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WORK CARRIED OUT IN THE KARAKALPAK ASSR ON IMPROVING RICE VARIETIES AND APPLYING NEW TECHNOLOGIES

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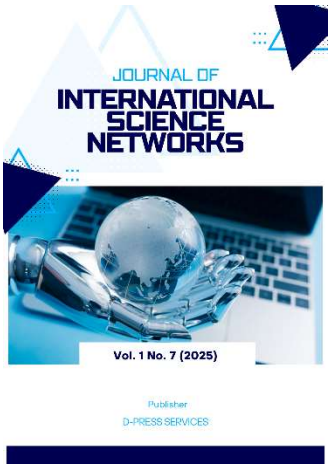

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ANNOTATION:

This article covers the scientific and practical work carried out in the Karakalpakstan ASSR on the development of rice cultivation, improvement of existing rice varieties and introduction of new technologies. The study analyzes the climatic conditions of the region, the possibilities of rational use of land and water resources, as well as the evolution of agrotechnical measures used in rice cultivation. The results of tests conducted on local and imported selection varieties during the Karakalpakstan ASSR, the creation of high-yielding, disease-resistant and water-saving varieties are developed on a scientific basis.

KEYWORDS:

Karakalpakstan ASSR, rice cultivation, rice varieties, selection work, variety testing, yield, disease resistance, water-saving technologies, irrigation system, agricultural technology, mineral fertilizers.

In Karakalpakstan, during 1957-1980, sharp changes took place in the field of rice cultivation. During this period, great attention was paid to the creation of new, promising rice varieties and their introduction into production, as well as the application of advanced agricultural technologies, as one of the main directions for increasing yields.

As a result of breeding work, new varieties adapted to local conditions, high-yielding, and disease-resistant were created. These varieties were distinguished by higher grain quality and yield compared to the previous ones. Increased rice yields were achieved through the introduction of new varieties, as well as the improvement of seed production.

The application of new technologies included agrotechnical measures such as land preparation, sowing, irrigation, and fertilization. Land leveling with scrapers, new irrigation methods (mainly advanced furrow irrigation methods), and scientifically based norms for the application of mineral fertilizers have been introduced.

In addition, special attention was paid to the timely and high-quality implementation of measures to combat pests and diseases in rice fields. The use of modern pesticides and biological preparations ensured the preservation of the harvest. The level of mechanization of agriculture has increased. New equipment, tractors, and combines were used.

The study of the level of rice cost in the republic showed that it has a tendency to increase in collective and state farms. In 1958-1964, the cost of rice in collective farms of Uzbekistan increased by almost 11%, and in state farms - by 19%. The abundant waters of the Amu Darya were an invaluable resource for Karakalpakstan, the main guarantee of the development of rice farming. Thanks to the construction and reconstruction of existing irrigation canals and structures, the possibility of rational water use has been created. This, in turn, contributed to an increase in rice yields.

In 1963, the area under rice cultivation was approximately 5.3 thousand hectares. By November 22, 1963, the republic's rice-growing farms had successfully fulfilled the state plan for rice cultivation and harvesting. They delivered 659 thousand poods of rice to the state, which is 236 thousand poods more than in 1962. Rice farmers committed to delivering an additional 91,000 poods of rice and fully replenishing their seed funds. In 1963, the construction of the "Ravshan" canal, which was of great importance for the development of new rice fields, was successfully completed at the Khojeyli Production Department. In 1964, it was planned to complete the construction of the Kizketken pumping station, which would allow irrigating cotton fields and developing thousands of hectares of new land for rice and other grain crops in the northern districts of Karakalpakstan.

At the meeting on April 29, 1969, special attention was paid to rice seed production and the

cultivation of hybrid corn seeds. It was noted that the yield of rice and corn is low, the main reason for which is the shortage of varietal seeds. Elite rice seeds were to be grown at the branch of the Rice Institute of Uzbekistan, and the first repeat production - at the "XXII Party Congress" and "October" state farms. However, it was noted that these state farms are not fulfilling their duties.

The Council of Ministers of the Karakalpak ASSR from 1970 made it mandatory to sow rice crops only with varietal seeds. It is profitable for state farms to grow varietal rice seeds, as the farm receives an additional varietal bonus for this. Only the net weight of rice submitted to the state is paid for, and a discount is made for waste. Therefore, every rice-growing state farm had to have its own seed cleaning point.

The branch of the Rice Institute of Uzbekistan was supposed to provide elite seeds to seed farms starting in 1970. In 1969, it was necessary to import 350 tons of high-quality rice seeds for planting in seed farms. It was instructed to strengthen the material and technical base of state farms for the production of varietal rice seeds, to build mechanized threshing floors with a full set of grain cleaning machines, to build grain warehouses in sufficient quantities, and to organize seed laboratories.

On January 29, 1970, the Karakalpak Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Karakalpak ASSR adopted a resolution on the reorganization of the Karakalpak branch of the Uzbek Rice Research Institute. The branch will be relocated to the territory of the state farm named after the 50th Anniversary of the VLKSM in the Nukus district.

The "Karakalpakshalyvokhstroy" department was instructed to allocate 300 hectares of land to the branch, allocate space for laboratory, residential and production facilities, provide housing for branch employees, and begin construction in 1971. From the Council of Ministers of the Uzbek SSR, the Ministry of Agriculture of the Uzbek SSR was instructed to organize the construction of the branch, provide scientific personnel, and open a plant protection department. With the launch of the Karakalpak branch of the Rice Research Institute, the task was set to create new varieties suitable for the region's climate.

Also, there was a need for local rice factories to convert grown rice into rice. They were planned to be built along the railways passing through the territory of Karakalpakstan for loading and unloading rice.

Construction of the "Karabayli Rice" plant on the Khojeyli-Kungrad railway began in January 1974 and was commissioned in 1979. The construction of the "Qonliko'l Rice" plant was also undertaken in February of the same year and commissioned in 1980. Thus, the 70s of the last century became a

turning point in the rice industry for Karakalpakstan. It is no exaggeration to say that the construction and commissioning of two large factories became an important step in ensuring the country's food security.

The construction of these plants not only increased production capacity, but also created the possibility of turning rice into rice in the republic itself. The commissioning of the Karabayly and Kanlykul plants strengthened Karakalpakstan's position as a leading rice-growing region.

According to information provided to the Council of Ministers of the Uzbek SSR on February 16, 1970, by the secretary of the Karakalpak Regional Committee of the Central Committee of the Communist Party of Uzbekistan, K. Kamalov, and the Chairman of the Council of Ministers of the Karakalpak ASSR, E. Aitmuratov, in order to increase rice production, it is necessary to develop scientifically based recommendations for rice cultivation in the lower reaches of the Amu Darya River (including the creation of new varieties, establishing irrigation regimes, and the use of fertilizers and herbicides). In this regard, it was proposed to establish an independent Rice Research Institute in the Karakalpak Autonomous Republic. This initiative in 1970 was a strategic step aimed at linking science with production in order to develop rice production. The proposal to establish the Rice Research Institute in Karakalpakstan was aimed at developing scientifically based methods of rice cultivation, taking into account the specific conditions of the region.

According to J. Palvanov, "in the climatic conditions of Karakalpakstan, it is necessary to combine early, medium, and late-ripening rice varieties. Late-ripening varieties are planted in early sown areas, and early-ripening varieties in late sown areas. The mid-season varieties UzROS-269 and UzROS-59 have been regionalized and are high-yielding (65-70 c/ha) and high-quality for pilaf. But they have disadvantages: when more than 50 centners are harvested, they lie down, and when UzROS-269 harvests late, they fall off. As a result of these shortcomings, yield losses amount to 5-6 centners per hectare. Due to the shortage of irrigation water, the early-ripening Kuban-3 variety is planted in some areas. J. Palvanov's analysis reveals important aspects of the development of rice cultivation in the climatic conditions of Karakalpakstan. When selecting rice varieties, it is necessary to take into account the vegetation period, adapt to sowing dates, and coordinate factors such as yield and product quality.

In accordance with the resolution of the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR dated January 21, 1971, No. 31 "Issues of Rice Growing Development in the Karakalpak ASSR," within 2 years (1971-1972), rice cultivation was to be fully transferred to high-quality

varietal seeds. For this purpose, since 1971, the specialized state farm named after the "XXII Party Congress" has been engaged in the cultivation of high-reproduction seeds of regionalized rice varieties in order to fully supply all rice farms of the Karakalpak ASSR with seeds by 1973. Also, during 1971-1972, ZAR-5 grain cleaning lines were installed in each state farm. The success of this initiative demonstrated the importance of focusing on the scientific foundations of rice cultivation, introducing modern technologies, and producing seeds adapted to local conditions.

In 1973, 85 out of 286 brigades of specialized state farms harvested less than 30 centners per hectare. The main reason for the low yield in the rice-growing state farms was the poor organization of work in the seed-growing brigades, as well as the untimely and poor-quality preparation of the land for rice cultivation. As a result, rice was mainly sown with simple seeds and varietal mixtures, and the sowing period was sometimes extended to the beginning of June instead of completing the optimal period - May 5. The situation that arose in 1973 indicates serious problems in rice farms. Low yields were primarily due to organizational and technological shortcomings. Factors such as the sluggishness of seed production teams, delays in land preparation and poor quality work, as well as insufficient control over seed material, negatively affected the harvest.

In this regard, the Ministry of Agriculture of the Uzbek SSR set tasks for the UzNIIRS Institute to carry out work and develop appropriate measures for the selection of new varieties localized in the country, early-ripening, selected in recent years, yielding a rich harvest in the conditions of Karakalpakstan and allowing for harvesting at the end of August or the beginning of September. These tasks have been partially completed. Rice varieties imported from other regions of the Union were tested. However, they did not yield the expected results.

In the resolution of the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR dated December 29, 1973, "On Measures to Increase Grain Production in the Republic," the Ministry of Agriculture of the Karakalpak ASSR, its local bodies, party and Soviet organizations, and the heads of collective and state farms were tasked with taking measures to improve grain seed production and organizing specialized seed brigades in collective and state farms. It was emphasized that all farms should ensure that grain crops are sown only with varietal seeds of their own production.

According to the data of the State Commission for Variety Testing of Agricultural Crops under the Ministry of Agriculture of the USSR, based on the results of rice variety testing in 1971-1975, the "UzROS 59" variety in the Kungrad variety plot of the Karakalpak ASSR yielded a maximum yield of 70.7 centners per hectare, and an average yield of 59.0 centners per

hectare. This indicates that the yield of this rice variety is lower than that grown in the Gurlan variety plot of the Khorezm region (87.9 centners at the maximum level, 74.6 centners at the average level).

In the 1980s, leading agricultural specialists from the central cities A.V. Kardapoltsev, B.G. Shtepa, V.I. Chilap, V.P. Konokhov, and I.V. Kolyadin visited the Karakalpak ASSR to analyze the possibilities of further development of rice cultivation. They familiarized themselves with the process of rice cultivation in several state farms in the territory of the Nukus and Leninabad districts.

When specialists spoke with the heads of district party committees, agronomists, directors of state farms, heads of rice-growing brigades, and combine operators in all farms, a unanimous opinion was expressed that when sowing the high-yielding variety "UZROS-59" in the climatic conditions of the Karakalpak ASSR, the SKD-5R combine should not be assigned a service load of more than 25 hectares per season. It was emphasized that the reason for this is to ensure timely and high-quality harvesting of the crop, thereby preventing large losses of this extremely valuable crop.

In order to improve the organizational work in rice cultivation, the Karakalpak Regional Party Committee has assigned specific tasks to party organizations in districts and state farms this year. Along with the high-yielding rice variety "UZROS-59," the growing season of which lasts up to 130 days, early-ripening varieties will be sown on up to 20% of the sown area. As a result, harvesting begins 2-3 weeks earlier, and the possibility of further organizational development of the harvesting process is created in the period before harvesting the main variety. This measure is very useful and is important in solving problems that arise during the harvest season. After inspecting individual farms, the issue of increasing rice production in the Karakalpak ASSR from 360,000 tons in 1981 to 500,000 tons in 1982 alone, and to one million tons by 1985, was discussed. The plan to increase rice purchases from 260 thousand tons in 1981 to 360 thousand tons in 1982 was also considered.

In the 70s, the Center took measures for the further development of rice cultivation in Karakalpakstan and only in 1970-1975 demanded the delivery of twice as much rice to the state as in previous years. Thus, the farmers of Karakalpakstan faced great difficulties in the development of rice farming, especially due to the shortage of equipment, transport, the lack of drainage networks and a production base, and the lack of specialists. For example, due to the lack of a production base, reinforced concrete and other building materials were imported from Tashkent, Syrdarya, and other regions. This situation, along with the high cost of construction and installation works, led to great difficulties in opening new lands for rice cultivation. Therefore, rice farming was forced to continue to

sow rice even in fields without engineering.

The breeding department conducted research on the development of new rice varieties suitable for the local climate. By 1980, the "Nukus-I" rice variety was created (vegetation period 110-115 days, yield 60-70 c/ha). Since 1981, it has been tested at variety testing sites. An important role was played by the branch of the Rice Research Institute of the Uzbek SSR in the Karakalpak ASSR. The "50th Anniversary of the VLKSM" state farm was transferred to the institute, and the task of providing it with seed material was assigned to it. The branch was provided with the necessary resources, a scientific project was developed, and funding was increased.

Since rice is a new crop for the northern regions of the republic, the Karakalpak branch in 1980 selected 39 best samples of rice seeds (11 medium-ripening, 28 early-ripening). The "Nukus-1" variety submitted for state trials showed an average yield of 3.6 centners higher than the "Uzbekistan-5" variety. The tested sample "Otbor-6" was 2.4 centners higher than the "Uzros-59" variety. The branch conducted research on improving rice varieties, studying the influence of water regimes and nitrogen fertilizers.

On December 6, 1980, the Regional Committee of the Communist Party of Uzbekistan, the Cabinet of Ministers of the Karakalpak ASSR, adopted a resolution on measures for the radical improvement of rice and corn seed production in the Karakalpak ASSR. Considering the seriousness of the situation with rice and corn seed production in the Karakalpak ASSR, this decision was a decisive step towards improving the situation. Emphasizing the paramount importance of providing farms with high-quality planting material, the document is aimed at radically improving the seed production of regionalized varieties and hybrids, which are the basis for increasing yields and fulfilling planned indicators.

The resolution defines specific measures and responsible persons, creating a clear structure for the implementation of the assigned tasks. The assignment of land, equipment, and resources to seed production teams, as well as the allocation of necessary fertilizers and herbicides, is aimed at ensuring favorable conditions for growing high-quality seeds. The appointment of specialized farms, such as the "50th Anniversary of the VLKSM" and the "Chapayev" state farms, emphasizes a strategic approach to growing rice seeds for the republic's domestic needs.

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