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GROWTH PROCESSES OF SUNFLOWER PLANTS DEPENDING ON GROWTH FACTORS

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The growth properties of different sunflower hybrids differ among themselves according to such indicators as initial growth energy, onset time and duration of development phases, period of onset of maturity, morphological parameters of plants, yield properties and quality indicators of products. At the same time, in the same hybrid, due to changes in climatic or technological growing conditions, the main indicators may also change.

Therefore, the level of realization of the biological potential of plants depends both on hereditary possibilities and, to a large extent, on environmental conditions and optimization of the conditions necessary for passing the relevant stages of ontogenesis, because it is impossible to eliminate the shortcomings at the previous stage in the future [1].

In sunflower, there is a fairly close correlation between the duration of the growing season, the total phytomass and the yield level. At the same time, the total phytomass of sunflower plants is mainly determined by the height of the plants, their leafiness and stem diameter, and later by the diameter and weight of the basket [2].

The height of plants is considered one of the important morphobiological features that characterizes the reaction of plants to changes in growing conditions.

The flowering phase is the main phase of plant growth and development. During this period, plants form the greatest height and above-ground mass [3].

The height of plants by development phase plays an important role in shaping the productivity of the cultivated crop, but there is still no consensus regarding the optimal height of sunflower.

The work of modern breeders is aimed at creating short-stemmed sunflower hybrids, because the shorter the height of the plants, the more efficiently solar radiation is absorbed, which helps to strengthen the process of photosynthesis. This in turn affects the improvement of growth and development processes, increases biomass and ultimately increases productivity. Also, the height of the sunflower is of great importance when processing crops and harvesting.

The advantage of short-stemmed hybrids is also the formation of a much smaller vegetative mass, which reduces the removal of nutrients and moisture from the soil. The advantages of tall hybrids include the fact that they form a larger assimilation surface, compared to short ones, which has a very close correlation with the level of productivity, therefore tall hybrids have a higher potential productivity [3].

The height of plants of a certain hybrid is a hereditary trait, but growing conditions, such as sufficient moisture during the growing season, high agrobbackground, technological conditions of cultivation contribute to a significant increase in plant height, compared to the height of plants on an impoverished agrobbackground or under arid conditions or under unfavorable growing conditions , which was confirmed in the conducted research, where the height of the plants changed with the improvement of growing conditions.

According to the results of the conducted research, we can track the change in the height of sunflower plants during the growing season and the effect of treatment of plants with biological preparations on their height. Thus, in the control option, in which the sowing was treated with water, the height of the plants was the lowest in all phases of growth in which the determination was made, compared to other options of feeding.

Treatment of sunflower crops in the phase of 3-4 pairs of leaves helped to increase the height in the phase of budding from 74 to 85 cm, at the beginning of flowering the height of plants increased from 158 to 166 cm, at the end of flowering it was from 160 to

166 cm, and before the onset of physiological maturity, the height of the plants almost did not increase and was from 160 to 167 cm. The maximum linear dimensions of the height of the plants increase before the budding phase and before the beginning of flowering, and remain practically unchanged until the end of the growing season.

Plant height indicators reached higher values in variants with foliar treatment with biological preparations in the budding phase and in variants with two feedings, the smallest difference in height compared to the control was observed in variants with one foliar feeding in the phase of 3-4 pairs of leaves. Thus, the height of sunflower plants was most affected by drug treatment in the budding phase.

To form a stable productivity of agricultural crops under growing conditions in Ukraine, plants must accumulate a sufficient amount of above-ground biomass and the corresponding area of the leaf apparatus, the functioning of which depends on the yield level.

When studying the dynamics of the growth of the above-ground mass of sunflower plants, it was found that in the period from budding to flowering, sunflower plants accumulated the largest amount of vegetative mass, which was accumulated predominantly in the stems with a ratio of $\frac{3}{4}$ to the total mass of the plant.

In the subsequent accumulation in the above-ground mass, substances and their quantitative and qualitative composition have a determining role in the formation of the crop. The stem of sunflower plants can be characterized by such values as height and its diameter, therefore, the thickness of the stem was an important biometric indicator that also changed during nutrition optimization.

The value of the thickness of the stem is correlated with the number and development of conducting bundles and performs a compensatory role during fluctuations in the level of moisture supply and mineral nutrition.

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ПЕРСПЕКТИВИ ВИРОЩУВАННЯ М'ЯТИ

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Якщо описувати м'яту то можна сказати що це трави однорічні чи багаторічні, дуже духмяні, часто з кореневищами або зі столонами. Верхнє