Отже, гуманітарна підготовка – це не лише компонент академічної освіти, а й важлива складова процесу становлення особистості, здатної діяти відповідально, критично мислити та захищати гуманістичні цінності у будь-яких суспільних умовах.

Список використаних джерел

1. Шарата Н. Методика викладання дисципліни «Українська мова (за професійним спрямуванням)» в аграрних закладах вищої освіти // *Українознавчий вимір у сучасній науці: гуманітарний аспект*: матеріали VI Всеукраїнської науково-практичної конференції, 29 квітня 2022 р., Миколаїв : МНАУ. С. 119-121.

Abstract. The main problems that faced humanitarian education during the war are analyzed, and ways of supporting the psychological stability of higher education students and ensuring the effectiveness of the educational process in times of crisis are considered.

Keywords: humanitarian sciences, martial law, teaching methods, higher education students.

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THE FUNDAMENTALS OF FOOD SECURITY IN UKRAINE

Schwartau V.V., Dr.Sci. Prof., Acad. NAS of Ukraine
Institute of Plant Physiology and Genetics, Natl. Acad. Sci. of Ukraine
https://orcid.org/0000-0001-7402-5559

Abstract. The article outlines the foundations of food security in Ukraine. The introduction of innovative wheat varieties and optimal technologies for their cultivation is the basis of modern crop production in the country. These IPPG developments are of paramount importance for ensuring food security and preserving Ukraine's role as one of the guarantors of food security in the world, both during the war and in the period of post-war reconstruction.

Key words: food security, cereals, wheat, optimal cultivation technologies, nitrogen use efficiency.

In recent years, crop production in Ukraine has become an important sector of the economy with a dominant share of budget revenues [1]. Since the outbreak of the war and the sharp rise in the prices of electricity, fertilizers, pesticides, fuel and lubricants, etc., most agricultural enterprises have been facing financial problems for three years in a row. During the war, the world realized that its food security depends largely on the success of crop production in Ukraine.

Today, the No. 1 problem in Ukrainian plant production is a total deficiency of resources: human, material and an obvious lack of time to make balanced decisions. Therefore, it is important to introduce optimal farming systems with high resource efficiency.

Of course, the main driver of productivity is the supply of nitrogen to crops. Promising solutions to improve nitrogen use efficiency (NUE) include positioning of

nitrogen application areas, use of phosphorus, magnesium and redox micronutrients, control of diseases & weed's resistance, crop lodging, and digital technologies with large-scale implementation of developments. Improving the NUE is in line with the European Green Deal and Paris Agreement, i.e. building a climate-neutral economy.

The Institute's scientists were the first in Ukraine and, for some varieties, the first in the world to develop original scientific methods for breeding competitive domestic cereal varieties with a productivity potential of 10-14 t/ha [1]. Our new black-grain wheat and hulled barley varieties, which have high antioxidant activity, allow us to improve the nutritional value of grain and produce new functional food products. Additionally, the IPPG has developed a unique spelt wheat variety with colored grains, designed for healthy eating. It is the first of its kind in the world.

The above-mentioned approaches to improving the efficiency of resource use, NUE, etc. were implemented in the cultivation of wheat varieties developed under the leadership of Academician Volodymyr Morgun at the Institute of Plant Physiology and Genetics of the National Academy of Sciences of Ukraine. In recent years the following results have been achieved in the realisation of the genetic potential of wheat varieties under the conditions of experimental agricultural production of the IPPG of the NAS of Ukraine (Hlevakha village, Fastiv district, Kyiv region):

- 2021: Innovative winter wheat varieties Sofia Kyivska, Horodnytsia and Kyivska 19 produced yields from 11.0 to 13.6 t/ha, with the average yield in Ukraine of 4.53 t/ha;
- 2022: Kyivska 19, Sofia Kyivska and Horodnytsia yielded 10.7-11.7 t/ha, the average yield in Ukraine was 3.93 t/ha;
- 2023: Horodnytsia yielded 13.48 t/ha, Sofia Kyivska – 14.41 t/ha, Zdoba Kyivska – 10.65 t/ha (protein content up to 15%), Kyivska 19 – 13.23 t/ha, the average yield in Ukraine is 4.75 t/ha.
- 2024: The growing season was characterized by extremely high temperatures during the period of winter grain filling: in the last 2.5 weeks of the wheat growing season the air temperature reached 40-42°C, and the soil surface temperature – up to 60°C. Under these conditions, Kyivska 20 yielded from 13.3 to 14.2 t/ha on different fertilizers, and Zvenyhora yielded up to 13.5 t/ha, while the average yield in Ukraine is 4.5 t/ha. Okovyta triticale variety yielded 14.6 to 16.6 t/ha in 2024, with moderate costs for cultivation technology. The crop is promising for the southern and central parts of Ukraine, for regions with permanent and periodic drought.

Thus, in the years of the war for civilisational choice, we are conducting research on the formation of an digital systems for increasing the productivity of winter wheat and other crops in the face of resource shortages [2]. The high productivity potential of domestic winter wheat varieties is realised with reduced cultivation costs, increased NUE and, accordingly, a significant reduction in greenhouse gas emissions.

The significant work on transferring innovative varieties to production over the last three years is noteworthy. More than 2,000 tons of additional seeds were produced under 99 license agreements and an international grant from the Food and Agriculture Organization of the United Nations (FAO), providing high-quality seeds to over 225 seed farms in Ukraine. The institute's research on food security issues was recognized with four State Prizes of Ukraine in Science and Technology.

The above developments contribute to the development of crop production in Ukraine during the war and in the period of post-war recovery, and are of paramount importance for ensuring the country's food security and preserving Ukraine's role as one of the guarantors of the world's food security.

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Анотація. Окреслено шляхи формування продовольчої безпеки в Україні. Впровадження інноваційних сортів пшениці та оптимальних технологій вирощування є основою сучасного рослинництва в країні. Ці розробки ІФРГ мають першочергове значення для забезпечення продовольчої безпеки та збереження ролі України як одного з гарантів продовольчої безпеки у світі, як під час війни, так і в період післявоєнної відбудови.

Ключові слова: продовольча безпека, зернові культури, пшениця, оптимальні технології вирощування, ефективність використання азоту.