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HISTORY AND PRESENT DAY OF COTTON CULTURE IN UKRAINE

ІСТОРІЯ І СЬОГОДЕННЯ КУЛЬТУРИ БАВОВНИКУ В УКРАЇНІ

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The year 2024 marked the resurgence of cotton cultivation in Ukraine.

Analyzing archival data from 200 years of history, we can note repeated attempts to introduce cotton cultivation in Ukraine in order to displace foreign raw materials from Central Asia, Transcaucasia, India, Egypt, etc., for which many millions of rubles were paid in gold. The first attempts to develop cotton cultivation in Ukraine were at the beginning of the 18th century and for 100 years did not bring successful results, primarily due to the lack of early-ripening varieties and methods of its cultivation. In particular, in Ukraine they sowed seeds obtained from Marseilles in the village of Demiivtsi (80 km from Odesa) [1, c. 96].

Starting from the 19th century, an outstanding agronomist-researcher, born in the Yagotyn district of the Kyiv region, Volodymyr Rotmistrov, conducted experiments in various areas of the entire Black Sea coast with

the 'Egyptian' variety, imported from the Caucasus. And in some cases, he achieved a yield of 2.3 t/ha of raw cotton. He also conducted experiments in the Kherson, Podilsk, Kyiv and Poltava provinces with late-ripening varieties 'Rousselier', 'Triumph' and 'King'. But these varieties, although they gave yields, were very low. Due to the imperialist war, Rotmistrov left the Odesa research field, where he was the director, and the research work ceased [2]. Exactly 100 years ago, in 1924, a new round of introducing cotton cultivation to Ukraine began with experimental work on cotton cultivation at the Kherson Experimental Station. In 1927, the Brylivka Experimental Irrigation Network and the Odesa Regional Agricultural Experimental Station began their experimental work.

The successful results of the experiments of recent years made it possible to obtain early-ripening varieties of cotton and find the main methods of its cultivation in the conditions of Ukraine. Thus began a program for the rapid expansion of cotton cultivation in the USSR, in particular in Ukraine. The main goal was to provide the textile industry with its own, not foreign, raw materials and to have a surplus for its further development. The development of industrial cotton growing in Ukraine began in 1930 with 20,000 hectares and in 1933 reached 158,000 hectares [3, c. 43]. In the 1930s, the government issued a directive to create new cotton-growing areas, providing assistance with loans and increasing prices for raw cotton. Thus, cotton began to be distributed in the Tsyurupin, Skadovsk, Holoprystan, and Ochakiv districts.

Soil preparation, sowing, crop care, and harvesting raw cotton were not easy tasks. But the workers of that time were committed to obtaining high yields and harvested up to 3.0 t/ha of raw cotton. So, cotton cultivation generally spread to the Odesa, Kherson, Zaporizhia, and Mykolaiv regions of Ukraine. Cotton cultivation was developed until World War II. Then it was resumed in 1945. But since the cost of the raw cotton obtained was significantly lower than that of Central Asian cotton, in 1954 cotton cultivation in the Kherson region was stopped.

The most common varieties until 1966 were: '1306', '182', '169', '10193' and '611-b', the economic characteristics of which ranged from 120–165 days and more, fiber yield from 28 to 38 %, fiber length from 22 to 30 mm.

Another attempt to revive cotton cultivation in Ukraine was made in 2017. This was announced by the Institute of Irrigated Agriculture of the NAAS (now the Institute of Climate-Oriented Agriculture of the NAAS) in the Kherson region. At that time, 170 collection samples of cotton were sown at the institute. Working with seeds from 22 countries, it turned out that Bulgarian varieties, in particular Beli-Izvor, are best suited for the southern zone of Ukraine. While breeding cotton, the institute's scientists

bred two varieties of cotton, 'Dniprovs'kyi' 5 and 'Pidozers'kyi' 4' [4, c. 115–241].

In addition to these varieties, two more varieties of American cotton, 'Valent' and 'Raykot 22', were included in the State Register of Plant Varieties Suitable for Distribution in Ukraine in 2007.

Among spinning crops, cotton ranks first in the world. Its fiber is used to make various fabrics (satin, chintz, cambric, parachute, insulating, etc.), but, in addition to fiber, 70 % of the cotton harvest is seeds, from which food and technical cotton oil is obtained, and seed waste (cake) is used as animal feed. Pellets are made from the vegetative mass of plants 17 organic acids have been identified in cotton leaves, including malic and citric acids. Cotton fiber is used to produce film. It is also a valuable raw material for the chemical and defense industries .

So, another round of the revival of cotton growing in Ukraine is the Law “On Amendments to Certain Laws of Ukraine Regarding the Distribution of Cotton Varieties in Ukraine” No. 3645-IX of April 23, 2024, signed by the President of Ukraine. The purpose of the document is to ensure the resource needs of the Ukrainian industry. The law simplified the import of cotton seeds into Ukraine and the state registration and procedure for introducing cotton seed varieties into circulation [5].

The experiment interested farmers, and in 2024 they began to understand the technology of growing this crop in the conditions of southern Ukraine, in particular in the Odessa region. They came to the conclusion that cotton can be grown, but for industrial production it is necessary to have subsidies from the state. In general, farmers need another year of research to determine the potential of the crop on irrigated and rainfed lands, as well as to calculate economic feasibility.

Taking into account the requirements of this Law, the Turkish cotton variety 'MAY 455' was included in the Plant Varieties Suitable for Distribution in Ukraine in 2024. The American cotton variety 'Koncha' was included in the Patent Register. In total, as of 03/01/2025, there are 4 cotton varieties in the registers: 'Dniprovs'kyi' 5', 'Pidozers'kyi' 4', 'MAY 455' and 'Koncha' [6].

The Ministry of Agrarian Policy and Food of Ukraine, in particular the expert institution authorized by it – the Ukrainian Institute of Plant Variety Expertise, has also joined in fulfilling the requirements of this Law. One-year studies were conducted on five cotton varieties of ultra-early and early maturity groups provided by leading companies in Germany, America and Turkey. Six home-grown cotton harvests were conducted on the experimental plots and yields from 1,5 to 3 t/ha were obtained.

The studies have confirmed that cotton, as a drought-resistant crop, can be grown in the agro-climatic conditions of southern Ukraine, but it requires

mandatory moisture supply. Sowing should be carried out provided that the temperature in the 10-centimeter layer of soil is 12–15 °C. It is necessary to wrap the seeds to a depth of no more than 4–5 cm. It is imperative to remove the tops of the central and lateral shoots or use retardants to increase cotton yield and accelerate its ripening [7, c. 13–14].

With the support of the Ministry of Agrarian Policy and Food of Ukraine, the Ukrainian Institute of Plant Variety Expertise will continue agrotechnical research of cotton varieties in 2025 in the conditions of the southwestern part of the Odesa region of Ukraine.

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GRAIN QUALITY OF NEW VARIETIES OF WINTER RYE (*SECALE CEREALE* L.)

ЯКІСТЬ ЗЕРНА НОВИХ СОРТІВ ЖИТА ПОСІВНОГО ОЗИМОГО (*SECALE CEREALE* L.)

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