**PRE-CYCLING INSTRUCTIONS (and preparing the tank for the eggs)**

**Vermont Trout in the Classroom Program**

**2018-2019**

**Fertilized brook trout eggs and food will be delivered to all schools during the first full week of January. The actual date for your delivery will be confirmed by the regional TIC coordinator.**

**A. STARTING ON THE FIRST MONDAY OF DECEMBER, BEGIN THE PRE-CYCLING PROCESS**

Pre-cycling is a process designed to put your tank through the nitrogen cycle before the arrival of your eggs. This will establish a colony of good bacteria in your filter that will be capable of (a) converting ammonia (from fish waste and decomposing excess food) to nitrite and (b) converting nitrite to the less harmful nitrate.

It is hard to establish these beneficial bacterial cultures in tank water as cold as your tank will be in a few weeks, so we use the pre-cycling procedure to establish the cultures when the water is at **room temperature**. **DO NOT RUN YOUR CHILLER DURING THIS PROCESS BUT RUN THE FILTER.**

When you lower the temperature (Step B below), growth of the bacteria will slow, but it will pick up again once you raise the temperature of your tank in a few weeks.

**Day 1:**

* Test the water chemistry of your tank and record the values you get. It is **unlikely** that you will have any readings for ammonia, nitrite, and nitrate at this point but it is nonetheless important to check. High readings could indicate a problem with your water source that needs to be addressed before moving forward.
* Following water testing, add the appropriate amount of Ammonium Chloride Solution to the tank based on tank volume. For a 55-gallon tank, using Dr. Tim’s Ammonium Chloride Solution, you would add 4 drops/gallon of water (read the bottle for instructions).
* Add the appropriate amount of Nite-Out II bacteria solution.

**Day 2:**

* Measure ammonia and nitrite readings. Record.

**Day 3:**

* **If** ammonia and nitrite readings are below 1 ppm, add more Dr. Tim’s Ammonium Chloride Solution (same as Day 1). If readings are above 1 ppm, do nothing.

**Day 4 & 5:**

* Measure ammonia and nitrite readings. Record.

**Day 6:**

* **If** ammonia and nitrite readings are below 1 ppm, add more Dr. Tim’s Ammonium Chloride Solution (same as Day 1). If readings are above 1 ppm, do nothing.

**Days 7 & 8:**

* Measure ammonia and nitrite readings. Record.
	1. On the first measurement day that **BOTH** ammonia and nitrite are below 0.5 ppm, your tank is close to being cycled.
	2. Proceed to “Until Fish Arrive” (below).

**Until Fish Arrive:**

You need to feed the bacteria you’ve now established in your tank. Add a small pinch of fish food every other day and once a week measure and record ammonia, nitrite, and nitrate. When you add fish food and the ammonia and nitrite stay below ~1 ppm, you know you have a cycled fish tank ready for fish!

**Additional Notes:**

* IMPORTANT - Do not let the ammonia OR nitrite concentration get above 5 ppm.[[1]](#footnote-1)
* If either ammonia or nitrite concentration gets above 5 ppm, do water changes to lower the concentration.
* Do not let the pH drop below 7. If it does, do a partial water change to bring the pH back up.

**B. FIVE DAYS BEFORE EGG DELIVERY**

1. Turn on the chiller, setting the temperature to the temperature of the hatchery water. (You’ll receive an e-mail informing you what that temperature is.)
2. Test the water for pH, ammonia, nitrite, nitrate, carbonate hardness (KH) and general hardness (GH). The pH of the tank should be stable within a range of 7.0 - 7.6 for optimum biology.
3. Make sure the KH (carbonate hardness) of your tank’s water is 150 or more. Refer to Chapter 7 for guidance regarding KH and to Appendix F for instructions for using baking soda to correct low KH readings.

**C.** **ONE DAY BEFORE EGG DELIVERY**

1. Using the digital thermometer, check to see that the water temperature is at the desired level.
2. Place the air stone near but not underneath the breeder basket.
3. Check the breeder basket. Make sure that water flowing from the filter and bubbles flowing from the aerator will not disturb the resting eggs. If necessary, redirect flows or reposition the basket.
1. Ammonia and nitrite levels of 5 ppm would be **highly toxic** if there were fish in the tank. [↑](#footnote-ref-1)