

# Incubating and Hatching Blue Gularis Eggs



**Option 1: Incubation In Peat.** I pack eggs for shipment the same way I do for storage, so the simplest incubation method is to just leave them in the zip bag as received. If considerable moisture accumulates in the bag, open it for a day and let it dry a bit. Then reseal and store in a dark place at temperatures between 70 and 80 degrees Fahrenheit. At any point during the incubation period, feel free to poke around the peat and look for eggs. They can be difficult to spot, as the fine peat clings to them, but with the help of a lighted magnifier, most people can distinguish at least a few. In the early stages, eggs are clear and shiny; as they mature, they darken and lose some of their sheen. When ready to hatch, you can see the eyes of the fry, complete with golden iris.

My typical strategy for hatching *Fp. sjoestedti* in peat is to flood them 7 weeks after the pick date. I put the eggs and peat mixture into a clear plastic shoe box, then add a quart of water from a healthy aquarium, bringing the water depth to about ¾ inch. After a few minutes, I break up the bigger clods of peat with my fingers, then find something else to do for an hour, or day, or week.

I don't usually see the "popcorn" hatches one can find in online videos, where it seems like all the fry burst forth within a few minutes of getting wet. Sometimes everybody hatches in an hour, but more often it's days or even a week. For *sjoestedti* and other semi-annuals, I do not usually re-dry the peat to wet again later; I just keep them submerged until they hatch, or until I net the peat and inspection finds no eggs remaining.

If it goes past a week with no hatch, but there are visible eyed-up eggs, I sometimes resort to **Force-Hatching**. Three things are known to wake up resting eggs: carbon dioxide, agitation and warmth. If I want to apply all three, I put the egg/peat/water in a plastic bag, blow CO<sub>2</sub> into the bag, tie it shut, shake the dickens out of it for 30 seconds, then place the bag on a fluorescent fish tank light for 10 minutes. I then return the mixture to the plastic shoe box.

It is worth noting at this point that sometimes eggs do not survive the rigors of shipping and storage, and blue gularis eggs in particular seem to sometimes suffer inexplicable losses. A bag of 25 eggs might yield anywhere from zero, to a dozen, to even 20 fry. I do offer a free replacement shipment if you get a zero or meager hatch, so feel free to contact me after you've immersed the eggs for a full week.

**Option 2: Water Incubation.** Blue gularis eggs may also be incubated in water, and in fact that is how I usually incubate them. The benefits are much shorter incubation time (2-4 weeks, depending mostly on temperature), and the ability to readily see how eggs are progressing. The biggest down side is that it is a much more labor intensive process.

Eggs are placed in a sandwich sized plastic storage container, and medicated, dechlorinated tap water is added to a depth of half an inch or so. I have had success medicating with methylene blue and/or acriflavine, but have had the best results with the fish antibiotic BiFuran® which has unfortunately been discontinued by Hikari®. Other medications may also be satisfactory, and I believe the bigger factor in success is the ongoing maintenance. The container is loosely covered and stored in a dark place at 70 to 81 degrees F.

Every few days, eggs are inspected, and any white or fungused eggs are removed with an eyedropper. The water is then carefully poured off, and replaced with more medicated dechlorinated tap water. Assuming the eggs were viable in the first place, I believe the frequency of this procedure in the early days is directly proportional to the number of fry obtained at hatching time. *Fp. sjoestedti* eggs seem to be quite sensitive to poor water quality and high bacterial levels.

When most of the eggs are dark and eyeing up, I continue the check and change, but discontinue the medication, switching to just dechlorinated tap water or water from a very healthy, clean aquarium. Exposure to the medications is thought to sometimes toughen the egg shell and make hatching more difficult, so discontinuing it in the final days may help alleviate that.

Eggs generally hatch without any assistance when they are ready. I have noticed that water incubated Gularis often spend the first day after hatching wriggling on the bottom, and even retain a bit of a yolk sack.

I have had mixed success sending Gularis eggs in water, especially if weather is uncooperative or mail is delayed, so my default is to ship them in peat. Some hobbyists have received eggs in peat, extracted the eggs and water incubated them with good results. I can also ship in water upon request.

**Option 3: Incubation On Peat.** A half inch layer of damp peat is spread across the bottom of a Petrie Dish or sandwich container, and eggs are placed individually on top of the peat, spaced slightly apart. The container is then closed to retain moisture and stored as usual. Periodically, the container should be checked for development, and dead eggs plucked out with a tweezers, and the peat misted with plain water if it is beginning to dry.

Incubation time is about the same as in peat, but since the eggs are plainly visible, it's easy to determine an appropriate wetting time. Hatching is the same as Incubation In Peat.