

UDC: 633.18/631.17.

THE EFFECT OF DIFFERENT WATER THICKNESSES ON SEED AND MILLED RICE YIELD OF “GULJAHON”, “ISKANDAR” AND “LAZURNIY” RICE VARIETIES

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Annotation. *The effect of different water thicknesses on seed and milled rice yield during the growth periods of rice varieties is studied in this article, and it is discovered that planting the "Iskandar" variety in rice fields and keeping 15 cm of water thickness gives the best results, with seed yield of 77,1% and milled rice yield of 72,1%.*

Key words: *rice, water, seeds and milled rice, linear, developmental times, varieties.*

Introduction: Taking into account that the development of rice cultivation is an urgent task, agricultural workers have been paying serious attention to this field in recent years, and efforts are being made to carry out both extensive and intensive ways of development. According to the decision of the President of the Republic of Uzbekistan dated February 2, 2021, “On Measures for the Further Development of Rice Cultivation” № PD-4973, wide use of water-saving technologies in rice cultivation, planting of 20% of rice fields by seedling method, introduction of a leveling system using laser equipment in 50%, and tasks of planting rice seeds in modern seeders in 30% are set. [1].

Level of study of the problem. Rice is the staple food for about half of the world's population. Rice is characterized by its nutritional value and quick and complete digestion in the human body. Rice and its products contain protein, fat, starch, ash, fiber and phytin. One kilogram of rice contains 4000 calories. When rice is milled, it yields an average of 54% rice, 10% milled grain, 13% rice bran, 3% flour and up to 20% bran. When rice is milled, the grain is rubbed, and as a result, the quality of the rice changes. As a result of friction, the protein content decreases from 8.44 to 7,75%, the oil content from 1,82 to 0,53%, the ash content from 1,29 to 0,64%, and the tissue from 0.35 to 0.18%. [2; p. 118-128].

In the course of the study, there are conflicting opinions about the effect of the water thickness of rice planted in the field on productivity, seed quality and biochemical composition. In the conducted experiments, it was noted that the biotechnological parameters of the seed depended on the beneficial air temperature (temperature, harvest, sowing period, seed rate, amount of fertilizer, amount of rain and air humidity).

Research aim. 3 early-ripening “Guljahan”, mid-ripening “Iskandar” and late-ripening “Lazurniy” varieties were planted in the field, with different water thicknesses 5; 10; consists of studying the effect of 15 and 20 cm.

Research methods. It was carried out on the basis of methodological manuals such as “Methods of conducting field experiments”, “Methodology of field experiments” (B.A.

Dospekhov, 1985) and “Rice cultivation in Uzbekistan up to the height of water-saving use (2019) methodical instructions” [4].

Research results. The seed yield of the early “Guljahon” rice variety was 66.3% when the water thickness was 5 cm, 76,6% when the water thickness was 10 cm, 76,7% when the water thickness was 15 cm, and 76,8% when the water thickness was 20 cm in the experiments, and rice yield was 66,9% when the water thickness was 5 cm, 71,2% when the water thickness was 10 cm, 71,2% when the water thickness was 15 cm, and 71,1% when the water thickness was 20 cm (see Table 1).

When the water thickness was 5 cm, the seed yield of the rice variety "Iskandar" was 68,7%, 71,7% when the water thickness was 10 cm, 77,1% when the water thickness was 15 cm, and 78,4% when the water thickness was 20 cm. Milled rice yield was found to be 68,2% in 5 cm water thickness, 72,0% in 10 cm water thickness, 72,1% in 15 cm water thickness, and 72,0% in 20 cm water thickness.

The seed yield of the “Lazurniy” variety of rice was 65,3% when the water thickness was 5 cm, 71,1% when the water thickness was 10 cm, 75,3% when the water thickness was 15 cm, and 75,2% when the water thickness was 20 cm. Milled rice yield was 61,2% at 5 cm water depth, 63,3% at 10 cm water depth, 64,0% at 15 cm water depth and 64,1% at 20 cm water depth. In all studied rice varieties, the seed quality and rice yield increased as the water thickness increased.

Table 1
Effect of different water thicknesses on seed and milled rice yield,

Varieties	Sample weight, g	Water thickness, cm				The number of grains in the sample, pcs	Water thickness, cm			
		5	10	15	20		5	10	15	20
		Milled rice, %					Milled rice, %			
“Guljahon”	1000	69,3	76,6	76,7	76,8	100	66,9	71,2	71,2	71,1
“Iskandar”	1000	68,7	71,7	77,1	78,4	100	68,2	72,0	72,1	72,0
“Lazurniy”	1000	65,3	71,1	75,3	75,2	100	61,2	63,3	64,0	64,1

Among the studied rice varieties, it was observed that the rate of seed yield was 5,2-7,2% lower in the “Lazurniy” variety compared to other varieties. One of the main reasons for this is due to the variety's botanical (Indica) type and biology, which is long-grained and highly glassy.

Conclusion: In all studied rice cultivars, it is found that seed quality and milled rice yield increased with increasing water depth. The seed and milled rice yield of the middle-ripe “Iskandar” rice variety was 77,1% and 72,1%, respectively, when the water depth was 15 cm in the paddy fields. Among the studied rice varieties, it was observed that the rate of seed yield was 5,2-7.2% lower in the “Lazurniy” variety compared to other varieties. One of the main reasons for this is due to the variety's botanical (Indica) type and biology, which is long-grained and highly glassy.

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