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## Studying the life cycle of *Poecilia sphenops* (Black Molly) and *Herichthys cyanoguttatus* (Texas Cichlid) kept in captivity providing optimum condition

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### Abstract

*Herichthys cyanoguttatus* (Texas Cichlid) and *Poecilia Sphenops* (Black Molly) are fresh water fishes which are kept in captivity. These varieties are temperature sensitive and minor changes in temperature can damage their biological cycles.

**Keywords:** *Poecilia sphenops*, black molly

### Introduction

*Poecilia Sphenops*, also known as Black Molly, is a common of freshwater fish. These varieties of fishes are generally found in lakes and are easily bred at the local aquariums. These fishes require very low maintenance as well are able survive only in clear and healthy water. They have a life span of 3-5 years, depending upon the conditions provided to them. *Poecilia Sphenops* are maximum 5 inches long and are viviparous i.e. they give birth to their young ones. The number of fries can reach upto 75-100 depending upon the chance of their survival as well as the conditions provided to them. These fishes are capable to produce fertile hybrids with many *Poecilia*. The male is found to be mildly aggressive as compared to females. Black molly is a melanistic breed which are black all over. Melanism is a condition opposite to albinism (lack of color pigmentation). While the Black Molly is completely black, they can be sometimes found with a streak of yellow, which runs down the dorsal fin.

### Housing

*Poecilia Sphenops* are sensitive to poor conditions and they are provided with spacious captivity, which allows stable water parameters. The ratios of males to the females are very necessary to be kept in mind. There should be at least to 2-3 females for every single male. The reason for this ratio is that the males relentlessly attempt to mate the females. Due to so many mating attempts, the female get stressed which leads to the fall in health, leading to the death of the females. The requirement of plantation in the captivity is very important and it provide them a good hiding place and high survival rate for the fries. Plants like *amazon swords*, *Java ferns*, *Java moss*, *Hygrophila polysperma* and *water wisteria*.

### Filtration

Most filters will work well, when keeping Black Mollies, so it completely depends on what you currently have access to, or what you can afford. While a lot of other fish keepers will recommend a canister filter, we believe they are a little bit too expensive when it comes to keeping Mollies. A simple hang on the back filter is cheaper, and will not disrupt the water surface as much as most other filter types. Mollies love to swim on the surface, looking for floating food, so we recommend choosing a filter which leaves the surface as smooth as possible. The use of just normal air bubbler would also help in the exchange of oxygen in water and provide a proper air supply to the fishes.

### Sexing

As with most other live bearers, sexing a black molly fish couldn't be any easier. Females will always be larger than the males, and the males can be distinguished thanks to their Gonopodium, which is an anal fin that is shaped similar to a hook, and serves the purpose of hooking onto the female molly fish, when ready to deposit sperm.

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**Fig 1:** Female Molly



**Fig 2:** Male Molly

### Feed and Diet

Feeding Black Mollies is pretty simple, since they will happily eat a wide variety of different foods that you probably already have lying around. First of all, Black Mollies are algae eaters, so if your tank is prone to green algae break outs, your Black Mollies will help control it from getting any worse. Mollies are omnivorous fish, so in order to keep their diet as natural as possible, we recommend feeding them a variety of invertebrates, as well as plant matter and some detritus.

Being omnivores, Mollies do require a small amount of vegetables in their diet in order to survive.

### Breeding

Male Mollies are incredibly aggressive in their breeding habits, so as long as the tank is set up in a way that the Mollies feel comfortable, we expect some molly fry within a couple of months. The black molly fry will require plenty of plants to hide between, if you want them to survive. Mollies are not the most considerate parents in the aquarium, so they will eat any fry that they feast their eyes on. You can tell if the female Molly is pregnant by looking at their anal fin, which should show a dark gravid spot. If that fails, the obvious increase in plumpness should be a solid indicator that she is carrying some fry. The number of fry we can expect will depend on the age of the parent, but on average, you will see anywhere from 40 to 100 fry per birthing. The entire process from impregnation to birth will usually take between 6 to 8 weeks, but we have had cases where the gestation takes just 4 weeks. The baby fry don't require any special treatment after birth, and their diets are the same as their parents from the get go. A good quality flake which has been ground up, as well as some small brine shrimp, daphnia or microworms will definitely do the trick. When kept in water containing algae will help the fries to eat those algae and get a proper nutrition to them. To ensure full development, we recommend feeding your newly born fry at least 3 to 4 times per day.



**Fig 3:** A pair of molly's breeding

### Fry Care

The baby fries require proper aeration after their birth. They are an easy prey for the other adult fishes including their own parents. The fries are to be immediately separated after the birth until they are mature enough. The fries feed on the algae and the mashed feed given to them as they are not capable to eat the large sized feed. The temperature of the tank where the fries are kept. Proper amount of food and feed helps the proper growth of the fries. The no. of fries starts from 5 and may increase to 50.



**Fig 4:** Female molly with fries

### Observations

#### Day 1- Setting up of the fish tank

The fish tanks were placed on the thermocol sheet to prevent the cracking of glass due to pressure. The tanks were washed with normal water followed by a treatment with potassium permanganate and was drained. The tanks were again cleaned with salt and saline water, drained and were left for drying. Then the water was filled upto 100 litres and stones were spread to make a bed. Air bubblers were introduced in the tank and a good amount of oxygen was supplied in the tank. To bring the water to the optimum temperature, a thermostat heater was installed in the tank with the temperature set at 28-30 °C. The tank was left for 24 hrs.

### *Herichthys cyanoguttatus* (Texas Cichlid)

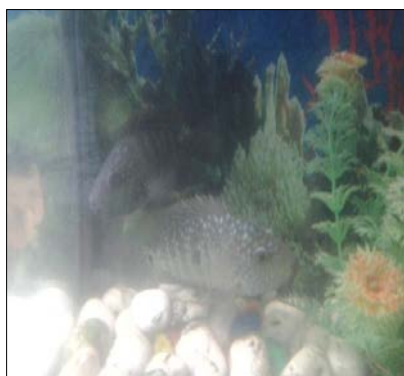
#### Introduction

*Herichthys cyanoguttatus*, commonly known as Texas Cichlid is a freshwater fish of the cichlid family. This is the only cichlid species that is native to the United States. The fish, also known as Rio Grande cichlid, originates from the lower Rio Grande drainage in Texas near Brownsville and North eastern Mexico. *Herichthys cyanoguttatus* can grow to be over 13 in (33 cm) and are differentiated by their distinctive characteristics and specific habitat needs. This cichlid is

known for its cream and turquoise spots. Adult males also develop a nuchal hump on their head. This cichlid also prefers the water temperature to be between 68 and 82 °F (20–28 °C) and is negatively affected by rapid changes in temperature. *Herichthys cyanoguttatus* are a large and aggressive fish that can reach up to a foot in length, although most sold in the aquarium trade attain an adult size that is a bit smaller than that. The body of this species is pearl-gray with blue to green hued scales that give the appearance of pearly iridescent speckles, giving it one of its common names of Pearl Cichlid. Mature males develop the traditional nuchal hump on the head, above the eyes. When spawning, the fish assumes a striking half and half coloration, with the front portion of the body becoming white, and the rear and underbelly being black, or black and grey barred.



**Fig 5:** Breeding pair of Texas cichlid. Male with black bottom while female with normal colour.



### Result

According to the research, it was observed that both the breeds of fishes showed ovulation and onset of breeding cycle as the temperature is induced. The optimum temperature for breeding is 28-30 °C.



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