

THE DEVELOPMENT OF PIGMENTED BACTERIA IN WATER SAMPLES AND THEIR BEHAVIOUR TOWARD THE ACTION OF SYNTHETIC ANTIMICROBIALS

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Abstract

Pigmented bacteria as *Chryseobacterium* spp., *Serratia marcescens*, and *Chromobacterium violaceum* are an important group of microorganisms distributed in water, liquid products, soil and other environments. An experimental work was conducted related with the isolation and identification of some pigmented bacteria from water samples and the monitoring of their development under the action of synthetic antimicrobials. The aim of the study was not focused only in the reduction of the growth of those microorganisms but in evidencing also the changes in some of their morphological characteristics under the action of the pharmaceutical product Vibramycin (generic name: doxycycline). This is a known product for its powerful antimicrobial activity. (The research work was based also in the former results achieved observing the action of other antimicrobials in the growth of non-pigmented bacteria).

Microorganisms were isolated from samples of water taken from water supply network. Isolated, purified and identified bacteria, were treated with Vibramycin solutions in different concentrations in order to observe all the changes of macro colonies and their characteristics. The treatment was performed using disk diffusion antibiotic sensitivity testing (KB-testing). The discoloration of light absorbing compounds, the reduction of the size of colonies and sporulation tendencies were evaluated.

An interesting conclusion was the fact that in pigmented bacteria the cell wall integrity was affected as well as evident changes in the specific chemical characteristics and reproduction process. This ultimately resulted in some cases of creation of mutant forms.

Key words: *Chryseobacterium* sp., *Serratia marcescens*, *Chromobacterium violaceum*, Disk diffusion method, Light absorbing compounds, Cell wall, Mutant forms.