

9-Step Troubleshooting Guide

Are you not seeing the hatching rate you expect? Here are 9 questions to ask yourself when troubleshooting an unexpected hatching rate. Follow this guide to ensure you are getting the best results.

1. Did you follow the correct product weight to solution ratio?

The correct ratio is 2 grams of dry cysts per 1 liter of hatching solution.

To achieve this ratio, measure the volume of your hatching tank. Mark this volume on your tank so that you don't have to repeat this step in the future. Measure the correct weight of cysts using a scale or microbalance based on the 2 grams of dry cysts per 1 liter of solution rule. Don't forget to subtract the tare weight when weighing the product.

2. Did you check the water salinity?

The optimal salinity for hatching our Artemia cysts is 30 grams per liter.

Do NOT use iodized salt. Remember that different types of salt have different additives that either increase or reduce the salinity. Start by dissolving 30 grams of salt in 1 liter of warm water and measure the salinity with a refractometer. Your refractometer should read 1.023 sg, 3%, or 30ppt. If the number is lower, add more salt to your solution and measure the salinity again. If the number is higher, add fresh water to decrease the salinity. Repeat this process until you reach the correct salinity level.

3. Are you controlling the water temperature?

The optimal hatching water temperature is 27-29°C or 80-84°F.

Use a thermometer to check the temperature of the water at the beginning of the hatching process and check it again after 5, 10, and 20 hours.

If at any point the temperature is too high, place ice in plastic bags, shut them closed, and add the ice bags to the water tanks. Do not add ice directly to the water tanks as that will disrupt the salinity of the solution, affecting the hatching results. Alternatively, you can also place fans or air conditioners to point at the tanks to cool off the water temperature.

If the water temperature is too low, use a water heater to increase the temperature. Be careful to not overheat the water beyond the recommended temperature of 27-29°C.

4. Did you check the pH of the hatching solution?

The required pH of the hatching solution is between pH 8-8.5.

Use a pH meter to check the pH level of your hatching solution. If the pH is too low, add sodium hydroxide (caustic soda) NaOH or baking soda NaHCO₃. Measure again. If the pH is too high, add acetic acid. Measure again.

5. Do you have sufficient lighting?

Light is an important component in the Artemia hatching process. For the best results, it's important to maintain a light level of a minimum of 2000 Lux throughout the whole hatching process.

Use a Lux meter or download a smartphone app, such as the [Lux Light meter](#), and measure the illumination near the surface of the hatching tank. If the light level is less than 2000 Lux, add one or more LED lamps to increase the amount of light until you reach 2000 Lux.

6. Are you hatching tanks receiving adequate aeration? And are you using plastic tubes?

The required dissolved oxygen in the water is 4 mg/l or higher (DO: >4mg/l).

For aeration, use only plastic or silicone tubes. Metal or copper tubes oxidize and negatively impact the hatching rate. Note that the air bubbles should be small and there shouldn't be any areas of your tank that have stagnant water. If your tank is not receiving enough aeration, add 2-3 more aeration tubes.

7. Are you storing your Artemia cysts in the optimal conditions?

Store Artemia cysts in a tightly closed container in the refrigerator at temperatures no higher than +5°C. Before using the Artemia cysts, shake the container well. After use, store the remaining Artemia cysts in a tight container. Either store the Artemia cysts in the original can and tightly close the lid, or transfer the cysts to a thick, sealable plastic bag or another sealable container and shut tightly. Store in a refrigerator or chilled room.

8. Did you ensure the activator is performing?

For optimal hatching, Artemia cysts require an activator.

Do not wash or rinse the cysts prior to hatching. Washing will remove the activator and impact the hatching rate.

The performance of the activator can be impacted by the ratio of Artemia cysts to hatching solution. Ensure that you maintain the ratio of 2 grams of dry cysts per 1 liter of hatching solution.

The activator can lose its activity due to improper storage of Artemia cysts. Poorly closed packaging at high humidity causes the activator to oxidize and lose its effectiveness. The activator must be stored in a cool dark place in airtight packaging.

If you believe that the activator in your cysts has lost its effectiveness due to improper storage, follow these steps:

- Weight the right amount of dry cysts (2g/l)
- Wash the weighted product in a sieve
- Add the washed cysts to the hatching tank
- Use a micropipette or microsyringe to add 0.2-0.4 ml/l of 3% liquid hydrogen peroxide H₂O₂ solution (readily available at a pharmacy) to the hatching tank. Please consult our technicians for the exact amount of activator.

9. Did you try increasing the length of hatching cycle?

Oftentimes increasing the hatching time to 30-36 hours can improve the hatching rate.

Do you have more questions? Please get in touch with us and we will be happy to assist you further.