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### Minimum Inhibitory Concentration of Essential Oils on *Candida Albicans* and *Candida Tropicalus*

*Candida* is a genus of yeast found worldwide and most commonly as a natural part of human flora. In immunocompromised individuals, *Candida* can pass through the mucosa membrane and cause serious infections. The purpose of this experiment was to evaluate the effectiveness of essential oils as a cheap alternative to treating and preventing yeast infections. This experiment focused on testing three different essential oils; Cinnamon Bark oil, Lemon Grass oil and Citronella oil and comparing their effectiveness in inhibiting the growth of *Candida* fungi.

#### Methods 1: Serial dilution and Assay

*Candida* samples were isolated and then allowed to incubate for 24 hours. After incubation the *Candida* samples were then diluted down to a manageable ratio. The diluted samples were then placed into a 96 well plate and then an essential oil treatment was applied to each row. After incubating for 24 hours the 96 - well plate was then analyzed using a spectrophotometer. Up to a certain concentration there was found to be a direct correlation between the concentration of essential oils and the level of inhibition of the *Candida* sample. However the turbidity of the essential oils shifted the data retrieved from the spectrophotometer.

#### Methods 2: Plate Count

Plate Counts were performed in order to further quantify the level of inhibition by each of the essential oils. *Candida* samples that were treated with the essential oils were diluted into PBS Buffer and then plated on SDA Agar. After incubation individual colonies were counted and then quantified in order to again measure the level of inhibition by the essential oil.

#### Conclusion

The data yielded from this experiment was invaluable and could be beneficial in future studies. From the results of this experiment it can be inferred that the three essential oils in this experiment worked as powerful fungal statics. The essential oils examined in this experiment do not kill the fungus but are effective in inhibiting the growth of the fungal spores.