Algae Discussion

Our hypothesis was rejected by our results. Although there was a positive relationship between the amount of urea added and the average growth for the first 4mL, once the amount of urea hit 6mL, the relationship stopped. Urea is a nitrogen source, and algae needs nitrogen to grow. However, the large amounts of urea that we added into our fourth bioreactor could have oversaturated the water with nitrogen. This could have caused the algae to have too much nitrogen and lead to a decrease in cell growth. A revised hypothesis would be that the amount of urea added will lead to more algae growth until the urea concentration becomes too high and inhibits the algae’s growth. A similar experiment was conducted to observe the relationship between algae growth and amounts of urea (Carder et al. 2017). In that experiment, they found that the relationship between urea added and algae growth was constantly positive (Carder et al. 2017). However, that experiment only tested the range of 40 µL to 120 µL, which is a significantly smaller range than what this experiment used (Carder et al. 2017). Their urea concentration was never high enough to have the same effects that our highest concentration had, but they did show increases in growth at the lower concentrations like our experiment did (Carder et al. 2017). Through this experiment, it can be seen that algae growth can be increased by certain amounts of urea, but there is a limit. Too much of a nitrogen source, such as urea, can limit the growth of algae in nature. This can be used to combat eutrophication and in the creation of biofuels.

* What does this discussion include for their broader implications and future research?
* How did they relate their results to the results of previous studies?
* What explanations did they offer for the results that they got? Did these explanations make sense scientifically?
* From what you read, what type of studies should you compare your studies to?
  + What type of future research should you consider?
  + What type of broader implications should you consider?