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**INHIBITORY ACTIVITY OF PROPOLIS
AGAINST SOME MICROORGANISMS**

RESEARCH STUDY

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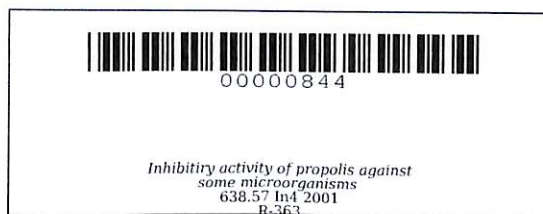
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AGAINST SOME MICROORGANISMS**

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of the Requirements for Graduation**



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ABSTRACT

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Adviser: Dr. Yolanda A. Ilagan

This study was conducted at the Microbiology Research Laboratory from December 2000 to January 2001. Generally, the study aimed to determine the anti microbial spectrum of propolis.

Activities of propolis extracts were determined by agar well assay method. The test organisms used were bacteria (*Proteus vulgaris*, *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas fluorescens*, *Salmonella typhimurium*, *Micrococcus luteus*, *Staphylococcus aureus*, *Bacillus subtilis*, *Bacillus cereus*); molds (*Aspergillus niger*, *Penicillium notatum*, *Mucor alternaria*) and yeast (*Candida utilis*, *Debaryomyces hansenii*).

Based on the preliminary experiments, propolis is not inhibitory with molds and yeast cultures.

The statistical tool that was used in the study for analyzing the data was Analysis of Variance (ANOVA).

Analysis of Variance revealed that there were significant differences among the four treatments. Results showed that ethanol extracted propolis (T₁) showed strong inhibitory activity against *M. luteus*, *S. aureus* and *B. cereus*. On the other hand,

commercial propolis I (T₂) showed moderate inhibitory activity against *M. luteus* and *S. aureus* while commercial propolis II (T₃) showed a weak inhibitory in almost all the bacteria except in *S. aureus*.

Results revealed that propolis is more effective against gram-positive bacteria particularly the gram-positive cocci.

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INTRODUCTION

Propolis is a resinous yellow-brown substance which seeps from the buds of certain trees. This is collected by bees and mixed with saliva, other bee secretions and wax. Propolis reinforces the hive and protects it from bacterial and viral infections. These latter properties have been found helpful to humans.

One of the most widely known properties of propolis is its antimicrobial activity. Scientific tests have been conducted with a variety of diseases and promising results have been obtained. The tests have shown positive control of the organisms by various extracts and concentrations. The interest in the study was derived partly from the antimicrobial property of propolis to identify the specific microorganisms that it could inhibit.