

UTILIZATION OF CARBON DIOXIDE UNDER CONDITIONS OF CULTIVATION OF GRAIN CROPS BY USING OF GROWTH BIOSTIMULATORS

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It was set that the less quantity of carbon dioxide from the use of “Radostym”, “Biolan”, and “Emistym C” growth stimulators accumulated barley plants, and the most – winter wheat plants. The use of these stimulators causes the rise of humus in soil, chlorophyll, square of leaf blades and activity of catalaza enzyme in the leaves of spring wheat in the output of the tube and earing phases.

Crop cultures, CO₂, yield, biomas, chlorophyll, loliage area, biostimulators of plant growth.

According to expert estimates, the contribution of world agriculture is up to 20 % of total emissions of greenhouse gases, which include 50% methane, 75 - nitrogen and 5% carbon dioxide. Along with this, another 14% of the total emissions of carbon dioxide have on land use [14]. In particular, the National cadastre of anthropogenic emissions of greenhouse gases [5] noted that the optimal level of accumulation of carbon dioxide is due to biomass growth forests, and the most significant losses from arable land. The struggle for the preservation of forests reduces the level of carbon dioxide, land degradation and biodiversity loss. The improvement of the practice of agriculture leads to the reduction of carbon dioxide in the atmosphere as a result of human activities and the increase of plant biomass. Expect that in the future technology of cultivation of agricultural crops will play an important role as carbon dioxide in the atmosphere can be transformed into the plant biomass, which consists mainly of carbon. It is estimated that in Ukraine the area of arable land amounts to 33 million hectares or 50 % of the available area (60.4 million hectares). It becomes apparent that as a result of growing crops will increase the level of accumulation of carbon dioxide in the organic mass.

On the threshold of the third Millennium the world of science has been enriched by the latest technology. Thus, the newly established Ukrainian biostimulants growth (BSR) is a new generation that counteract the ecological imbalance in the plant. In addition, in modern intensive technologies of cultivation of field crops is extremely important to use environmentally safe and cheap BSR for the regulation of growth and development, increasing the resistance of plants against drought, high temperatures, salinity, lodging, disease and so on, it is Established that the use of BSR increases the

productivity of agricultural crops on average 14 to 15 % [9]. According to the research-and-production experiments using BSR involves high expenses due to the growth of crops and other crops [1].

Favorable climatic conditions and high soil fertility of Ukraine allow to obtain high quality food grains in amounts sufficient to meet domestic needs and to develop export potential. Ukraine introduced cropping patterns [7]. Under cereals and leguminous crops in 2012 allocated 15565, 2 thousand ha or 57, 2 % of the total sown area, technical - 27,0 (7549,7 thousand ha), fodder is 8.5%, which is 2348,6 thousand hectares, potatoes, vegetables and melons - 7,3%, or more than 2 million hectares. It is proved that between the atmosphere and terrestrial ecosystems occur in significant fluctuations of carbon dioxide through the operation of the processes of photosynthesis and respiration. Almost half of the carbon dioxide absorbed by plants, is spent on the processes of respiration and returned to the atmosphere. The other part involved in the formation of above-ground and below-ground biomass and dead organic matter. In the process of photosynthesis transformation of carbon dioxide occurs with participation of biological systems, the main component of which is ATP, NADH and H₂O contained in talakad membranes of the chloroplasts in the leaves of plants form carbohydrates, organic acids and other spare energy substances. Human activities (deforestation, fertilizer application, irrigation, harvesting) causes disruption of the functioning of agroecosystems, including greenhouse gas fluxes - photosynthesis, death and decomposition of biomass and formation of organic matter. However, part of dead organic matter is rapidly decomposed by microorganisms and is returned in the form of carbon dioxide in the atmosphere, and the other as the humus can be stored for a certain time. However, in conditions of intensive farming undergoes degradation and degomez soils [4], which mineralize humus and wilt carbon dioxide. For the cultivation, on the contrary, there is an accumulation of humus in the soil.

The aim of the research is the evaluation of the level of savings FROM CO₂ in the atmosphere and efficiency on the area of cultivation of grain crops BSR (average area of grain crops in Ukraine for the last five years is 14.7 million hectares).

Materials and methods research. The efficacy of drugs "Biolan", "Radostin and Emistim C" on the productivity of agricultural crops investigated for 2008-1012

biennium on the basis of scientific-research institutions NAAN, which are located in areas of woodlands, forest-Steppe and Northern steppe of Ukraine. **Conclusions**

The use of multicomponent BSR "Radostina", "Bolano" and "Emistim With" causes an increase in the yield of straw, PKO, content-CO₂ and yield of crops. It is established that the greatest amount of carbon dioxide accumulating plants of winter wheat, the lowest - spring barley. For actions BSR is the increase in the number of chlorophyll "a" and "b" square sheet machine and activity of the enzyme catalase in plants of spring wheat in the phase of the tube and earning.

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