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THE ROLE OF HYBRID COMPOSITION IN THE FORMATION OF HIGH GRAIN YIELDS

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An important role in increasing the yield and improving the quality of corn grain is played by the correct selection of hybrids for cultivation. According to the conclusions of domestic scientists, in the coming years, the entire global increase in crop production will be achieved due to selection, that is, new varieties and hybrids, their useful properties and quality indicators.

Today, domestic breeding has created a number of new varieties and hybrids of corn. They differ among themselves in morphological features, biological properties, degree of intensity, quality indicators, have different adaptive levels of resistance to adverse environmental factors, etc. Therefore, it is necessary to take a differentiated approach to the selection of a hybrid. This is especially important now, when most farms are unable to provide crops with high doses of fertilizers and a plant protection complex [1].

Adaptation of plants to new environmental conditions is achieved thanks to modification and genotypic variability, i.e. by restructuring the complex of physiological-biochemical and morpho-anatomical features of the plant itself in ontogenesis and creating new reaction norms in phylogeny.

The terms "plasticity" and "stability" are used to characterize the potential for modification and genotypic variability. Active ecological stability of plants plays an important role in the formation of biological productivity and crop productivity, especially in adverse conditions. Under these conditions, in breeding and agrotechnical programs, increasing the ecological stability of varieties should be considered not as an independent goal, but as a means of realizing potential productivity [2].

The composition of hybrids entered into the Register of Plant Varieties of Ukraine is constantly being improved, being enriched with new, more productive ones with improved economic characteristics. New intensive hybrids differ not only in morphological type, but also in early maturity, productivity, resistance to diseases, reaction to agrotechnical measures and moisture conditions, the ability to accelerate moisture transfer by grain or heat resistance, etc. In recent years, production has proven that not only the high level of hybrid productivity is decisive when choosing a hybrid to be grown, but also the ability to maintain a high lower threshold in adverse growing conditions, which is determined by the adaptive potential of plants [1].

An important role in ensuring high grain yields of corn hybrids is played by their adaptability to environmental conditions. The variety of corn growing conditions requires certain ecological characteristics of hybrids. The creation of

forms that are able to combine high potential productivity and genetically determined resistance or adaptability to different soil and climatic conditions is one of the main tasks of modern breeding [3].

Ecological plasticity reflects the hybrid's ability to effectively use favorable environmental factors for the stable formation of a high level of productivity. The question of adaptability is especially important today, when the climate is rapidly changing, causing a decrease in moisture availability in regions that were previously favorable for agriculture. For the cultivation of stable crops of corn grain, modern hybrids are of great importance, which are able to provide a high and stable level of productivity under certain conditions at low indicators of grain moisture content.

Therefore, the study and selection of modern hybrids are relevant in order to establish their adaptive properties in specific natural and climatic conditions, which is an important factor in the full use of genetic potential and increasing the productivity of corn grain [2].

The maturity group of the hybrid specifically influenced the height of the plants at different stages of their growth and development. This is explained by the reaction of hybrids to weather conditions - high temperature and low air humidity, which became the reason for differences in plant height during the period of active vegetation of crops.

Formation of the productivity of any agricultural crop depends on many factors. First of all, the soil and climatic conditions of the crop growing area, varietal or hybrid composition, seed quality, sowing dates and plant density, and strict adherence to all methods of cultivation technology are important [2].

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