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GENETIC CHARACTERISTICS OF HETEROSIS OF WHEAT (*TRITICUM L.*)

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A comprehensive assessment of the changes in the nucleic acid content of individual structural elements of cell, nuclei, mitochondria and chloroplasts, in hybrids of wheat, performing heterosis, were carried in comparison with their parental forms.

It was revealed that, the content of DNA in per cells of leaf tissue of the heterosis hybrids plants was higher than those of their parents. Thus, reduction of the cell numbers for per unit area and increasing of cells' size were observed in hybrids. Hybrids were also characterized by increased DNA content in the nucleus of leaf cells, which associated with the new classes of ploidy level (2c– 4c) in the heterosis hybrids of wheat, that explained by the amplification and also differential replications of DNA.

Activation of DNA synthesis in heterosis hybrids was not observed by the same fraction of DNA in all cases. High levels of total DNA content in the leaves of heterosis hybrids was due to the increased labile DNA fraction in many cases, while in some cases both labile and stable fractions. At the same time, there was redistribution in favor of the fractional composition of euchromatin fractions. Increasing of the labile and stable fractions of DNA, presumably, was on account of the formation of numerous endoploid cells in the hybrids, while increasing of the individual fractions through the gene amplification.

A total increased energy supply of cells in heterosis hybrids may contribute by mitochondrial and chloroplast systems. Obviously, in the case of nuclear DNA and plasmogen function with an increased load the hybrids gets more energy to enhance the biosynthesis of necessary substances and this may appear as a high heterosis effect.