Application of Triploidy to an Emergent Oyster Culture Industry on Florida's West Coast: Results of Health Assessment

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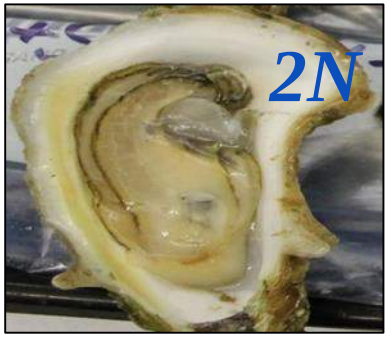


OBJECTIVE:

1) Assess health of diploid (2N) and triploid (3N) oysters

- site
- gear

Funded by:

NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

Sea Grant Florida

2015-2018

Methods

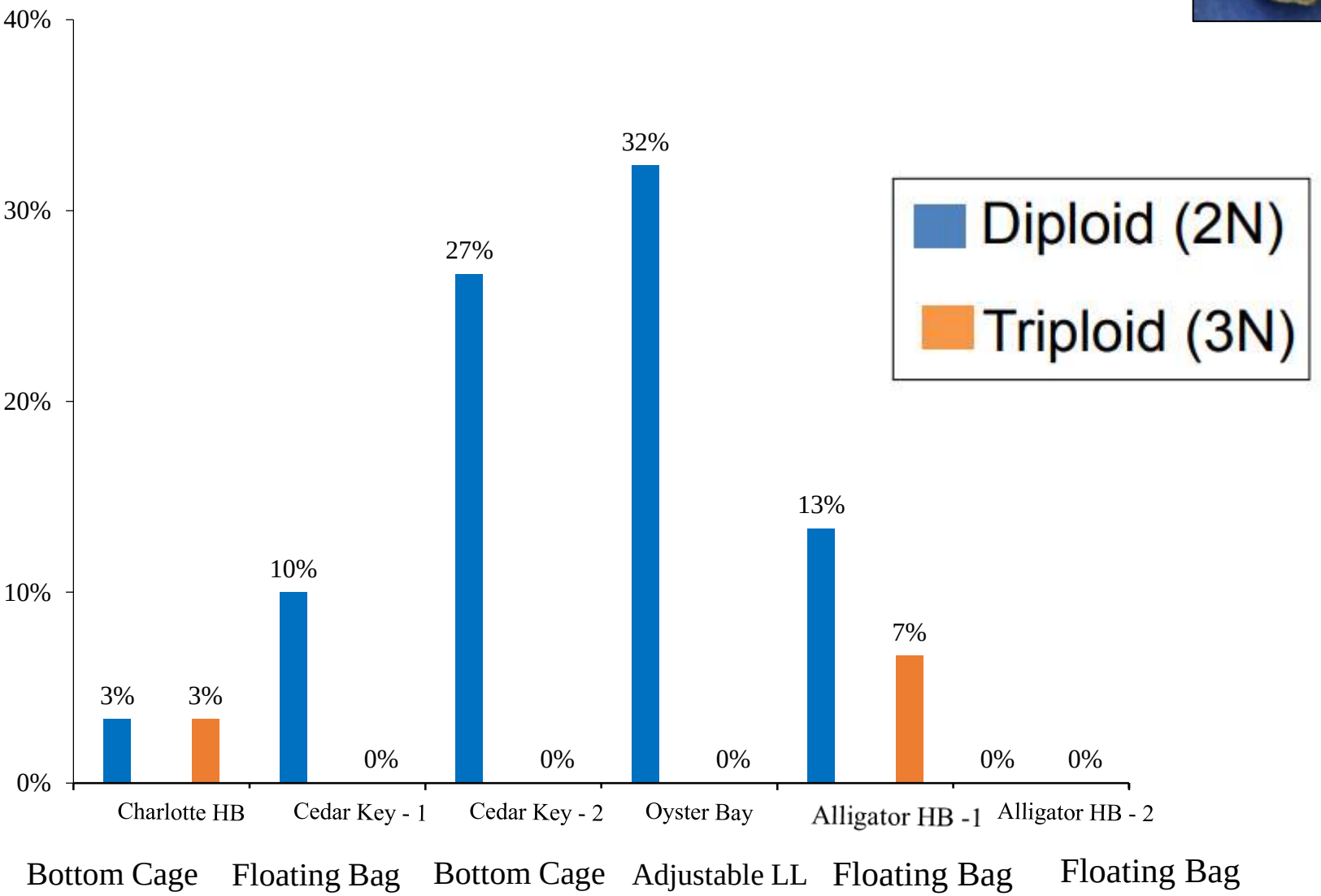
- Trial 1: Plant July/August 2016 / Harvest March/April 2017

- Trial 2: Plant March/April 2017 / Harvest October/November 2017

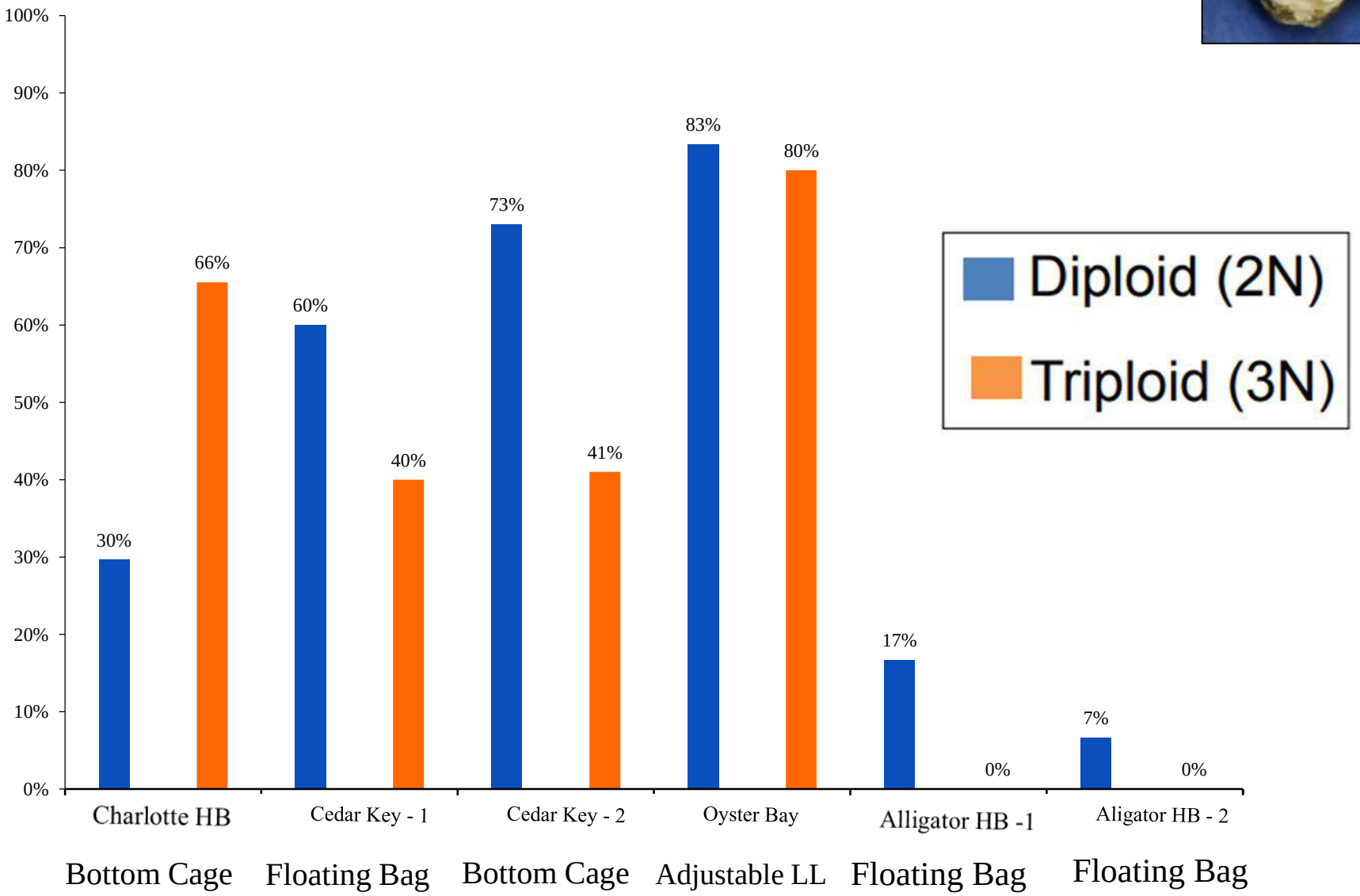
VARIABLES MEASURED:
Variables Reporting

- Shell Metrics
  - Shell height
  - Shell length
  - Shell width
- Weight Metrics
  - Total weight
  - Meat weight (wet)
  - Shell weight
- Prevalence of Pests and Parasites
  - Boring Sponge (*Cliona* sp.)
  - Mudblisters (*P. websteri*)
  - Cestodes and trematodes
  - Dermo (*P. marinus*)
- Physiological Condition
- Digestive Tubule Atrophy

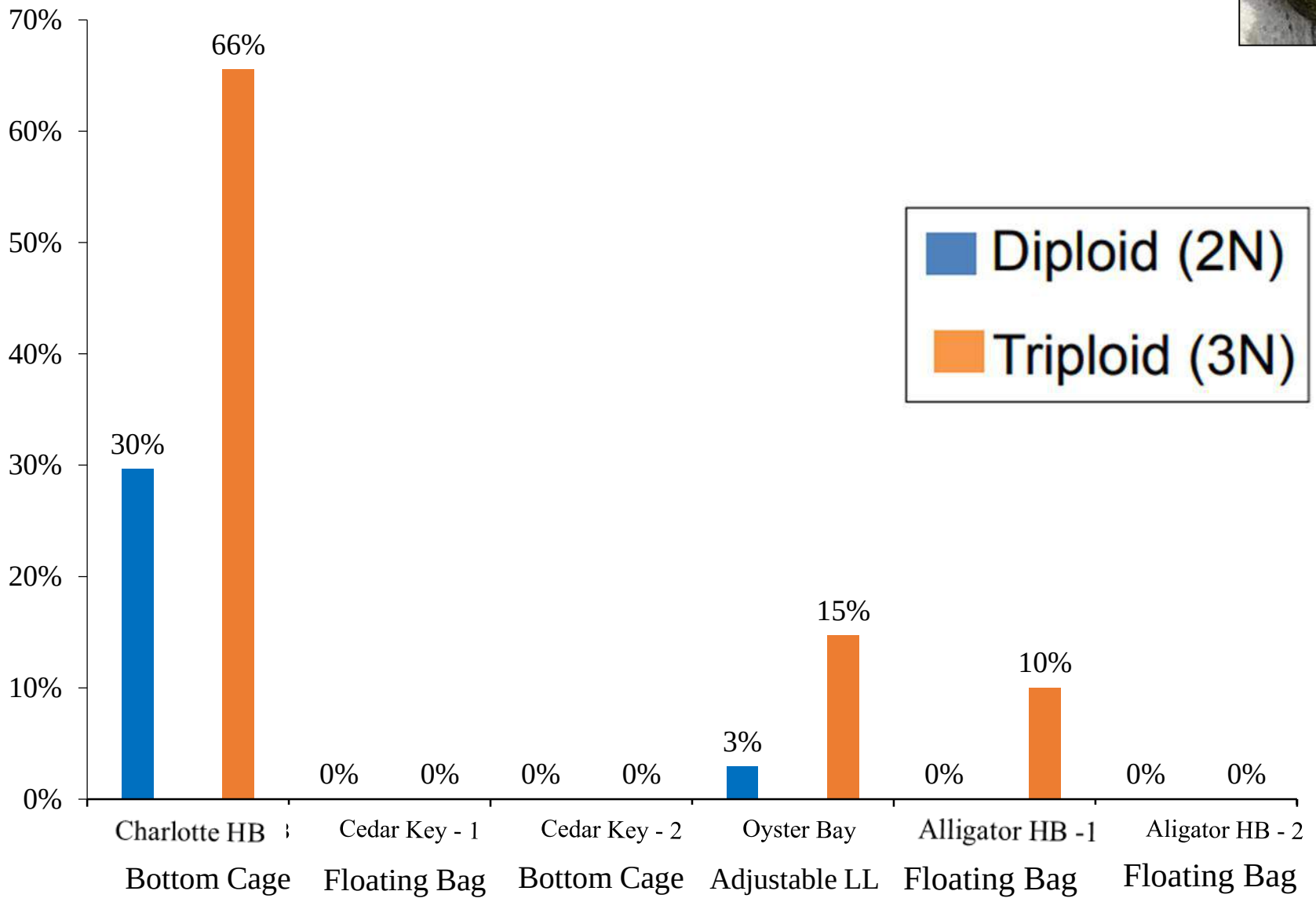
Trial 1: Mudblisters (*P. websteri*)



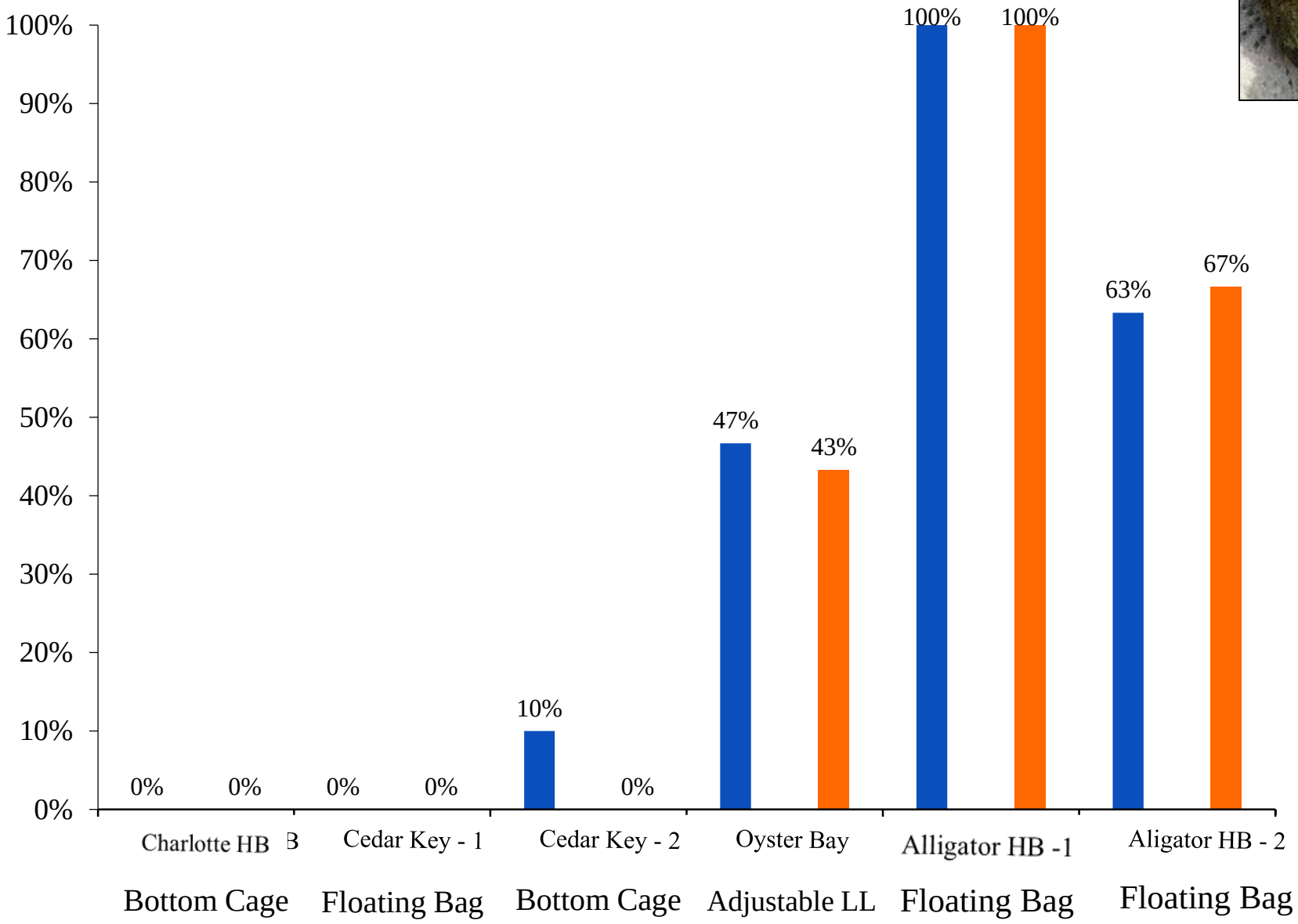
Trial 2: Mudblisters (*P. websteri*)



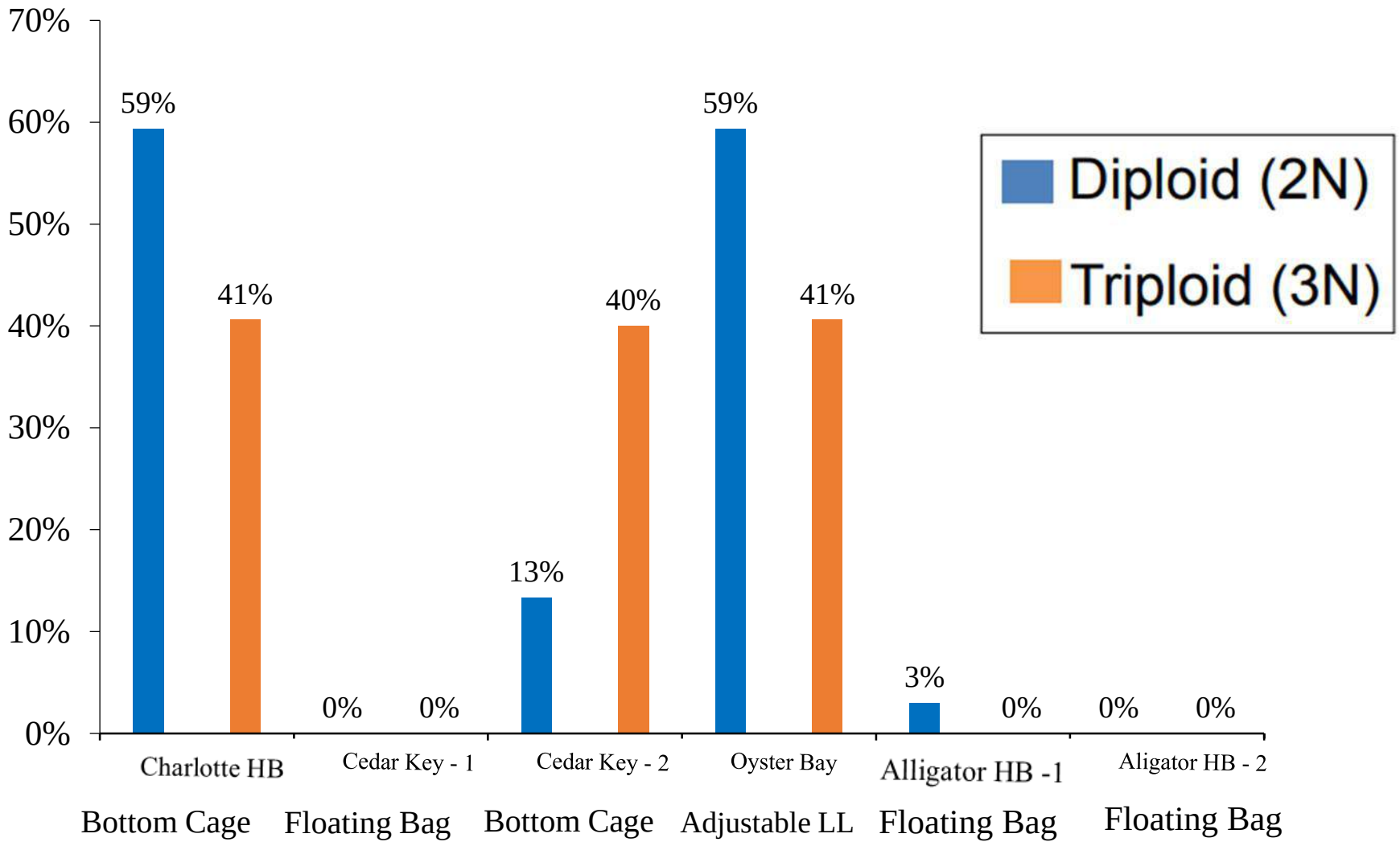
Trial 1: Boring sponge (*Cliona* spp.)



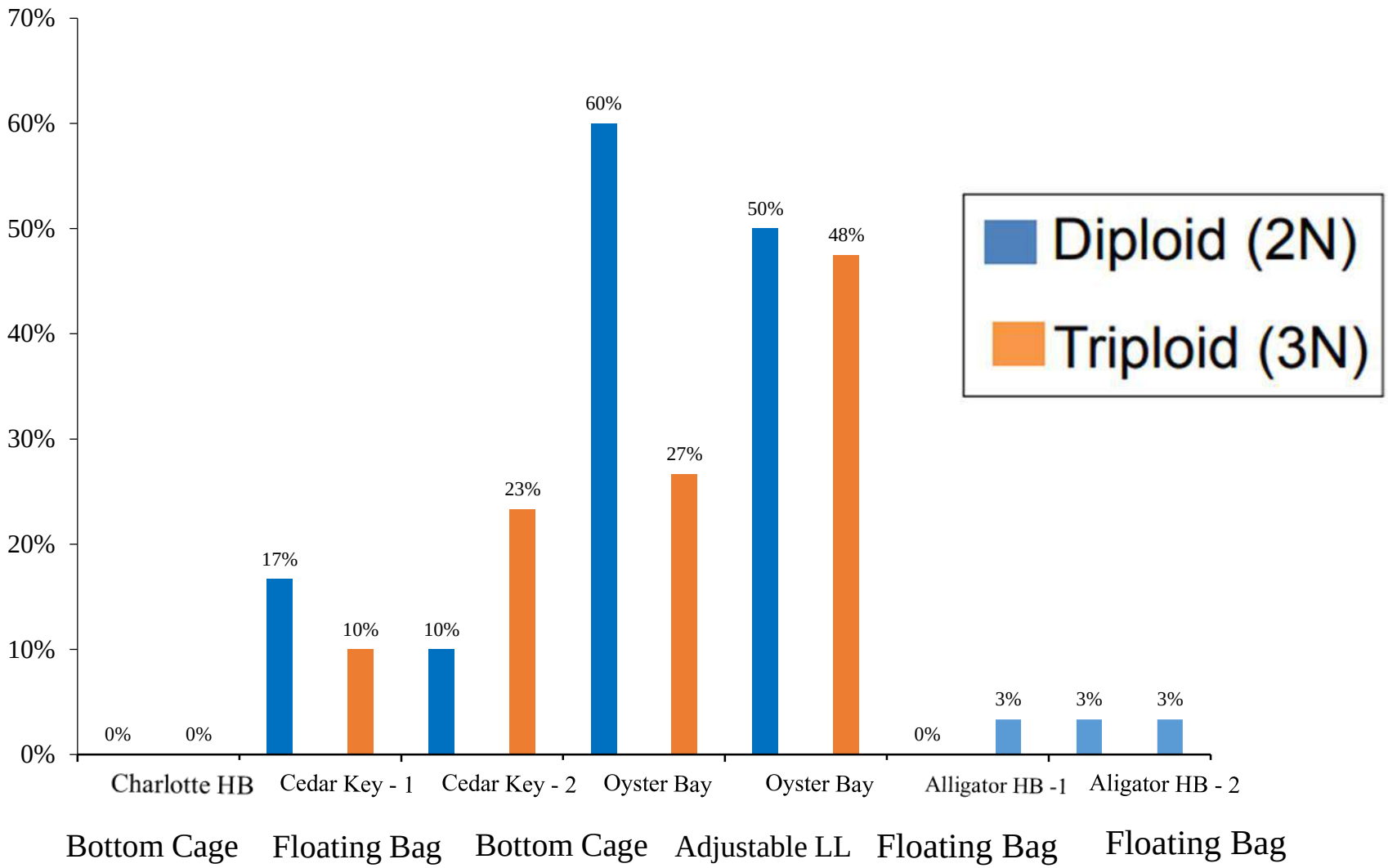
Trial 2: Boring sponge (*Cliona* spp.)



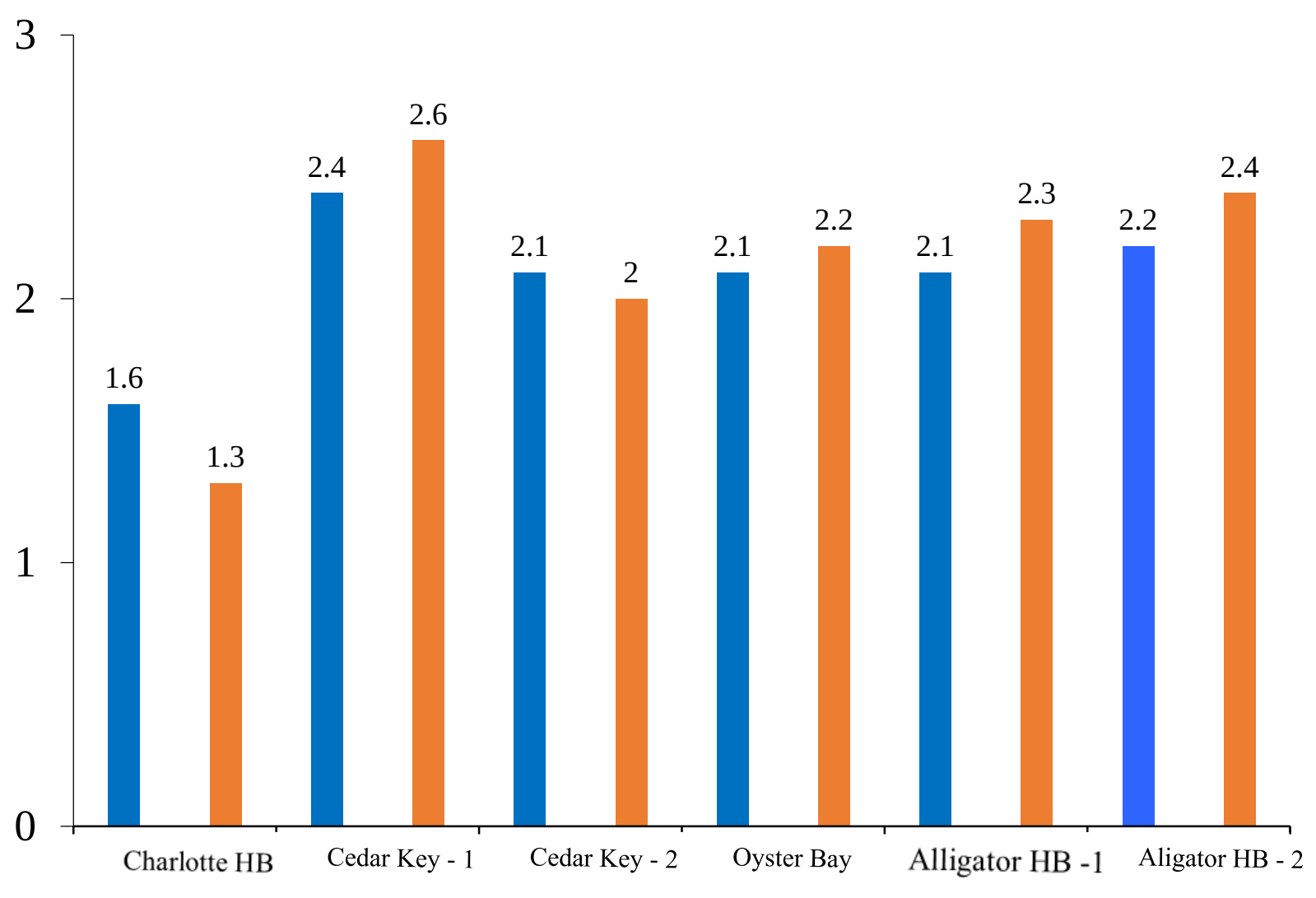
Trial 1: Prevalence of Dermo (*P. marinus*)



Trial 2: Prevalence of Dermo (*P. marinus*)



Trial 1:Physiological Condition



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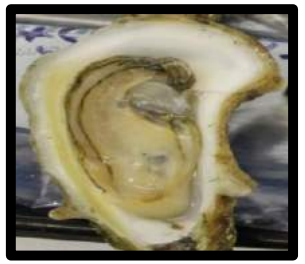
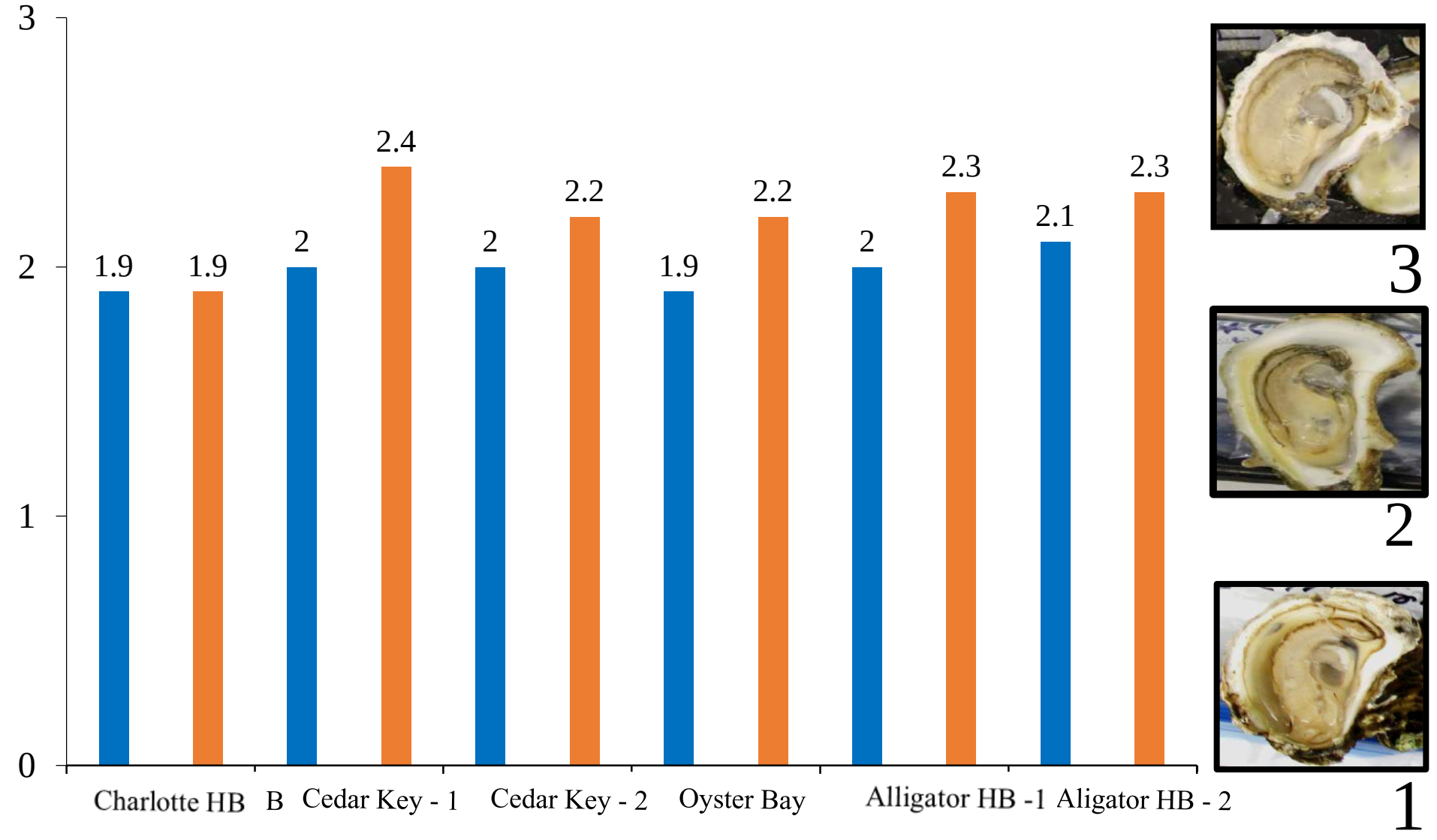


2

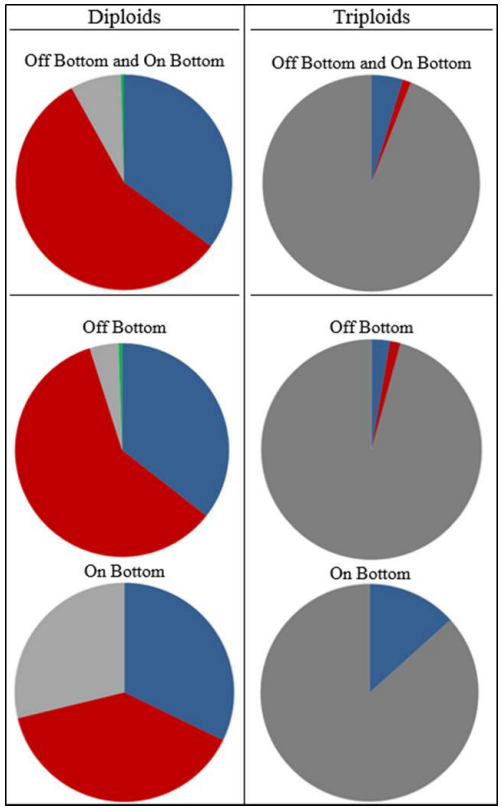
1

Trial 2:Physiological Condition



Trial 1: Presence of food in the Gut and Sex Ratios

Sex Ratios



Sex ratios of diploids and triploids reared using on and off bottom culture methods; red = females, blue = males, grey = undifferentiated

Presence of food in the gut

- A larger percentage of guts were full for oysters reared using adjustable longline and floating bag gear
- Diploids and triploids had similar percentages food present in the gut across sites

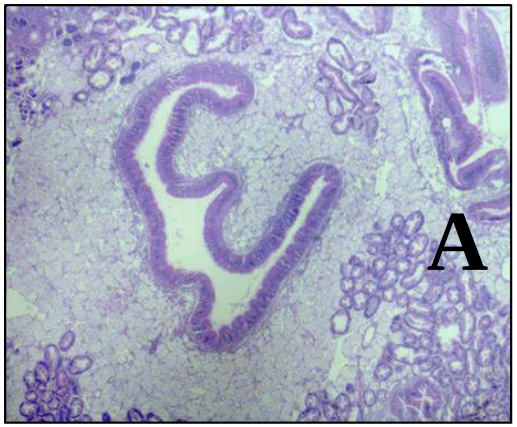


Figure. Cross section of *C. virginica* reveals absence (A) or presents (B) of food in the gut

Conclusions

Take Home

- Benefits derived from using triploids may be seen in the form of:
  - improved digestive system health
  - improved physiological condition for fall harvest
  - increased size
  - decreased prevalence and severity of mudworms
- The degree to which farmers can expect to benefit from using triploids oysters is likely dependent on:
  - culture methods
  - site to site variability (salinity and temperature)
- Fall plant may
  - reduce prevalence of mudblisters
  - improve physiological condition

2N **3N**

Acknowledgements

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