

Investigating The Effects of Pharmaceutical Waste on The Growth of Cyanobacteria- Spring 2020 Cottey College

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Research Background and Importance

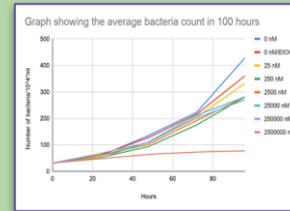
- Cyanobacteria is a photosynthetic organism found in surface water bodies.
- The particular strain of study was *Microcystis aeruginosa*.
- Anti-inflammatory drugs like Caffeine and Ibuprofen are recorded to be in high concentrations in Missouri water bodies.
- Little information is known about how these drugs affect cyanobacteria.



- Our hypothesis was that an increased concentration of Ibuprofen will have a negative impact on the growth of the cyanobacteria.

Methods, Results, Conclusions and Future Directions

- The cultures were grown in an AlgaeTron incubator under fluorescent light intensity of 22.5% and amplitude of 30% at 26°C for 168 hours in different Ibuprofen concentration.
- Every 24 hours, the bacterial count was observed using the haemocytometer and compound microscope.



- IC₅₀ values were 3450 nM at 96 hours, 450 nM at 144 hours and 225 nM at 168 hours.
- Recorded values showed a decrease in bacteria growth and established our hypothesis.
- Pigments and cyanotoxin production effects will be investigated in the future.

Lab Experience



Skills and Lessons

- Experience with hands-on and practical way of research.
- Exceptional multi-tasking and time management skills.
- Proper documentation of data and information.
- Cooperation and collaborative skills with supervisor.
- Increased knowledge and techniques with the use of complex instruments.

