

ANTIBIOTIC ACTIVITY OF THE COLOMBIAN PROPOLIS AND ITS CORRELATION WITH THE ECORREGIONES OF PRODUCTION



UNIVERSIDAD
NACIONAL
DE COLOMBIA

LABORATORIO DE MICROBIOLOGÍA
FACULTAD DE MEDICINA
VETERINARIA Y DE ZOOTECHNIA

Cesar Talero, Judith Figueroa
Facultad de Medicina Veterinaria y de Zootecnia
Universidad Nacional de Colombia



ABSTRACT

Fifty propolis samples of *Apis mellifera* from Colombia corresponding to the regions of Santander, Boyacá and Cundinamarca, were collected to establish biological activity with ethanol extraction (EEP) of 70% and 96% against different microorganisms; research in process in the laboratory of microbiology in the veterinary and Animal Husbandry from the National University of Colombia, which makes part of the “program of strategies to establish origin designation of bee products in Colombia”. It is being analyzing the total soluble solids –TSS and the technique of Microdilution Minimum Inhibitory Concentration (MIC) to assess the antibacterial activity and antifungal activity against reference strains: *Escherichia coli*, *Staphylococcus aureus* and *Trichophyton rubrum*. The protozoa growth inhibition from *Chilomonas paramecium* is being determined by culture along with the propolis. In the case of TSS the samples in ethanolic extraction at 70% and 96% were obtained $27,5 \pm 30,8$ to $186,7 \pm 48,2$ mg/ml and $77,1 \pm 61,4$ to $281,4 \pm 70,5$ respectively. The analysis of MIC confronted to *E.coli* in six dilutions 1:2 of propolis in Muller Hinton Broth from 3,2 to 0,1 for antibacterial activity with EEP 70% and EEP 96% showed a minimum concentration of 0,4 mg/ml and 0,8 mg/ml as the concentration with inhibit activity for most of samples. The fungicidal effect in evaluation with seven dilutions 1:2 of propolis in PDA agar from 32 to 0,5 mg/ml with EEP 70% and EEP 96%, so far has revealed a trend to inhibit the growth of *T. rubrum* with higher concentrations of propolis.

METHODOLOGY



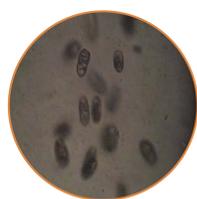
Extraction for Total Soluble Solids from samples at 70% y 96%



Antibacterial
Activity Analysis
Staphylococcus aureus ATCC 6538 and *Escherichiae coli* ATCC 31617



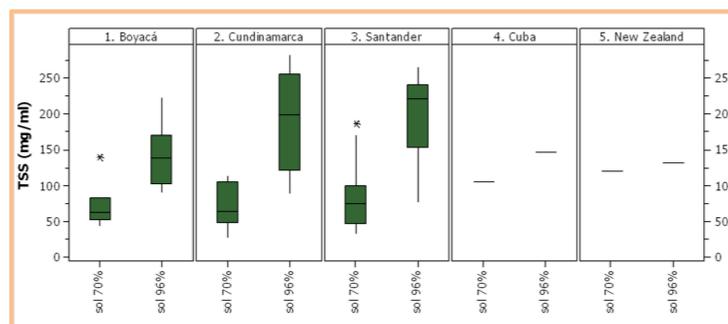
Antifungal
Capacity
Trichophyton rubrum ATCC 28188, as an applied model of dermatophyte fungi



Protozoa
growth
inhibition
assessment for
Chilomonas paramecium

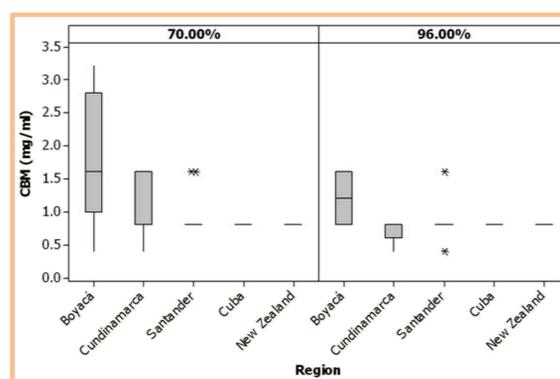
RESULTS

TSS (mg/ml) from three geographical origins

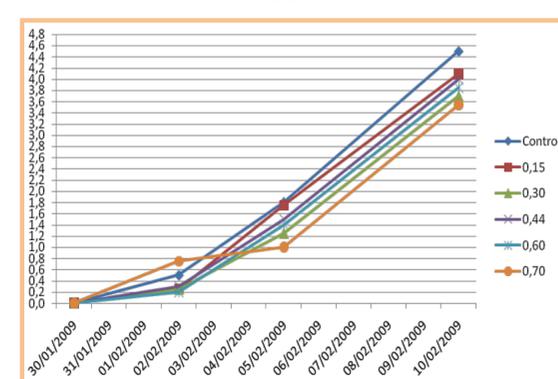


Colombian propolis do not present significant differences for TSS between regions with 96% or 70%, but they do within the same region.

MIC for EEP70% and EEP96% from three geographical origins against *E. coli*



Growth evaluation of *T. rubrum* with EEP



CONCLUSION

Propolis extracts of 96% showed antibacterial effects more homogeneous when compared to extracts of 70%. The propolis from Boyacá behaved similarly, while Santander samples showed more variability. Preliminary essays demonstrate susceptibility from the microorganisms in assessment at different concentrations of Colombian propolis.

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Info: catalerou@unal.edu.co