

**TITLE:** THE IMPORTANCE OF THE TEACHING OF MICROBIOLOGY: APPROACH PRACTICAL-THEORETICAL THROUGH THE STUDY OF THE ANTIMICROBIAL ACTIVITY OF NATURAL PRODUCTS

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**ABSTRACT:**

Microbiology is the branch of science that studies the microorganisms - or microbes. Microbes are divided into: bacteria, fungi, archaea, protozoa and microscopic algae, in addition to viroses. Thus, the present study aims to highlight the importance of theoretical and practical activity in the education of high school students, as well as instruct them on the indispensable role of microbes in everyday life and health. The employed research method counted on the accomplishment of a laboratory activity, which emphasized the efficiency of the use of natural products as antimicrobials. Initially, disk diffusion test was used to assess the antimicrobial potential of the substances in propolis, garlic and cloves extracts, when exposed to microbial cultures taken from four specific environments: surface of mobile phones, door handles, toilet flush handles and air. The microbial cells present in the cultures obtained were classified according to Gram staining method. Finally, such staining analyzes concluded the presence of Gram positive bacteria in 3 of the 4 environments studied. Different sensitivity levels to extracts of propolis and cloves were also observed. After the experimental approach, theoretical and practical classes were developed for two classes of sophomore students. A survey was conducted to assess the level of the students' previous knowledge on the subject and then a theoretical class was carried out, using a self-made handout especially for this purpose as contained basic information about microbiology. The experimental practical class, on the subsequent week, was reproduced within the same principle of the sensitivity tests carried out in the laboratory, however, with low cost and easily obtainable materials. A last visit to the school was fulfilled in order to compare the results obtained by the students and to finish the activity. The results after the application of the survey, at the end of the activity, suggest content absorption and consequently, the importance of an association between theoretical and practical activities in the process which students construct their knowledge. The practical activity aroused curiosity and opened space for students' participation, thus contributing to a dynamic and significant learning. In general, to comprehend the importance of microbial activity and of keeping good practices as the responsible drug use together with ingest ion of natural products, allows us to remain healthy and keep life quality.

**Keywords:** bacteria, teaching methods, health, disk diffusion test.



Figure 1: Students performing the practical activity in the classroom.