is improving and high yields and economic efficiency are being achieved through the creation, selection, rational placement of varieties suitable for soil and climatic conditions, scientifically based application of advanced resource-saving technologies.

Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated March 29, 2019 No 259 "On rational placement of agricultural crops and forecast volumes of production for the harvest of 2019" and the Cabinet of Ministers of the Republic of Uzbekistan dated December 12, 2019 No 986 "Additional measures for sustainable development of rice" This research will to some extent serve in the implementation of the tasks set out in the Resolution "On the Government of the Republic of Kazakhstan", as well as in the relevant regulations.

In Uzbekistan, rice is also important and one of the main food resources of the population. According to official data, the average yield of rice per hectare in the Republic of Uzbekistan in recent years does not exceed 35-37 quintals. One of the main reasons for this is the lack of water, and the second is the continuous cultivation of this crop in swamps and barren lands near the surface of the groundwater, as well as the lack of recommended types of mineral fertilizers and the widespread use of advanced agricultural technologies.

In order to fulfill the above-mentioned tasks, it is important to improve the existing agro-technologies in rice cultivation, the introduction of a system of theoretical and practical bases for the widespread use of these innovative technologies in connection with the needs of the heads of farms.

In order to fulfill the above tasks, seedlings of “Iskandar (Alanga-3)” and “Guljahon (T-5)” varieties of rice, planted as a secondary crop after autumn grain crops in light gray soils of

"Burahima ona" farm of Pakhtaabad district of Andijan region, were identified by seedlings. the most optimal irrigation periods, seasonal and irrigation norms of cultivation in the farming system were determined. The experimental system is presented in (Table 1).

EXPERIMENTAL SYSTEM

Table 1

№	Varieties	Options
1.	Iskandar (Alanga-3)	The traditional method of control
2.		The water fills the floor and does not come out
3.		The floor is filled with water and 50 percent of the water is discharged
4.		Water with a thickness of 10-15 cm on the floor is kept for 9 days, 6 days the water does not open.
5.		Water is kept on the floor at a thickness of 10-15 cm for 4-6 days, then stopped, kept at a thickness of 10-15 cm from germination to collection, water is reduced to 5 cm during collection, water is kept at a thickness of 10-15 cm until the end of vegetation .
1.	Guljahon (T-5)	The traditional method of control
2.		The water fills the floor and does not come out
3.		The floor is filled with water and 50 percent of the water is discharged
4.		Water with a thickness of 10-15 cm on the floor is kept for 9 days, 6 days the water does not open.
5.		Water is kept on the floor at a thickness of 10-15 cm for 4-6 days, then stopped, 10-15 cm thick from germination to collection, water is reduced to 5 cm during collection, water is kept at a thickness of 10-15 cm until the end of vegetation during milk-wax ripening .

The norm of seasonal irrigation spent on the cultivation of rice varieties.

They react differently to agricultural crops depending on water supply conditions. The maximum yield of all crops, especially rice, is achieved by continuous water supply during all periods of plant growth and development, subject to the laws.

In arid zones, the water regime required for agricultural crops can only be achieved through irrigation. The rate and number of irrigations, depending on the type and navigation of the plant, climatic, hydrogeological and soil-reclamation conditions, Ryjov S.N. the allowable humidity is determined by the formula;

$$m = \left(W_{ЧДНС} - W_{ФАК}\right)100\ Jh + \kappa \qquad \text{m}^3/\text{ha}$$

In this case, $W_{чднс}$- limited field moisture capacity of the soil, in% of the weight of the soil;

$W_{фак}$- actual moisture of irrigated soil, in% of soil weight;

J- bulk density of soil, g / sm^3;

h- calculated layer, m;

k - water consumption for evaporation during irrigation, m^3 / ha (10% of the lack of moisture in the calculated layer);

The actual number of irrigations depends on the pre-irrigation soil moisture given in all experiments, the biological characteristics of the crops grown, and the rate of irrigation.

Water consumption of rice varieties.

To study the amount of water used in the cultivation of rice varieties studied in the experimental field, the theoretical water demand of rice was first determined (20000 m3 / ha) and irrigation was carried out on the basis of the options adopted by the experimental system. At the same time, the water standards given to the experimental options areas and the discharged water were measured using the Thompson water meter. In the control option, the seasonal irrigation rate was 15552 m^3 / ha, the discharge was 2800 m^3 / ha, the water was stopped at the floor 10-15 cm thick after 4-6 days, 10-15 cm thick from germination to collection, during the collection period 5 Seasonal irrigation rate in 5 variants, water discharge to 11000 m^3 / ha, 1659 m^3 / ha, seasonal irrigation norm compared to this control variant 4552m^3 / ha, sewage output 1150m^3 / ha water was saved. (Table 2)

The norm of seasonal irrigation used for growing rice varieties is m^3 / ha

Table 2.

Options Seasonal irrigation rate, m^3 / ha	Options Seasonal irrigation rate, m^3 / ha	Options Seasonal irrigation rate, m^3 / ha
1.The traditional method of control	15552	2800
2.Water is filled to the floor and does not come out	8294	-
3. The water is filled to the floor and 50 percent of the water is discharged	10300	930
4. 10-15 cm thick water is kept on the floor for 9 days.	9332	933
5. Water on the floor is kept at a thickness of 10-15 cm for 4-6 days, then stopped, kept at a thickness of 10-15 cm from germination to collection, water is reduced to 5 cm during collection, water at a thickness of 10-15 cm until the end of vegetation will be held.	11000	1650

In the light gray soils of Andijan region, water was kept on the floor for 10-15 days at a thickness of 10-15 cm for 4-6 days to obtain a high quality crop of rice, which was planted as a second crop after the autumn grain crops. , the water is reduced to 5 cm during the collection period, the seasonal irrigation rate is saved at 4552 m^3 / ha compared to the traditional method of irrigation when the water is kept at a thickness of 10-15 cm during the milk-wax ripening period until the end of the vegetation.

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