

## **USING LOCAL TECHNOLOGIES IN THE PROCESS OF RICE DRYING**

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<b><i>ABSTRACT</i></b>	<b><i>KEYWORDS</i></b>
The article provides information on improvisation of agricultural lands in Uzbekistan, the using local technologies in the cultivation of rice, protecting rice from external factors during the drying process.	agriculture, products, land, enterprises and organizations, crops, hectares, rice, grain, roots.

Uzbekistan is conveniently located in Central Asia. It has produced a wide range of agricultural products that have long been considered essential for humanity. Because, the natural and climatic conditions in this region are sufficient. In particular, the annual effective temperature in the country is 26-30 °C, with more than 3,600 hours of sunshine, which allows to harvest several times a year. The total area of Uzbekistan is 44.4 million hectares (2004), of which 50.8% are used by various agricultural enterprises, organizations and farms: the sum of which is the country's agriculture. Its main goal is to meet the needs of the country's population in consumer goods and the processing industry in raw materials with the products produced in the industry. For this:

- planting of high-quality agricultural products that meet the needs of the population;
- meet the needs of processing enterprises in agricultural products.

At present, the industry produces more than 95% of consumer goods. They include plant and animal products. In 2004, 26.8% of the gross domestic product of the country was created in agriculture. This year, 17.1% of the country's GDP was created in all industries, and 4.5% in construction. The figures show that the role of the agricultural sector in the country's economy is huge. This year, all types of entrepreneurs engaged in agriculture have created a gross output of 4732 billion sums. It mainly produces 3535.4 thousand tons of cotton, 6017.1 thousand tons of grain, 3315.9 thousand tons of

vegetables, 846.3 thousand tons of fruits, 996.3 thousand tons of meat, 4280 thousand tons of milk, 674.8 thousand pieces of korakul sheep hide, 1860.3 billion eggs and other agricultural products.

About 31% of the labor force employed in the economy of the country is involved in the production of all types of agricultural products. But two-thirds of the total population lives in the villages. All products produced 26 mln. hectares of agricultural land, of which 3695.7 thousand hectares are arable land.[1]

As of 2003, the rice planting area in Uzbekistan is 101.3 thousand hectares, the yield is 28.3 c/ha, and the gross harvest is 287,000 tons. What is rice? And in which countries is it grown? Also, what technologies have been used?

Rice (*Oryza*) is a family of annual and perennial cereals. About 20 species grow mainly in the tropics and subtropics of South and East Asia, Africa, the Americas, and Australia. In agriculture, in the warmer regions of the tropics, subtropics, and temperate zones, the annual crop is Sh. (*O. sativa*) type is planted. One of the oldest food crops. It was planted in Southeast Asia 7,000 years ago. The most ancient sites of rice cultivation are India and China. In Central Asia, it was cultivated in the 3<sup>rd</sup> -2<sup>nd</sup> centuries BC, in Europe in the 8th century, and in America in the 15<sup>th</sup>-16<sup>th</sup> centuries.

In West Africa, bare-grained or African rice is also grown, while wild-growing rice (*O. punctata*) and short-tailed rice used for food.

Rice in the world. Arable land is 155.5 million ha (cultivated in more than 115 countries), yield is 38.4 c/ha, gross yield is 596.4 mln. t (1999). Home rice cultivated countries: China (31.7 million hectares, yield 63.2 c/ha, gross yield 200.4 million tons), India (44.8 million hectares, yield 29.2 c/ha, gross yield 131.2 million tons), Indonesia (11.6 million tons, yield 42.9 c/ha, gross yield 49.5 million tons) (1999). In Uzbekistan, the sown area is 101.3 thousand hectares, the yield is 28.3 c/ha, the gross yield is 287 thousand tons (2003). In addition, Bangladesh, Vietnam, Myanmar, Philippines, Brazil, Pakistan, Cambodia, Japan, USA, Korea, Southern Ukraine, Shim. Rice is also grown in the Caucasus, the Lower Volga, Kyrgyzstan and Kazakhstan.

The root of the city is a poplar root, long (up to 1m). Stems straw, 50 cm to 3–5 m long. It usually produces 3-5 or more stems when planted sparingly and when fed a lot. The stems of non-dormant varieties are strong. The leaves are green, reddish or purple, glabrous, 10-30 cm long, self-pollinating. Single-flowered spikes are located on the branches of the 2<sup>nd</sup> order. Fruit peeled (curtain) grain; long narrow grain (Indian rice) or round wide (Japanese rice); white, vitreous, semi-vitreous, or unsaturated when broken. 1000 grains weigh 26-45 g. As a result of centuries of interbreeding of different species and varieties, rice varieties and forms suitable for the soil conditions of each country have emerged.

Spring rice is a heat-loving and light-loving short-day plant, the seeds germinate at a soil temperature of 10-12°, grow well at 22-27°. Vegetation period is 120-130 days (100-145 in Uzbekistan), Sh. irrigated (irrigation norm 16-24 thousand m<sup>3</sup>/ha). During the collection period, the pipe is pressed with water to a thickness of 5-25 cm. Water is released during wax cooking. Rice grows well in black, chestnut and marshy soils. [2]

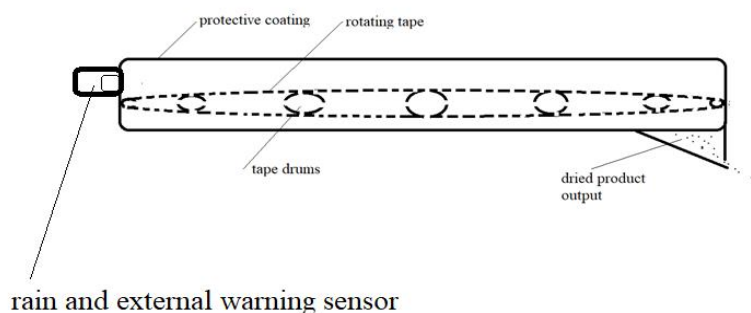
Rice is one of the most valuable food crops. It is the world's second largest agricultural production after wheat. In 2004, the world's rice acreage was 153.2 million hectares. The main rice-growing countries in Southeast Asia are Burma, India, Indonesia, China, Thailand and the Philippines. Overall, part of Asia accounts for 90% of world rice production. 90% of the world's rice is grown here. For 15 years, rice yields have increased by 30% for this purpose.

- After growing rice, we dry it using various modern technologies for processing. One such device is this year's rice product from TCT Rice LLC, which is fully processed in the cluster itself. For this purpose, a project worth 14 billion sums - "Rice Processing and Storage Complex" was built on the territory of "Surum" Farm in Lower Chirchik district.

- The construction of a modern plant and the installation of the necessary technological equipment are currently being completed. In other words, the equipment worth 1.697 million Euros imported from the Turkish company Yashar Makina is being installed by foreign experts. The plant uses drying and processing technologies for 10 tons of rice per hour and 15,000 tons per season. [3]

However, such technologies pose a problem for small rice farmers in purchasing equipment, as devices are expensive for them. In addition, the lack of localization of such structures has led to a sharp increase in the cost of production. In case of damage, the main parts will be purchased from abroad and a repair specialist will also be brought in from abroad. This leads to excessive costs.

Given these problems, the proposed device will be manufactured locally. This device works 100% automated. Basically, during the drying of rice, it is saturated with sunlight and then sent to a rice processing plant. If a number of events related to rain and other water during the drying process affect the drying of the rice, the sensitive sensors are activated and the protective caps are activated. The protective caps are then closed to keep the rice from drying out. In this way, bacteria, viruses and rot of rice are prevented. Due to the use of local details in the production of the device, the cost of delivery and installation and maintenance of farms is 60-75% cheaper than imported rice dryers. Shelf life is also 5-10 years. The use of the device has an artificial and natural comfortable environment that is different from other devices.



This picture shows a device that protects rice from external factors during drying.

## Operating stages of rice dryer:

1-The protective cover opens automatically to dry the rice

2-If the rain and external factors adversely affect the drying of the rice, the protective coating is automatically sealed

**3-**The protective cover opens automatically when the impact of rain and external factors on rice drying is reduced.

**4-**Once the rice is dry, it is automatically sent to the processing plant

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