

## **Mixotrophic growth and ingestion rate of *Kryptoperidinium triquetrum* under different light levels**

Mixotrophy is a method of acquiring nutrients and energy that combines both photoautotrophy and phagotrophy. Plankton that can undergo mixotrophy are known as mixoplankton which can behave as both a primary producer and primary consumer, depending on the environmental conditions and prey that are available. This research focused on the impact of light level on mixoplankton due to studies suggesting that as light decreases then mixoplankton will rely more on phagotrophy due to the loss of light to undergo phototrophy. The main goal of this project was to investigate if a constitutive mixoplankton, *Kryptoperidinium triquetrum*, will ingest on a diatom, *Thalassiosira pseudonana*, with decreasing light levels. The project also investigated how growth rates of *K. triquetrum* and *T. pseudonana* differed with decreasing light levels. Results suggest that *K. triquetrum* does not consume *T. pseudonana* even with decreasing light levels. Growth rates of *K. triquetrum* only and mixed treatments with *T. pseudonana* had no significance as light level decreases, and growth rates of *T. pseudonana* only and mixed treatments with *K. triquetrum* were significant once light level reached quarter light. Ultimately, the data suggests that *K. triquetrum* may be a specialist constitutive mixoplankton for only consuming specific plankton/bacteria. Future studies should investigate *K. triquetrum* ingestion not only with a greater range of decreasing light, but as well as decreasing nutrients and various plankton and bacteria for a better understanding of mixotrophy in plankton.

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