

## Forced Pre-cycling Protocol (Recommended)

### Cycle your tank before you receive eggs.

Naturally letting your tank cycle can take a long time at our low temperatures. To speed up this process and ensure you have stable and safe water parameters by the time you introduce eggs, you can do a "forced cycle" using a couple of additives. Follow the instructions below. Adjust the dates as needed to align with the school week each year.

### Forced Cycling Supplies

You need just a few supplies to get your cycle going.

- 10ml syringe
- Seachem Stability 3.4 oz. or larger
- Fritz Zyme Fishless Fuel 2 oz.
- 2 oz. container of fish food (any kind)
- KH between 120-180ppm, pH between 6.8 - 8.0. Use Seachem Alkaline Buffer to raise KH/pH, or use reverse osmosis water to lower KH/pH.
- Optional: tank heater

\* Stability and Fishless Fuel are available as a combo [here](#).

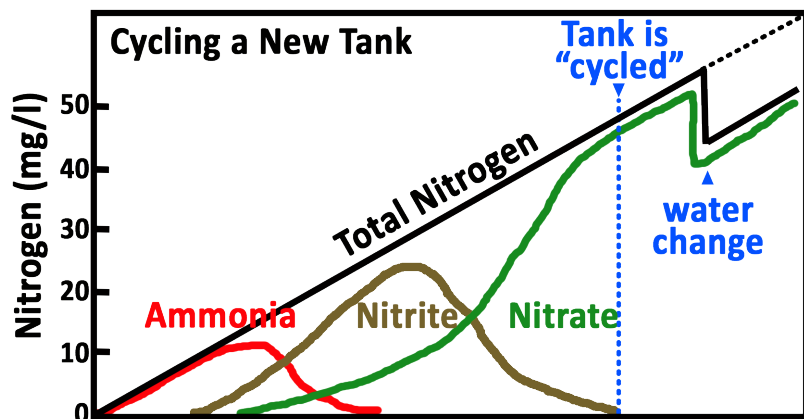


### General Dosing Guidelines

Before starting the protocol, your KH levels must be between 120 - 180 ppm and your pH between 6.8 - 8.0. Use Seachem Alkalinity Buffer to raise those levels. Or use reverse osmosis water to lower them. These will be used for all water changes for the year.

You will see different additives suggested in the cycling protocol table. Below is the suggested dosing for each additive.

Tank Size	Stability	Fishless Fuel	Seachem Alkaline Buffer
50 gallon	5 capfuls	10 ml (2 tsp)	2.5 tsp will raise KH ~ 2.8 degrees
75 gallon	7.5 capfuls	15 ml (3 tsp)	3.75 tsp will raise KH ~ 2.8 degrees
90 gallon	9 capfuls	20 ml (4 tsp)	4.5 tsp will raise KH ~ 2.8 degrees



The chart above illustrates the typical progression of tank cycling. Cycled = no ammonia, no nitrite and nitrate that you keep below 40 ppm with weekly water changes.

### Cycling Process

Remember that this is the process we are forcing to happen in a short time frame. For the first two weeks we want ammonia levels to hover around 3ppm without going over 5ppm.

Once you are reading nitrate levels, you can discontinue adding the Fishless Fuel. Once cycled, be sure to add a tiny pinch of fish food to the filter intake at least twice a week. This "feeds" your good bacteria to keep them alive and your tank cycled until you begin feeding your fish.

## Cycling Protocol (Start this process on or near October 15 each year)

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Week 1 (~ Oct. 13)</b>	<b>Set up tank</b> - Chiller off - Filter running - Do initial water tests - Adjust KH to above 120 and pH below 8. - Use a heater (if available) to maintain 80 degrees.	- Record water data - Add ammonia - 2 hrs later test ammonia levels (should be about 3ppm, do not go over 5ppm. - Add ammonia if it is below 3ppm. - Add Seachem Stability	- Measure ammonia and nitrite and record. - If pH drops below 7.0 do a 25% water change. - If KH is below 150ppm add Alkaline Buffer to raise it.	- Measure ammonia and nitrite and record. You want ammonia levels staying near 3ppm. No higher than 5ppm.	- Measure ammonia and nitrite and record. - If pH is below 7.0 do a 25% water-change. - If KH is below 150ppm add Alkaline Buffer. - If ammonia and nitrite are below 3ppm, add more ammonia.
<b>Week 2 (~ Oct. 20)</b>	- Measure ammonia, nitrite and nitrate and record. You want ammonia levels staying near 3ppm. No higher than 5ppm.	- Measure ammonia and nitrite and record.- If pH drops below 7.0 do a 25% water-change. - If KH is below 150ppm add Alkaline Buffer. - If ammonia and nitrite are below 3ppm, add more ammonia.	- Measure ammonia, nitrite and nitrate and record. You want ammonia levels staying near 3ppm. No higher than 5ppm.	- Measure ammonia, nitrite and nitrate and record. - If your tank is cycled, BOTH ammonia and nitrite will be below 0.5 ppm and some nitrate will be measure. - If you are still reading high ammonia or nitrite, dose with Stability.	- Measure ammonia, nitrite and nitrate and record. - Check pH and KH and adjust if needed.
<b>Week 3 (~Oct. 27)</b>	- Measure ammonia, nitrite and nitrate and record. - If you are still reading high ammonia or nitrite, dose with Seachem Stability.	- Measure water parameters. If reading ammonia or nitrite contact <a href="mailto:paget3@michigan.gov">paget3@michigan.gov</a> for next steps.	- If cycled, 5ml fishless fuel to feed good bacteria. - Remove heater.		- Turn chiller on and set to 65. - Test water parameters to ensure ammonia and nitrite levels are dropping.
<b>Week 4 (~Nov. 3)</b>	- Adjust chiller slowly to 60 degrees. - Add 1 pinch fish food to filter.		-Test water and record. - Adjust chiller to 55 degrees. - Add 1 pinch fish food.	<b>YOU MUST HAVE ZERO AMMONIA AND ZERO NITRITE READINGS AT THIS POINT.</b>	- Adjust chiller to 52 degrees. - Add 1 pinch fish food to filter.
<b>Week 5 (~Nov. 10 egg arrival)</b>	- Add 1 small pinch of fish food to the filter.		- Test water parameters and record. - Add 1 small pinch of fish food to the filter.		- Add 1 small pinch of fish food to the filter.
<b>Week 6 - 13 (until you start feeding your fish)</b>	- Add 1 small pinch of fish food to the filter.		- Test water and record. - Add 1 small pinch of fish food to the filter.		- Add 1 small pinch of fish food to the filter.