

The Effects of Diet on the Foot Color of *Mactromeris polynyma*

Downeast Institute of Applied Marine Research and Education

Our OBSERVATION

Cody Jourdet from DEI showed us a huge clam called *Mactromeris polynyma*, the Arctic Surf Clam. He told us that it is known for its red foot.* We wondered why its foot is red. We wondered if it is because of what it eats. If we fed it only green algae called MC2 or Tetraselmis, would its foot turn green? We noticed that the foot on a young clam looks like our soft-shell clam and has not even turned red yet.

Our RESEARCH QUESTION

HOW DOES THE COLOR OF FOOD AFFECT THE COLOR OF AN ARCTIC SURF CLAM'S FOOT IN A CONTROLLED ENVIRONMENT OVER A FIXED TIME PERIOD? If all other conditions remain the same, such as water, food, and temperature, what effect(s) if any, does the color of algae have on the Arctic surf clam's foot?

*People like to eat it raw as a sushi called Hokkigai.

Our HYPOTHESES

If Arctic surf clams (*Mactromeris polynyma*) are placed in an environment protected from predators and all other variables remain the same, the color of the clam's foot will 1) stay the same, or 2) turn green, if it is fed a diet of green algae.

The control group of Arctic surf clams will not eat green algae.



Our PROCEDURE

For this research project, which we started in Mid March 2016, we fed our clams green algae. Each week we cleaned their tank. We looked at them each week to see if we could see any changes. Sometimes the green algae seemed to stain them a little bit.



Our DATA

At the end of May 2016, we looked them over for the last time before school got out. We made many **CONCLUSIONS**. Some of us thought the feet on many clams were beginning to look green. Others thought the shells on many clams were beginning to look green. We could not tell for sure. We decided for our **NEXT STEPS**, that we would try this again.



The Arctic Surf Clam, *Mactromeris polynyma* grows naturally in the Gulf of Maine. No commercial fishery for Arctic Surf Clams exists in the United States at this time.

Find our more at www.downeastinstitute.org

