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Influence of Dispersed Solutions of Copper, Silver, Bismuth and Zinc Oxide Nanoparticles on Growth and Catalase Activity of *Penicillium funiculosum*

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It was shown that water dispersed solutions of silver at concentrations of 10⁻⁹ mol/l, 10⁻⁷ mol/l, 10⁻⁵ mol/l and bismuth at concentrations of 10⁻⁷ mol/l, 10⁻⁵ mol/l, 10⁻¹ mol/l stimulate growth of biomass and catalase activity at *Penicillium funiculosum* CNMN FD 11 strain. The maximum effect for the two parameters was obtained with the dispersed solution of silver at a concentration of 10⁻⁵ mol/l, bismuth at a concentration of 10⁻⁷ mg/l and zinc oxide at a concentration of 10⁻⁷ mg/l. The use of water dispersed solutions of copper at concentrations of 10⁻⁷ mg/l, 10⁻⁵ mg/l, 10⁻¹ mg/l showed the inhibiting effect or the absence of physiological effects on growth and catalase biosynthetic processes of *Penicillium funiculosum*. The inhibiting effect was produced by the solution of copper at a concentration of 10⁻⁷ mg/l. The method can be used for optimising conditions for the submerge cultivation of non-pathogenic microorganisms.