years of research, is considered early vegetation. In the studied varieties, the protein content varied from 12.6 ('Poltavchanka') to 14.2% ('Vilshana'). The gluten content ranged from 27.5 to 30.2%, respectively. All varieties exceeded the standard variety 'Orzhytsia' nova' in terms of protein and gluten content. The highest protein and gluten content was found in the 'Vilshana' variety, which exceeded the standard variety in terms of protein content by 0.7% and in terms of gluten content by 2.2%.

The high level of formation of grain quality indicators in years with different beginnings of spring vegetation renewal is explained by the fact that the technology of the breeding process of the PDAU involves targeted selection of genotypes to obtain high grain quality indicators.

УДК: 633.11:631.527:632.93
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RESISTANCE OF WINTER WHEAT VARIETIES TO BIOTIC ENVIRONMENTAL FACTORS IN THE CONDITIONS OF THE FOREST-STEPPE OF UKRAINE

Production requires stable, environmentally plastic and highly productive wheat varieties. Breeding seeks to create varieties that have high productivity, salt tolerance, immunity, winter hardiness and drought tolerance. With modern cultivation technologies and increasing potential productivity of varieties, the size and quality of the crop are increasingly dependent on unregulated environmental factors.

If a variety does not have plasticity with respect to a wide range of soil and climatic conditions, then it cannot withstand the action of various biotic and abiotic stresses. An adaptive variety is ecologically plastic and adapted to all external environmental factors, which is the most important task of breeding in creating agroecological wheat varieties.

Identification of mechanisms of plant resistance and adaptation to adverse factors opens up broad prospects for the development of breeding and biotechnology. In the fight against wheat diseases, the selection of disease-resistant varieties is the most effective method. The introduction of varieties with group resistance to diseases into production is equivalent to an increase in sown areas by 15–20%.

The most important stages of selection for immunity are the search, creation and use of resistant starting material. In order to identify effective sources of resistance to the pathogens of the most common diseases (*Fusarium* (F. *graminearum, F. culmorum, F. oxysporum, F. Sporotrichoides* etc.)*, Tilletia caries, Blumeria graminis* f. sp. *Tritici, Puccinia triticina, Septoria tritici* etc.), for many years, breeders have been assessing the resistance of wheat varieties from different breeding centers of Ukraine on separate artificial infectious backgrounds of these pathogens.

Creating varieties resistant to pathogens is a difficult task in breeding, especially in wheat. The difficulties are associated with the fact that each pathogen has physiological races, it evolves quite quickly, often outpacing the selection process of creating a new variety. This creates the need to constantly monitor the variability of both the host crop and the parasite, and to search for new resistance genes.

It is known about the complex nature of the interaction between two biological systems: the plant and the pathogen, therefore it is necessary to take into account the genetic systems of both, as well as carefully control external conditions, taking into account their impact on both the plant and the disease. It has been established that the evolution of parasites is associated with the evolution of the plant affected by them, and the appearance of new genetic resistance factors in varieties leads to the enrichment of the pathogen population with new aggressive races. This creates the need for continuous selection of new immune varieties, a constant search for more effective resistance genes.

The resistance of winter wheat varieties to the most common pathogens was studied during 2019–2024 in the conditions of the Educational and Production Center of the Bila Tserkva National Agricultural University.

The following varieties were characterized by comprehensive resistance to powdery mildew, septoria leaf spot and brown rust: 'Myrlena', 'Hratsiia myronivska', 'Berehynia myronivska', 'Estafeta myronivska', 'Dniprianka', 'Pustovarivka', 'Svitylo', 'Akratos', 'Midas', 'Plantyn', 'Zorepad', 'Kvitka poliv', 'Charodiika bilotserkivska', 'Perlyna lisostepu', 'Elehiia', 'Hratsiia', 'Muza bilotserkivska', 'Bilotserkivska napivkarlykova', 'Lehenda bilotserkivska', 'Vidrada', 'Lybid', 'Tsarivna', 'Yasochka', 'Mulan', 'Romantyka', 'Torrild', 'Hlaukus', 'Bohemiia', 'Tobak', 'Kolonia', 'Bumer'.

The highest plasticity in terms of resistance to pathogens was characterized by the varieties of Myronivska, Bila Tserkva and some varieties of foreign selection; they possess resistance genes that are effective against the pathogen population present in the central Forest-Steppe of Ukraine.

Therefore, the creation and introduction into production of new productive wheat varieties with increased resistance to pathogens will make it possible to preserve the harvest in the future and minimize environmental pollution with pesticides.