Bioassays with Sea Lice, a Tool in Integrated Pest Management

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Integrated Pest Management (IPM)

- IPM is a broad-based approach that integrates various practices to reduce pests and the damage they cause.

- An important aspect of an IPM is long term monitoring of the sensitivity to available treatments to track changes in sensitivity.

- This can help to inform treatment practices.
Bioassays as Monitoring Technique

- Limited number of treatment options can result in decreased sensitivity in sea lice
- Monitoring any changes in this sensitivity is critical to inform treatment plans
- Standardized assays such as bioassays can provide information about changes in sensitivity over time and geographical location
Conducting the Bioassay
Sea lice are assessed at 30 minutes and 24 hours post treatment using a dissecting microscope (ie. Dead, Moribund, or Alive).

Assessments are done by one person blind to treatment to eliminate observer bias.
Calculation of Lethal and Effective Dosages

Dose response curves are generated to estimate lethal and effective dosages.

These curves and the LC50 and EC50 can be compared over time and geographical location to assess changes in sea lice population sensitivity.
Take Home Message

Having a standardized method of monitoring the sensitivity of sea lice over time and geographical location is critical to inform treatment plans as part of an integrative pest management plan.
Acknowledgements

- Thank you to the Cooke Aquaculture
- Thank you to the UMAHL/ARI team
  - Dawna Beane
  - Emily Thomas
  - Sarah Turner
  - Scarlett Tudor