



California Betta Society
San Francisco Sacramento
Silicon Valley
NEWSLETTER

January/February 2009



Upcoming Meetings

January							February							March						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4	5	6	7	8	9	10	8	9	10	11	12	13	14	8	9	10	11	12	13	14
11	12	13	14	15	16	17	15	16	17	18	19	20	21	15	16	17	18	19	20	21
18	19	20	21	22	23	24	22	23	24	25	26	27	28	22	23	24	25	26	27	28
25	26	27	28	29	30	31								29	30	31				

1/24 Holiday Party

White Betta gift exchange, auction, announcement of officers for 2009. This will be held at Eryn Rosebaum's new apartment. Contact Eryn for location information and directions. (erynrosenbaum@gmail.com)

2/28 Tips on Spawning - Attendees

Round Table Pizza 20920 Redwood Road Castro Valley, CA 94546

3/28 Program to be announced

Manila Taekwondo, 32639 Alvarado Blvd. Union City 94587

Regular meetings are Saturday afternoons. They begin at 1:00p.m. and end by 4:00 p.m.

Visiting and auction sign-in are from 1:00 to 2:00. The meeting program begins at 2:00p.m. The auction and raffle begin at 3:00p.m.



The following information is printed from the Algone web site - a free aquarium resource for freshwater, saltwater, reef tanks, and planted aquariums.
<http://www.algone.com>

Live Food

In nature, fish scavenge for food all day. Flake food is the common choice for aquariums as it is easy to use and it contains all the nutrients our fish need. Nevertheless, flake food is not the most natural choice. Live foods are not only a great supplemental nutrient source, but also introduce a more natural feeding- and dietary environment to the aquarium.

Some live food can live in the tank for days and even weeks and can therefore satisfy the fish's instinct of scavenging all day long. In some cases you will even find that predatory and territorial fish act less aggressive on tank mates if you provide live foods.

Another advantage is that live food will not rot in the tank, but stay alive until eaten. And last but not least, live food saves you money and widens your horizon towards the hobby.

Below we discuss some of the most common live food options with tips on how to culture them. Most of the ingredients can be found in pet or fishing stores.

Wingless Fruit Flies

The starter culture of the wingless fruit flies can be obtained at live food vendors, often enough these companies also sell a suitable medium to go with it. Wingless means that this species has no wings at all, while flightless flies grow wings that are too large to fly with. Make sure to get the wingless kind.

Under certain conditions, the wingless fly can grow wings, this can occur when the temperature gets to high, so keep them cool (70 to 75 degrees Fahrenheit/ 20 – 24 degrees Celsius).

As a medium old half-rotten fruit will do the trick, either as is or mixed with some oats. Fruit is the best medium, but alternatively, mashed potato mix with sugar can be used (1 cup mashed potatoes and a teaspoon of sugar). Adding some yeast will enhance the fermentation process and create an optimum environment.

The medium should be about ½ inch in height, using a plastic container or a jar and should have a consistency of yogurt.

In order to keep the medium moist and other critters out, the top should be sealed with a mesh bag liner or a lid with little air holes.

First harvest time arrives after 2 weeks. The culture should be productive for 2-3 months. To start a new culture place some of the flies in fresh medium in which they will start laying eggs.

The best harvesting success can be achieved placing a jar upside down on top of the cultivation jar. A light source on top keeps the flies migrating to the empty jar ready to be fed to your fish.

The wingless fruit fly can be used in both, fresh and saltwater environments and are best suited for medium to large fish.

Fruit flies have a live span of about 1.5 weeks and are therefore preferably used by biologists to research genetics. The wingless fruit fly is basically a mutation of the common fruit fly.

Black Worms (Tubifex)

Black worms (tubifex) do not have the best reputation as live food; no doubt they are very nutritious for the fish, an excellent protein source, good for breeding. It is more the circumstances on how they are mass bred or live in nature that contributes to their bad rep.

Black worms can be found in polluted rivers mainly on the banks as they like muddy environments. They are in fact a positive sign and indicator that the water is polluted. Mass breeding takes place in aquaculture, trout farms and the likes. They are kept in run off ponds where they feed of fish waste. The black worm's reputation is therefore a bacteria and disease infested worm.

Nevertheless, it doesn't have to stay that way, as they are a high protein source, if not the best available.

Cultivating black worms will not yield a large harvest but will still provide the fish with a tasty snack.

When you get the first species from a pet store, place them in a jar of clear water. Replace the water 3 times a day until it stays clear. This procedure cleans out the worms and will get rid of whatever they might carry within.

In the meantime, prepare a small aquarium (1-5 Gallons filled up to 1/3 with water) with a layer of peat (about 1 inch). A small airstone will provide some oxygen and dilute some of the waste. Lighting is not needed. Water temperature should be room

temperature; the upper tolerance is about 90 F and the lower about 40 F. The water has to be free of chlorine/ chloramine.

As food source, flour or cornmeal can be used, pre-mixed with a little milk or just applied directly. Don't worry about the water getting cloudy. It should not however smell rotten.

After 3-4 weeks harvesting time is here. The little 1-inch worms will stick their tails out of the "mud", ready to be fed to your fish. On a side note, it is best to feed one worm at a time or to get a worm feeder. You do not want these little creatures to dive down the substrate at large; they will create too much waste if they start breeding in the main tank.

You can also combine the worms and water fleas in one set-up and breed them simultaneously

Water Fleas (Daphnia)

Well suited for smaller freshwater fish. Water fleas (daphnia) survive in the aquarium for days and feed of microscopic waste particles. This live food is the main nutrition source for most fish in nature.

Water fleas are tolerant to poor water quality i.e. low oxygen, high nitrogen content, ammonia and pH. They actually thrive on green water pea soup. Culturing them therefore does not require strictly maintained water parameters.

All that is needed is a 10 Gallon tank with a source of light (direct sun light is preferred). Temperature should be around 60 - 70 degrees F. Low aeration is needed for hatching and the bubbles should be large. To create planktonic micro-algae (pea soup) an organic fertilizer will do the trick in combination with lighting. The organic fertilizer will also promote bacterial and fungal growth, which is a food source next to planktonic algae. Brewers yeast (1 oz weekly) can be fed if algae are not properly developed yet.

Water fleas are sensitive to salt, potassium, calcium as well as zinc, copper, and chlorine/chloramine. Most of these compounds can be successfully removed using a water conditioner.

A pH of 6 - 9 is acceptable, high ammonia levels and pH will not kill them, but drastically reduce the reproduction.

Harvesting the water fleas can be done with a fine meshed net. The water fleas will collect themselves near the surface as soon as the airstone has been turned off, which makes it easy to collect them. They can be kept alive for several days in the refrigerator.

In an established colony at least 25% of the population should be harvested every 3 days, as the rapid re-production can have a negative effect on the water quality (reducing overall production).

A female can produce 100 eggs every 3 days, so the culture will renew itself.

Under good conditions only females are present, reproducing asexually. In less favorable conditions males are produced for sexual reproduction.

Protozoans - Infusoria

Infusoria is a microscopic form of life in the aquarium. It is perfectly suited for newly hatched fry. Infusoria can be readily found in small numbers in most aquariums.

The initial set up is very easy to build and to maintain. A small 1-5 Gallon aquarium or jug equipped with an air stone is all there is needed. The more aeration, the less smelly the operation will be.

To seed the first batch, grass clippings, old vegetables and the like, can be placed on the bottom of the set up. A sunny spot provided will start the decaying process and bacteria cultures on which the infusoria feeds.

After just a few days the water should turn cloudy, which indicates the growth of infusoria protozoans.

Harvesting can be done best by shutting off the air stone. This will allow the infusoria to settle just beneath the water surface (has a cloudy appearance). If this fails, a spot light will often attract the infusoria and cause it to "crowd up".

An eyedropper comes in handy for feeding fry in the main tank. If kept separately, you can simply siphon them directly from the jar into the holding tank.

As for a more constant "automatic" food supply, take a jar (place it higher than your tank) and use air tubing as a siphon feeding it directly into your aquarium. Restrict the flow to a couple of drops per minute, using a clamp. Simply keep the Jar filled and your set to go.

This set up can run for a good while and should be re-started before the water gets too bad to transfer to the main tank. Alternatively, snails can be introduced to the culture. Snails will feed off the vegetable base at the bottom. In addition snail droppings are a perfect food source for the infusoria cultures. With

snails, the water will not deteriorate as quickly and the initial culture can be kept longer.

Seeding cultures are also available at specialty live food and laboratory supply dealers. Addresses can usually be found in aquarium magazines.

Note on Tubifex worms: You can keep them in a worm keeper with a slice of potato in the water part of the keeper and they will breed. There are also mosquito larvae if you want your neighbors to hate you.



Where can I find cultures?

Aside from getting cultures from fellow CBS members, here are a few I have found while searching. More pop up when you search for an individual food, like wingless fruit flies.

LFS Cultures – <http://www.lfscultures.com> – Cultures for a great many live foods. They also have kits with containers and media available. Not cheap.

Adds on AquaBid – Quality may vary by seller, but generally they are good. Get a live delivery guarantee AND instructions.

Adds in the back of aquarium magazines. Again, get a live delivery guarantee and instructions. I have not tried this.

Aquatic Foods - aquaticfoods.com – Blackworms.

Skeeter Bytes –

<http://www.skeeterbytes.com/forsale/wworms.htm> - Not just worms. Cultures for a variety of live food.

The Live Fish Food Shop -

www.livefishfoodshop.com/shop_ricebeetles.html - A variety of cultures.

Fruit Fly Shop - <http://www.buyfruitflies.com/shop.html> - A variety of cultures.

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