

COCAHOE AIR INCUBATION

Cocahoe minnows are adapted to having their eggs exposed to air and water due to rising and falling tides. In the wild, they intentionally lay their eggs in marsh grass that will be exposed to air in low tide. When eggs are in the air, out of the water, hatching is delayed. Air incubation for culture offers several advantages. First, it allows for hatching groups of fish at the same time so that uniform size larvae will help produce a similar sized batch of minnows. Larger, older minnows will cannibalize newly hatched larvae. Second, it could allow for batches of eggs to be shipped and grown elsewhere. This application of air incubation could become a useful hatchery and larval rearing technique for cocahoe minnows. Eggs are deposited on synthetic mats then collected every few days. Once collected, the eggs are then placed in a container with synthetic foam soaked in water and incubated for up to 14 days at 70-74 °F. However, temperature plays a big role in exactly how long or short you can incubate. Eggs are then placed in water where they will hatch in 10-25 minutes, if ready to hatch.

How we use air incubation to produce hatched larvae:

- Air incubation commonly occurs for cocahoe minnows in tidal marshes
- Using saline water (7-12 ppt) helps fight against fungus
- Use an incubator or a refrigerator to maintain temperature (68-80 °C) and keep fruit flies out. Fruit fly larvae have been found to eat the dead eggs first, which helps control fungus

Recommended procedures and practices:

Although many types of materials work for incubation, hobby foam works the best

We keep our eggs in simple plastic containers with a loose fitting lid.



The lid should not be air tight. Two pieces of hobby foam are cut to fit inside the box



Photo by Sunny Brogan

Recommended procedures and practices continued:

The foam pieces are saturated with clean water from a tank.

The salinity of this water should be the same salinity that the eggs will be hatched in (7-12 ppt recommended).

The eggs are placed between the two pieces of foam with the lid closed.

The container is then placed in the incubator at a specific temperature.



Photo by Sunny Brogan

Moisten eggs with a spray bottle every 2 days

Keep the water in the spray bottle at the same salinity (7-12 ppt) the eggs will hatch.

At 14 days, make sure the temperature in the incubator has been maintained between 68 and 74°F. Higher incubation temperatures will accelerate development and require a shorter incubation period.

Hatch out eggs in same salinity that was used to moisten them. Eggs will hatch in 10-25 minutes.

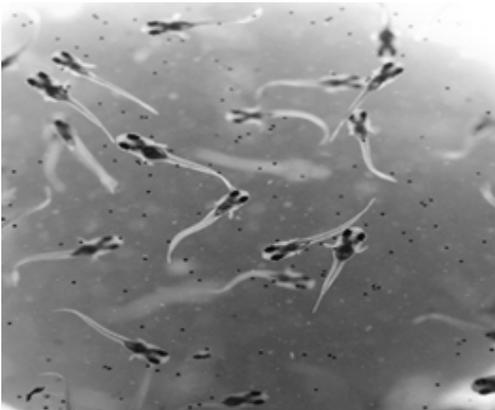


Photo by Paula Ouder

Larvae will have the ability to feed shortly after hatch.

The larvae will feed on artemia nauplii (newly hatched brine shrimp) and/or plankton collected from a pond or natural water source.

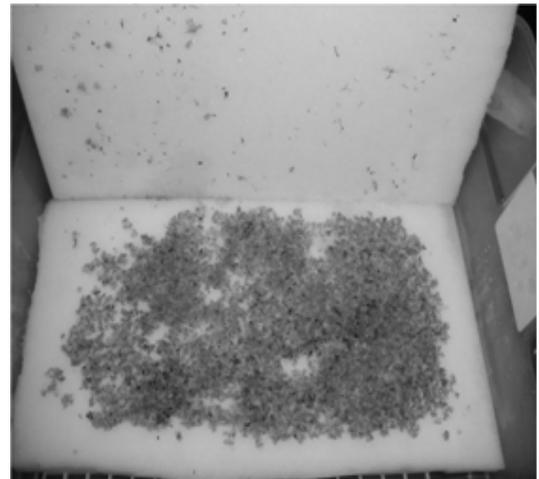


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