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Сторчак А.Е
Марковська А.В.

CURRENT STATE AND DEVELOPMENT PROSPECTS OF VITICULTURE IN THE MYKOLAIV REGION UNDER WATER SCARCITY CONDITIONS

У публікації порушено питання сучасного стану виноградарства в Миколаївській області, впливу водного дефіциту після руйнування гідротехнічної інфраструктури на продуктивність та перспективи впровадження адаптивних технологій для підвищення стійкості галузі.

Ключові слова: *виноградарство, Миколаївська область, водний дефіцит, зрошення, адаптивні технології, посухостійкі сорти, сталий розвиток, кліматичні ризики.*

The publication addresses the current state of viticulture in the Mykolaiv region, the impact of water scarcity following the destruction of hydraulic infrastructure on productivity, and the prospects for implementing adaptive technologies to enhance the sustainability of the sector.

Keywords: *viticulture, Mykolaiv region, water scarcity, irrigation, adaptive technologies, drought-tolerant varieties, sustainable development, climate risks.*

The current state of viticulture in the Mykolaiv region is characterised by increased risks due to water scarcity following the destruction of hydraulic infrastructure, but it also opens new opportunities for the implementation of adaptive cultivation technologies and the enhancement of the ecological sustainability of the sector.

Viticulture in the Mykolaiv region has traditionally been a promising area of agricultural production due to favourable climatic conditions, including high sums of active temperatures and long growing seasons, which allow the production of high-quality grapes [1]. However, the southern steppe climate is also marked by pronounced aridity and uneven distribution of precipitation, which creates a significant deficit of soil moisture during the growing season [2]. Until 2023, an effective irrigation system was a fundamental prerequisite for stable yields in viticulture, maintaining optimal soil water balance even during dry years. Irrigation systems supplied by the Kakhovka Reservoir enabled increased vineyard productivity compared to rainfed farms [4]. The destruction of the Kakhovka Hydroelectric Power Plant led to a sharp reduction in available water resources, critically affecting vineyard management and reducing production efficiency [5].

The reduction of irrigation capacity caused both economic and environmental challenges. Vineyard productivity decreased, farmers were forced to revise cultivation practices, reduce irrigated areas, and adapt vineyard structure. Disruptions to the hydrological regime also increased the risks of soil degradation and reduced water retention capacity, negatively affecting the long-term productivity of vineyards [1; 5]. The economic consequences of water scarcity for the southern Ukrainian agricultural sector are significant, as yield losses and productivity declines due to the lack of irrigation are estimated at hundreds of millions of dollars annually [6].

In response to these challenges, the implementation of adaptive and water-saving technologies has become increasingly important. Drip irrigation can increase water-use efficiency by 30–70% compared to traditional methods and improve crop yields under limited water availability [7]. The integration of automation and digital soil moisture monitoring systems optimizes water application and reduces resource use. Remote sensing and satellite monitoring technologies allow precise assessment of plant and soil conditions for timely responses to stress conditions [8]. The development of autonomous irrigation systems based on emerging technologies, such as IoT and artificial intelligence, enables water demand forecasting and automatic regulation of irrigation processes, reducing costs and increasing productivity [9]. The reuse of treated wastewater for irrigation decreases dependence on traditional water sources and provides additional nutrients to vineyards [10]. The adoption of drought-tolerant grape varieties and optimization of agronomic practices, including soil compaction and mulching, contribute to more efficient use of limited water resources [11].

Legislative and policy measures also play a crucial role in stabilizing the sector. Irrigation and water management strategies adapted to modern climatic conditions and aligned with sustainable development priorities can support effective interaction between the government and farmers, stimulate investment in infrastructure, and modernize water resource management systems [4]. Thus, to stabilize and further develop viticulture in the Mykolaiv region, it is necessary to combine technical, technological, scientific, and policy solutions. A comprehensive approach that includes infrastructure modernization, the implementation of water-saving technologies, digital management development, use of alternative water sources, and adaptation of grapevine varieties can reduce risks associated with water scarcity and ensure the sustainable functioning of the sector under changing environmental conditions.

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Тимошенко Д.Т.
Тішечкіна К.В.

THE ROLE OF FINANCIAL LITERACY IN MODERN SOCIETY

У роботі розкрито значення фінансової грамотності як ключової життєвої компетенції в умовах сучасного суспільства та цифрової економіки. Обґрунтовано вплив фінансових знань і навичок на особистий добробут, психологічну стабільність і економічну стійкість суспільства.

***Ключові слова**: фінансова грамотність, особисті фінанси, фінансова безпека, економічна стабільність.*

The paper examines the importance of financial literacy as a key life competence in modern society and the digital economy. It substantiates the impact of financial knowledge and skills on personal well-being, psychological stability, and the economic resilience of society.

***Keywords:** financial literacy, personal finance, financial security, economic stability*

Financial literacy has turned into a fundamental survival skill in contemporary society. People now interact with financial systems on a daily basis, often without professional support or clear