

Select Aquatics of Erie, CO.

Harvesting Livebearer Fry

A lack of a consistent, effective means to capture, save and raise up fry is likely the single reason fishkeepers see declines in numbers and eventually lose populations. Many batches of fry often seem to disappear without an established process for collecting them.

There is an assumption that the larger fry of many livebearers, when compared to the small fry of egg layers, makes them easier to collect and raise. In fact, most livebearers will eat their own fry- which can make rescuing fry difficult, and impossible with some species unless a specific effort is made to save them.

When minimally fed or stressed, all fish will eat their fry if they are large enough, and the fry are small enough. With frequent, quality feedings, fry predation the first few days can be kept to a minimum- after that the fry that manage to survive become skilled enough to avoid being eaten. The problem is that with some species fry rarely survive, and all too often one or two fry are left of an initial group of 30 or 40. Worse, if you are breeding for a particular trait, the characteristics that allowed those two fish to survive may not be the traits you are breeding for.

Raising every fry is the only way to select for the healthiest, most robust fish. Many species left to community breed within a small population, over time, will take on undesirable characteristics that reflect life in a confined space, such as smaller size from early maturing males taking advantage of their earlier opportunities to breed.

Some species are less prone to eating their young than others. Many lines of guppies have been selectively bred not to bother their young. The two swordtails *X. montezumae* and *X. mayae* are also not enthusiastic about eating their young, particularly when well fed. In contrast, most species within the genus' *Gambusia* and *Brachyrhaphis* will eagerly eat their fry.

Most goodeids should be assumed to eat their fry, though females having their first batches, when they are still smaller, will generally leave them alone. Being larger, goodeid fry are far hardier when first born, but species such as *Z. tequila* still manage to eat them anyway.

Most fish have a set gestation period- for poeciliids it is generally about 30 days, depending on temperature, and for goodeids it is about 60 days. Sizes of broods vary by species, but number, health and size of the broods can be increased by moving the female to a tank of her own when she appears gravid, and feed her well. Earthworms or earthworm flake seems to be the best food for this.

Female poeciliids- swords, guppies, mollies, platies, limias can store sperm, such that a single fertilization can generate as many as 8 successive broods. Goodeids breed fertilization to fertilization.

The goal is to separate the adult female from her young as soon as possible after they are born, and for the young to be born away from any other larger fish. And there are a variety of ways to do this, without putting the female through the stress of being confined to a small breeder, hung in the tank.

Most livebearers will have their young between sunup and noon, though giving birth at other times of the day is not uncommon. The basic rule is that if you see a single fry, chances are the entire batch has been born, or the female is in mid birthing- and will be done in 20 minutes or so. The mother should then be removed and put back into her home tank. (Though a few days to recover, where the female is not being chased around, is always best if the space is available.)

The young then need to be kept in an environment conducive to their survival- as clean as possible, but still surrounded by quality food at least twice per day, and when in a 5 gallon or smaller container, a 50% water change daily, the first few days, is essential.

All females are pulled to have their fry separate from the other adults, with the exception of the *Ameca splendens*, where gravid females are allowed to have their fry in their species tank, where they are netted out to be raised separately- they do not seem to bother their young. All fry are saved here using one of 3 methods:



These are Sterilite plastic shoebox style containers, with bottom and front sides cut out, a fine polyester mesh glued in that keeps fry in the containers. Those fashioned hooks are connected to holes drilled in the plastic, fastened with electrical ties. 2 marbles on each keeps them away from the tank wall, so fish do not get caught. Females can swim comfortably and can be removed as soon as fry appear. The fry can then be raised up in the containers.

Method #1

The approach most widely available is to purchase a widely available plastic or net breeder that the gravid female is put into to have her fry. These traps are ideal for raising new fry their first week or two, but are usually too confining for an adult and 20-40 fry of most species. If any fry are going to be eaten, every opportunity exists for that to happen. In fact, it could be assumed that some fry are always eaten in those close quarters.

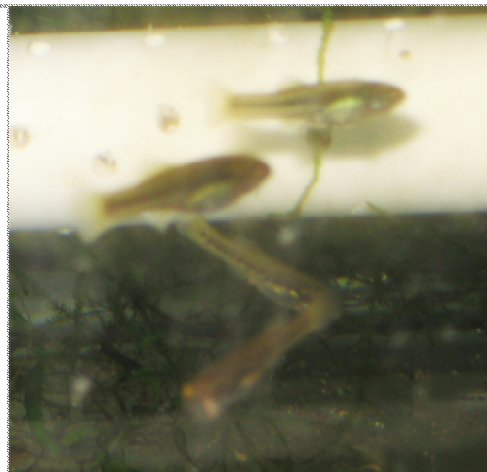
To address not having smaller aquariums always available- large enough for a batch of fry to hide in amongst some java moss, and a gravid female to swim comfortably- I cut large "windows" from the sides of a number of square plastic 1 – 2.5 gallon storage containers. Over the openings were glued nylon netting, and 1" metal angle pieces and electrical ties allow these breeders to hang easily on the side of an aquarium. (See pic)

With some species, you can allow the fry to be born in the same tank with the adults. *Ameca splendens*, for example, is a species where the females often do not tolerate being moved, and will drop their fry early, often stillborn, as soon as they are settled into their new environment. Though not known to eat their fry, when born healthy into a tank of adults it's best to assume that some predation of the fry occurs. Most can be saved by closely watching the tank, then removing the fry as soon as they are seen. *X. montezumae* also seems not to bother their fry as other swords do.

A solution to capturing and raising all of the fry with a female that can't be moved is to build a large breeder that hangs into the tank, with some fine leaved floating plants. Though separated from the other adults, the female is still in the same tank, she doesn't feel particularly confined, and will generally give birth normally. The fry then are easy to see once they are born, and the female can be put back into the main tank for the young to be raised separately.



The fry of the *Alfaro cultratus* are thin, 5-6mm slivers that at first group together just beneath the surface.



Goodeid fry are generally large to begin with, but these *Ilyodon furcidens* fry are some of the largest fry you will ever come across. These are just 1 day old, and the PVC they are in front of is 1/2 inch wide.

Method #2

With *Alfaro cultratus*, the “knife Livebearer”, new fry will swim up to the surface when first born, and a thick provision of Java fern in a 10 gallon tank provides places for the female to hide by herself in a strange tank, while the young swim up at the surface where they can be easily netted out (or the female removed and the young grown out in that tank). Saving the fry of *Alfaro cultratus* is very easy, but because the fry are quite small and generally eaten in a colony tank, saving fry can be difficult when a setup such as this is not used. Breeding single females in the plastic larger breeders mentioned above also works well. Because of the small size of the *cultratus* young, they are usually caught and raised in smaller breeders where they can be given brine shrimp and finely crushed dry foods.

Most females know they are vulnerable when gravid, and will be the first to zoom to the back and bottom of the tank when threatened. When the density of the floating plants reaches a certain point in the birthing tank- the female can swim through the tank easily, but is obstructed- she will stay low in the tank where she feels safe, and young escape into the rest of the tank easily. Each mid-morning, check for and collect any fry.



This is a 10 gallon breeder tank set up as in Method #3. The plants are thick enough to provide shelter for any fry, but not so thick that the adult females cannot swim about freely. As well, the plants extend right to the surface, as many fry will stay at the surface when first born, where they can be easily seen and netted out to be raised separately. Or, the female is removed and the young are allowed to grow out for 1-6 weeks as new gravid females are added to drop their fry in with the growing out fry.

Method #3

The secret to truly producing consistent numbers of each species, however, comes down to the next step, which seems to control the eating of fry entirely.

In a 10 to 20 gallon breeding tank, after a successful drop of fry and the female is removed, raise the young for 1-2 weeks, to where they are too large to be eaten by other gravid females, but are too small to be interested in bothering any new fry themselves. At this point, and for roughly the next 6 weeks, other gravid females can be placed in this tank with the older young to have her fry. The older fry serve as “dither fish”, causing the new mother difficulty focusing on her own young, and those drawing her attention are too large to eat.

10 gallon tanks of various species fill up with young this way, and losing batches of fry because “I missed them”, or they were eaten before they were noticed no longer happens. As well, I am convinced that most or all of the fry avoid being eaten using this method.

I will sometimes keep 3-4 females at a time in a single 10 gallon tank, full of older fry. Then, after the females are removed after dropping, I will let the new fry get to about a week old before introducing any new gravid females.

With the *Alfaro cultratus* mentioned above and other species, the practices can be combined, where older fry are placed in a larger, handmade breeder, for example, to hold down possible predation.

Consistent success is always difficult, but these means have evolved after hundreds of batches of young, all in an effort to keep the collecting simple, while being easy on the female and the fry, while saving as many of the fry as we can.

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