

Morpho-Physiological Features of The Action Of The Drug Ccc 750 On Winter Wheat Plants In Crops

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ABSTRACT

The retardants preparations on cereal crops prevent lodging, help to level the height of productive stems, ensure their simultaneous ripening and affect the crop yield.

The aim of the research was to study the effect of CCC 750 on the parameters of growth, photosynthetic activity and productivity of winter wheat in the conditions of the south of the Republic of Moldova. The drug is a growth regulator of the retardant type, the active substance of which is chlormequat chloride, in the concentration -750 g/l.

The studies were carried out under the conditions of a field production experiment on sowing of winter wheat of the Kuyalnik variety of intensive type in the SRL "Terra-Vitis" of the Cahul region, on an area of more than 200 hectares. The period of application of the drug is the middle of tillering before the appearance of the first internode (stage 25-31). The consumption of the preparation is 1liter per 250liters of water per hectare. Control - without treatment of crops. The predecessor is winter rapeseed.

In the main phases of ontogenesis exit into the tube and formation of an ear, determined the parameters of growth and photosynthetic activity of winter wheat plants of the Kuyalnik variety, at the end of the growing season - the elements of productivity and yield. We found that the use of the retardant type CCC 750 on winter wheat crops leads to a change in the growth parameters of shoots and leaf surface. So, in the heading phase, the height of the plants, the length of the stem change insignificantly, they are at the control level. A feature of the drug is an increase in the thickness of the stem by 1.3 times and the leaf surface area up to 2 times, compared with the control.

Under the influence of the retardant type growth regulator, the photosynthetic activity of plants is enhanced. In the assimilation organs (leaves, shoots with sheaths of leaves and ears), the concentration of plastid pigments, chlorophylls a, b and carotenoids increases. The level of chlorophylls increases 1.5-1.6 times, carotenoids - 1.2 times. The total content of green pigments (chl.a + b) in plants increases up to two times, is 5.44 mg / plant (control - 2.62 mg / plant). Biomass accumulates in plant organs. The level of raw and absolutely dry biomass increases and the contribution of individual organs to its accumulation changes. In the total biomass, in comparison with the control, the proportion of leaves, shoots with leaf sheaths increases by 1.5 times, ears - by 1.4 times.

The use of CCC 750 on winter wheat crops of the Kuyalnik variety leads to an increase in the number of large and medium ears by 1.2 times and a decrease in small ones. In ears of large and medium sizes, an increase in indicators of productivity elements is observed - spike weight, grain weight in an ear and the number of grains in them by 1.1-1.2 times. The yield is 58.7 c/ ha, exceeds the control by 4.8 c/ha.

Keywords: Winter wheat, Variety Kuyalnik, Growth, Photosynthetic activity, Chlorophyll, Productivity