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A Comparison of the Performance of Disinfection Agents on Smallmouth Grunt (Haemulon chrysargyreum) Eggs

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Tory Stoddard[1], Quint Heyder[1], Alyssa Leonardi[1], Andrew Saltzman[1]

[1]Roger Williams University

Tory Stoddard

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Protocol status: Working
We use this protocol in our group and it is working.

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Abstract

Fish egg disinfection is a common practice in aquaculture facilities to prevent disease and improve the hatch rates of fish eggs. This process helps remove bacteria, fungus, and other unwanted organisms from eggs. Iodine was found to be the most effective disinfecting agent based on available literature and recent experimentation.

Materials

- Smallmouth grunts (*Haemulon chrysargyreum*) eggs
- Iodine
- 5 separate glass dishes
- 2-3 plastic pipettes
- 10 mL graduated cylinder
- Two 40µm siv's
- Heated trough at 27 degrees celsius

Safety warnings

If disinfectants are consumed or come in to contact with the eyes of any individuals, appropriate emergency protocols should be initiated. Safety goggles and gloves are recommended while performing this experiment. Contamination resulting from human contact with the samples should be avoided.

Before start

The surface where the experiment is to be performed should be cleaned, as well as all the equipment. Safety goggles and gloves are recommended.

1 Separate eggs from aerated collection bucket using a 40µm siv.

2 Pipette a few milliliters of eggs from the 40µm siv into a 10mL graduated cylinder.

3 Prepare the disinfectant bath by filling the watch glass halfway with filtered seawater. Then, add 1mL of iodine per 1L of filtered seawater.

4 Prepare another watch glass filled with just filtered seawater.

5 Once the eggs have settled and floated to the top, measure the eggs volumetrically and pipette 0.3mL of eggs out.

6 Make sure to pour the leftover eggs back into the collection bucket, so they do not get deprived of oxygen.

7 Place a 40µm siv into the iodine treatment bath and pipette the 0.3mL of eggs into the siv. Carefully and slowly swirl the siv in a circular motion in the treatment bath for about 30 seconds to mix the contents. Allow the eggs to be exposed to the iodine treatment for 5 minutes using a timer.

8 After 5 minutes rinse the eggs in filtered seawater by placing the siv from the treatment bath into the watch glass filled with filtered seawater only. Similar to the treatment bath, carefully and slowly swirl the siv in a circular motion in the filtered seawater bath for about 30 seconds.

9 Pipette ~0.1mL of eggs from the siv into each of the three watch glasses containing filtered seawater.

10 Place the three watch glasses of eggs into the heated trough.