

## Effect of extremely high frequency electromagnetic field of low intensity on bakery yeast

© Pavel P. Krynitsky,<sup>1</sup> Alla Yu. Krynitskaya,<sup>2\*+</sup>  
Gennady A. Morozov,<sup>1</sup> and Pavel P. Sukhanov<sup>3</sup>

<sup>1</sup> Department of Radiotechnical Systems. Kazan National Research Technical University. Karl Marx St., 10. Kazan, 420015. Tatarstan. Russia. E-mail: Pavel211@yandex.ru ; gmorozov-2010@mail.ru

<sup>2</sup> Department of Food Biotechnology; <sup>3</sup> Department of Processes and Devices of Chemical Technologies. Kazan State Technological University. Karl Marx, St. 68. Kazan, 420015. Tatarstan. Russia.

E-mail: paulalla@yandex.ru ; paulpost3@yandex.ru

\*Supervising author; +Corresponding author

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### Abstract

The action of electromagnetic field of extremely high frequency (EHF) of low intensity on physiological and technological characteristics of the bakery yeast growth has been investigated. Frequencies, significantly activating the yeast physiology, are defined in a wide (13 GHz) EHF range – from 54 to 67 GHz with a step of 0.2 GHz. In this range has been detected the frequency 60.2 GHz of electromagnetic field of low intensity, corresponding to the maximum growth of the technological performance of *Saccharomyces cerevisiae* 509 yeasts. Parameters of evolution of the gross physiological activity, conditioned by external electromagnetic field, correlate to experimental data on enzymatic activity transformation of the key enzymes of yeast metabolism ( $\beta$ -fructofuranosidase, hexokinase, fumaratehydrotase). The most essentially increased the activity of  $\beta$ -fructofuranosidase, the synthesis of which is directly connected with cytoplasmic membrane. In lesser extent modifies the activity of hexokinase localized in the cytosol. Practically does not change the activity of fumarate-hydratase, which activity is associated with mitochondria. All this suggests that the energy of the electromagnetic field has a direct impact on the yeast cells membrane.

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