

Nothobranchius

An Introduction

Compiled by Tyrone Genade
[NAKA](#) Journal 2(4):4-8 (2000)

There are approximately 40 described species of *Nothobranchius* and a multitude of new undescribed species, which increases annually.

There is not much variation in body form but a myriad of colours. There are fish with solid blue bodies, red bodies, yellow bodies, and striated bodies; and most have scarlet red tails. The variation in colour isn't restricted to individual species but can be very apparent within a species e.g. *N. eggersi* which can have a solid red body at one location and a blue (almost white) body at another.

Their care and breeding are as fascinating as the wide range of colours. They do however follow same pattern: all species lay their eggs in the substrate and all species **NEED** the addition of 1tsp of salt per gallon (3.8 L) of water to fight velvet.

Hatching and Breeding

Since you will receive your nothos as eggs this is the best place to start.

Hatching

You will know when to hatch your eggs when you stare into the packet and the eggs stare back at you. This is termed 'eyed up'. At this stage of development you can add the peat to water or you can wait a few more weeks to allow the slower developing eggs to catch up with their fast brothers. There will however, be eggs that did not hatch in the first wetting. The peat can be dried again and left to stand for 6 or so weeks and then rewet.

Hatching the eggs simply entails adding water. A day prior to wetting the peat fill a small tank or any other container holding a minimum of 2 L of water (half a gallon). Add salt to it at the rate of 1tsp per gallon. This will help fight off velvet which can decimate a hatch over night. It is important to maintain this salt concentration all through the fish's life!

The fry will begin to hatch a hour or two after wetting, some times longer. Most will take brine shrimp as a first food but a few will need something smaller. Vinegar eels are a good choice as they don't die and foul the water as microworms do. Inforsia can be added but care must be taken not to foul the water. All should be able to take brine shrimp after the first few days. Watch to see if the fry are eating the brine shrimp. Looking from above they will look like little orange balloons with tails. Some Java moss can be added to the hatching container from the start. It will house a host of microorganisms that the small fry can feed on.

There will be, almost certainly, a few belly sliders. These are fish that were under developed on hatching or too week to take the first gulp of air to fill their swim bladders. There are other theories but no one is sure of the actual cause. The above are the most plausible. As the fry grow they can be moved on to larger tanks. They grow fast and can be mature in 6 weeks.

Breeding

Peat is pretty much essential. There other spawning medium such as fine river sand but peat is the easiest with which to work.

The fish will need no encouragement. Just add the peat to the tank and the fish will hop to it. The peat can be put in a small bowel or jars so as to spare the whole tank from being covered with the stuff. This also helps at harvesting, as you don't have to drain the whole tank. It is best to harvest the peat every week or two. The peat can be come stagnant and anaerobic killing the eggs – and fish! Another reason, in the case of *N. korthausae*, is that the eggs some times don't need a period of drying (diapause). Some eggs will hatch if kept in water.

Drying the peat can be tricky. If it is too dry the eggs will die; too wet and they may die. It is hard to describe how dry the peat must be. If we work by colour: the dry peat should be the same dark brown as wet peat but as crumbly as dry peat. You should be able to pick it up and feel it is wet but it must also crumble in your hands. Another comparison to which the consistency of the peat can be

compared to is that it should have a "pipe tobacco" texture. No water should drip from it. To dry, take the peat and throw it water and all through a net. Squeeze the strained peat till no water runs off. The eggs are strong and can stand this pressure. Place the peat between two sheets of newspaper and leave it for a couple of hours under the aquarium lights. Within about 4 hours the peat should be dry enough. The peat and eggs can then be put in a box and left to stand during the incubation period at no more than 24° C (75° F).

Incubation time varies between species and the only sure way to know when to hatch the eggs is by looking to see when they eye up.

Peat Preparation

I use palm fiber peat bricks, but any commercially available peat can be used as long as it does **NOT CONTAIN ADDED FERTILIZER** (check label). Boil a quantity of this peat in the microwave oven for about 5 minutes. The peat is then rinsed in a net for to remove all small peat particles. If the peat is to be used as a spawning substrate (and is not needed then), it can be bagged up in the saturated state until needed. If it is required for egg storage, dry it out as described previously and stored in a sealed bag until needed.

Basic Care and Maintenance

Food

From hatching nothos are ravenous eaters. Feeding is very important to keep them in tip top breeding condition. Despite what others will say and write, nothos will take flake. They will however, not take it willingly. It is best to feed flake early in the morning when they are at their hungriest, as they will then not hesitate to pick at anything that might be edible. Conditioning to flake is also best started at an early age.

The staple in any fish house or set up housing nothos is brine shrimp. This food is essential as it caters for most if not all of the nothos' needs. It has all the necessary amino acids, fats, carbohydrates, vitamins and trace elements. Of course we would soon get sick if all we ate were potatoes, so, as we need variation so do the nothos. A helping of daphnia or mosquito larvae or bloodworm every now and then will do them the world of good.

Water

The basic rules apply here as in any setup.

The water must be kept clean at all times and as constant as possible in respect to mineral content. Reports in most books say that nothos should be kept in soft acidic water. This is not the case in reality, the water should be moderately hard and be slightly saline and the pH should be kept above 7 at all times.

The salinity should be to the tune of 1 teaspoon per gallon (US gal = 3.8 L). To keep the pH above 7 Sodium Bicarbonate (NaHCO₃) can be used. The dose is not too critical as the Sodium Bicarbonate can not push the pH up to any extreme level. Hardening the water can be achieved by the addition of some crushed shells (sea snail or egg) to the filter medium. Box filters work best in notho setups for this reason.

Partial water changes are as usual must. Changing 10 to 20% per week is fine. Dr. Brian Watters has theorized (over the AUNZZA e-mail list) that poor water quality could be the cause to the condition: belly-sliding. Another theory, put forward by Prof. D.U. Bellstedt (over the AUNZZA e-mail list), is that this condition could be caused by osmotic shock (a too rapid change in the dissolved salt concentration in and around the fish causing the kidneys to kick into over drive and burn out the fish). So if any water changes are done they should not be too drastic. This would fall more under health but since it is relative to water quality it has been stated here.

Tank

Tank size is not too crucial. Naturally you want to abstain from extremes like shoving 20 fish into a 30 cm (12inch) tank. Nothos are quite active both in normal swimming and spawning so a good size tank is best. 45 cm (18inch) tanks are best. Hoods are not necessary as nothos aren't as active jumpers as *Aphyosemion* species.

Planting is difficult due to the high salt concentrations but Java moss and Java fern grow well in salty water if acclimatized, as will *Ceretophyllum* (Hornwort). The plants give the females a place to hide, which is useful, as male nothos are constant drivers.

The only really functional decoration other than plants would be the container to hold the peat. This can be a small container, it does not matter as long as peat can be put in it and be easily harvested. The peat should be 1 to 2 cm deep but not much more as the peat can become anaerobic and kill the eggs. A tight fitting lid on the container with a hole in the middle is excellent as it prevents the male throwing the peat everywhere. The hole can be 4 to 5 cm in diameter.

Tank Mates

This is difficult. I have seen a group of young *N. foerschi* decimate a group of young *Cynolebias whitei* twice their size! Yet a group of adults of the same specie quite happily put up with small pygmy gouramies. As long as young territory seeking males are not put with other fish things should remain peaceful. They can be kept with anything they can't swallow and *vice versa*.

The best company is other nothos of the same specie. If raised together from a young age no troubles should incur in a fair sized group, but 2 males should NEVER be put together! By keeping them in a group there will also be less stress on the females. Snails can be maintained (ramshorns! Not Malaya livebearing snails) with the nothos and will not harm the eggs while keeping the tank free of decaying scraps of food. Nothos who were brought up together generally will not tear each other apart. The only exception I am aware of is *N. orthonotus* KNP, which are very aggressive!

Heating

As long as you don't suffer from freezing temperatures a heater is not necessary. Nothos are very hardy and can survive low temperatures as well as high temperatures. As long as there are no sudden sharp changes all will be ok.

Some thing of note has been put forward as to the importance of fluctuating temperatures: there is an idea that fluctuating day/night temps may be important to the proper growth of nothos. This remains to be proved. Most people recommend a temperature of 24° C (75° F).

Disease

The only real pathogen effecting nothos is velvet. Nothos are sensitive to most commercial treatments so all in all the best treatment is salt. The salt should be used at a concentration of 3 tsp. per gallon. This should be added over three days to lessen the shock. King British™ white spot treatment can be used at a third of its recommended dose (WARNING: too much will KILL the nothos!).

Bacterial infections can occur but are rare as the salt also fights off these pathogens. The end result is normally belly sliding.

Other Peat Spawning Annuals

All annuals can be cared for in the same way as described above. *Cynolebias* and other South American annuals will need deeper peat—about 5 cm (2 inches). Smaller species need less.

Fundulosoma and *Fundulopanchax* (semi-annual *Aphyosemion*) species won't need very deep peat but require much shorter incubation periods.

Recommended Incubation Periods

The following are RECOMMENDED incubation periods for some of the easier species. In truth the incubation period of your eggs may vary within and out of the following norms. Many are average values drawn from numerous populations. Do not worry if your eggs fail to show development or hatch in the given time frame. You may be incubating them at too low a temperature or in too damp a peat. If you can not see any eggs past the given time it may be that the peat was too dry or there was something else that killed the eggs.

DO NOT LOSE HOPE THAT THE EGGS MAY HATCH! Even if you can't see any eggs, rewet the

peat a few times a couple of months apart.

Species	Incubation Period (Weeks at 74-75°F)
<i>N. eggersi</i>	10-18
<i>N. foerschi</i>	12-16
<i>N. kafuensis</i>	10-18
<i>N. korthausae</i>	10-16
<i>N. palmqvisti</i>	12-16
<i>N. rachovii</i>	20-28

Over all these are hardy fish, which breed easy. As long as they are not abused they will live long fruitful lives (9 to 18 months if you push it.).

Enjoy them.

References

Status of Nothobranchius Species and Populations in the Hobby: Past and Present, Compiled by **Brian R. Watters**, <http://www.AKA.org>, 1998

Introductory Care of Annual Killifish, by Prof. **Dirk U. Bellstedt**
Independent communications over the AUNZZA, killies and killitalk e-mail lists.