

REALIZATION OF GENETIC POTENTIAL OF SUNFLOWER HYBRIDS UNDER THE INFLUENCE OF NUTRITIONAL CONDITIONS

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Abstract. The efficiency of oilseeds production in Ukraine in recent years has led to problems associated with oversaturation of sunflower crop rotations. Increasing the production of sunflower seeds can be done by improving the elements of technology for its cultivation, important of which is the rational use of fertilizers. The effectiveness of mineral fertilizers on sunflower crops in different agro-climatic zones varies.

Providing plants with nutrients during the growing season is one of the factors that can contribute to a fuller realization of the genetic potential of sunflower hybrids for growing them in specific soil and climatic conditions. The study of the genetic potential of sunflower hybrids under different growing conditions in order to identify their competitiveness, which improves the quality and yield of the crop is one of the most pressing issues today.

The use of microfertilizers on the background of the main fertilizer helps to increase the efficiency of plant use of nutrients of mineral fertilizers and soil, which provides increased yields and improved quality indicators of the crop.

The aim of the research was to establish the influence of culture conditions and selection of high-yielding hybrids (NK Diamantis, SI Kupava, NK Neoma) for specific soil and climatic conditions through the formation of their productivity.

Field research was conducted during 2018–2019 on typical low-humus chernozems of the Chernihiv region. The research program provided for the establishment of a three-factor field experiment, which studied hybrids (factor A)

fertilizer options (factor B) and foliar fertilization (factor C) in phase 4 and 8 sunflower leaves with Ecoline Bor, Nertus Bor, Bast Bor. The studied sunflower hybrids are NK Diamantis, SI Kupava, NK Neoma.

Studies have shown that the most productive was the hybrid SI Kupava with the maximum yield on the variant with the use of N36R56K108S28 + N23 + Ecoline Boron (in phase 4 and 8 leaves of 1 l / ha) - 3.46 t / ha.

The conducted researches allow to state the dependence between the yield of SI Kupava sunflower hybrid and the fertilizer variant with a positive strong correlation $r = 0.93$. Based on regression analysis, it was found that yield changes have a polynomial type of curve.

The fat content in the seeds of sunflower hybrids was determined by the morphobiological features of the hybrid and fertilizer options. The use of foliar fertilization with trace elements had a positive effect on the fat content in the seeds of sunflower hybrids, which allowed to obtain the maximum value for the option of making N36R56K108S28 + N23 + Ecoline Boron (5-6 leaves) in plants of the hybrid SI Kupava - 51.1%.

As a result of the research, it was found that the protein content in sunflower seeds depended more on genetic features than on the factors we studied.

The maximum content of oleic acid was found in the hybrid SI Kupava on the variant with the introduction of N27R42K81S21 + N23 + Ecoline Boron (5-6 leaves) - 77.2%. Due to the use of fertilizers containing boron, the content of this polyunsaturated acid can be increased by improving the quality of sunflower seed oil.

The total oil collection depends on the fat content of the seeds and the yield of the crop.

The highest oil yield, according to the calculations, was obtained on the variant with the introduction of N36R56K108S28 + N23 + Ecoline Boron (5-6 leaves) in plants of the hybrid SI Kupava, which was 1.64 tons per 1 hectare.

Similar calculations were performed to determine protein collection. The maximum value was obtained by applying N36R56K108S28 + N23 + Ecoline Boron (5-6 leaves) in the hybrid SI Kupava - 0.66 t / ha.

The results of research show that the use of double fertilization in the initial stages of growth and development of plants (phase 4 and 8 leaves) of sunflower hybrids Ecoline Bor, Nertus Bor, Bast Bor on the background of the main fertilizer provided favorable conditions for the formation of productivity elements of hybrids and increased yield and seed quality indicators.

Key words: sunflower, hybrids, nutrients, boron, Ecoline Boron, Nertus Boron, Bast Boron, yield, fat content, protein content, oleic acid content.