EFFECT OF ELECTROMAGNETIC WAVES OF EXTREMELY HIGH FREQUENCY RANGE OF NON-THERMAL INTENSITY ON BIOLOGICAL OBJECTS

D. G. Voytyuk, Yu. V. Chovnyuk, O. P. Gutsol, I. M. Sivak, Yu. O. Gumenyuk

Abstract. Conducted content analysis of existing theories that justify and explain the physical effects of electromagnetic (mm) waves extremely high frequency (EHF) range of non-thermal intensity on biological objects. Proposed use of energy-saving nanotechnologies intensify the growth of crops and organisms.

The result is a Hyper-activation nitrate and the inhibitory effect of radiation on the functional activity of the ROS generation (with the activation of respiratory explosion turbolover ether).

When two-fold increase in the magnitude of the magnetic field (magnetic induction MP) compared to the background changes the direction of the effect of EMR UHF and shifts the resonant frequency effect. Assuming that MP alters the affinity Ca$^{2+}$ with Ca$^{2+}$-dependent enzymes, increase MP specific way modifies the activity of some key enzymes. On the background of the modified enzymatic activity of EMR UHF is changing that in the future if the impact on functional activity of neutrophils are manifested as activation of synergistic reactions. On the background of the changed functional status of the cell due to the action of MP can become more effective is another frequency of EHF-radiation, so there is a slight shift of the resonance frequency of the effect.

Key words: electromagnetic wave, UHF band, non-thermal intensity, biological objects, energy conservation, nanotechnology, intensification of growth