The Results of the pilot study were not sufficient for exhibit mixed responses to All pit with a sample elemental composition (One larva from each pilot treatment was

Larval lobsters reared at the New England Aquarium; Larvae that survived the 10 days were

Hypotheses:
Under conditions of decreased pH and increased temperature, we expect to see:
1. Decreased shell growth and changes in CaCO₃ mineral composition and abundance.
2. Increased susceptibility to disease and effects on survival.
3. Downregulation of genes involved in shell biomineralization.

The preliminary results of a 10 day pilot study are presented here.

Methods

- Larval lobsters reared at the New England Aquarium (Fig 2), transported by cooler to UMB.
- Four pH/Temp pilot treatments of: 8.1/16C, 8.1/24C, 7.6/16C, 7.6/24C.

Pilot Study Lessons Learned and Next Steps:
- Adjust highest temperature for treatments.
- Develop alternative method for taking a cross section of fragile larval shell – resin?
- Cross sections are likely to see and quantifying CaCO₃ crystals.
- Determine if differences in epicuticle texture translates to low pH and high temperature.
- Complete full experiment to test for connection between OA/temp and susceptibility to epizootic shell disease.

Discussion

Results of the pilot study were not sufficient for doing statistical analyses or to quantifiably show support for our first hypothesis.

Acknowledgements

Robert Holmberg
MIT Sea Grant Program
The New England Aquarium
UMB Environmental Analytical Facility (EAF)
Hannigan lab group

References