The Effect of Honeybee Byproducts on Bacteria

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The purpose of the experiment was to investigate the antibacterial properties of honeybee byproducts, such as local honey, Manuka honey, propolis, pollen, and beeswax. The hypothesis of this project was if the bacteria are exposed to honeybee byproducts then the propolis will have the largest area of inhibition. Plates of tryptic soy agar with 5% sheep blood were inoculated with Streptococcus pyogenes (S. pyogenes) and Staphylococcus aureus (S.aureus). The bacteria were grown for 48 hours at 37 °C, and then were exposed to 0.1 mL of honeybee byproducts. The plates were returned to the incubator and the area of inhibition was measured at 24, 48, and 72 hours. For the purpose of this project the area of inhibition is defined as the widest point of the area of dead bacteria which was measured in millimeters. Propolis had the largest average area of inhibition on the S. aureus at 3.5 mm, and Manuka honey had the largest area of inhibition on the S. pyogenes at 4.1 mm. The hypothesis was partially supported. This experiment contributes to the study of new antibiotic treatments which is important due to the increasing number of antibiotic-resistant bacteria.

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