Sweet Zones of Inhibition: The Antimicrobial Efficacy of Honey against Gram Positive and Gram Negative Bacteria as Compared with Antibiotics

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Throughout the ever evolving world of science & microbial organisms, it is common to notice a resistance that bacteria develop against common antibiotics. Provided, this has created a difficulty surrounding prescribing the necessary care for patients suffering from the presence of unhealthy bacteria in their system such as Staphylococcus aureus, Bacillus cereus, Proteus mirabilis, Micrococcus luteus, Escherichia coli, & Pseudomonas aeruginosa. In an effort to establish a natural & inexpensive alternative to antibiotics, such as Erythromycin, Tetracycline, & Penicillin, honey was put to the test. It was hypothesized that honey would create a ZOI on all gram positive & gram negative bacteria, & both would create a larger ZOI than the antibiotics. Of the two honey samples, the unprocessed sample was predicted to eliminate the largest amounts of bacteria overall. In order to test these predictions, lawns of each bacteria were created on agar filled petri dishes & a disc containing the desired antibiotic or honey type was placed onto the lawn of bacteria. After given time to incubate, the ZOI created, if any, was measured & recorded. It was crucial to repeat the experiment in order to obtain accurate data. Both processed & unprocessed honey had success at eliminating a certain extent of bacteria & creating a ZOI on all bacteria lawns. Unprocessed was more effective & showed larger ZOI when tested on gram-positive bacteria while the processed honey was more successful when tested on gram-negative bacteria. Natural honey displayed the largest ZOI out of all tests on bacteria such as Pseudomonas aeruginosa & Escherichia coli. Antibiotics appear to be the most trustworthy solution for others. Overall, honey can be used as a remedy & healing agent against common bacteria.

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