

## **Feeding the Growing Guppy**

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### **As a guppy grows, so does his variety of foods!**

It is easy to overfeed adult Guppies. While Guppies can eat and eat, they should not be fed as much as they can eat. Males will develop a noticeable - and unhealthy - "pot belly", a bulge in the chest area. This is a result of feeding a rich diet high in fat including beef heart, which, of course, is not the natural course for a fish (how many times has a guppy in the wild found its own cow to chow down on?). If the guppy remains active as an adult the extra weight will not be quite as dangerous.

As a guppy gets about 4 or 5 months old, its diet should be modified to lower fat intake, and flakes will become an integral part of its diet.

### **When You Go Away**

If you go away on holidays, your adult fish will be fine not being feed for up to 2 weeks. Guppy fry should be fed regularly (they will, however, survive at least a week with no food in a cooler tank). Vacation feeders (available at pet stores) should be tested before you actually go away! Some can play havoc with water quality, and some simply do not work at certain pH levels. If going on a vacation for a week, it is perfectly fine to leave your Guppies without food. Guppy fry will survive, especially with lower temperatures, but they should be fed. Perhaps a helpful neighbour will feed them, but make it painfully obvious how much your fish are to be fed.

The best thing to do for fry is to buy a pill container with a compartment for each day of the week for each tank. Portion out the food you want fed each day and have a trusted friend visit to feed the fish. A daily feeding will be sufficient for guppy fry. I suggest using the pill box method because many a non-fishkeeper will pollute a tank with overfeeding, and you will be left with nothing but dead fish and rotting debris when you return.

### **Foods for Fancy Guppies**

Raising fry on live or frozen Baby Brine Shrimp, live microworms, egg yolk, etc. Will build them up quickly to take on an even greater variety of food when they are physically able to consume it.

Live food is known as the best food for fish since its nutrition is fresh, it provides essential fats and amino acids, it survives in the tank so it rarely fouls the water, and fish enjoy eating it. Live cultures such as those mentioned here are rarely sold by stores, but can be obtained through aquarium club members, fish auctions, and via the internet.

Freeze-dried foods are a close second nutritionally. The food is frozen, the moisture is evaporated, and the nutrients are preserved. Freeze dried foods can be stored indefinitely in a cool, dry place. Flakes are about as good as freeze dried (FD) foods, and in many cases, better in my opinion when there is a good mix of ingredients and vitamins. The key to remember, though, is variety.

### **Beef Heart**

Needs to be chopped, cleaned of any fat or sinew, and grated from frozen when needed. Avoid feeding to adult guppies since males may develop a fatty liver and look as if bulging in the chest. Vitamins, garlic and other ingredients can be added using a blender. For young guppies, this is a very cost efficient way of feeding growth food as beef heart can be found to be quite inexpensive in the grocery store.

### **Bloodworms**

Live, frozen or freeze-dried, though high in fat. These are actually the larvae of the *Chironomus* mosquito. Feed only in small, infrequent quantities to adult guppies.

### **Grindal Worms**

These are nematodes similar to microworms but somewhat larger (1/4" to 1/2") and suitable for guppies about 1/2" long to adult. They can be raised in sterilized, moist peat moss mix or potting soil, and be fed baby cereal. These worms, like microworms, are heat tolerant. Cultures sometimes become infested with mites or gnats.

### **White Worms**

These are larger worms (1 - 1 1/2") similar to grindal worms, and related to earthworms, which are high in fat. They should not be fed too often to guppies but is a favourite treat that needs to be chopped due to their size. They do best in cooler temperatures; many people keep them in a refrigerator.

### **Mosquito Larvae (Black)**

These are the typical larvae you see at the surface of outdoor water, and about the most natural food available for guppies; in fact, guppies and their relatives the mosquito fish are intentionally put in lakes and streams to decrease mosquito populations. They are an excellent source of vitamins and albumen and guppies eat them as long as they can fit them into their mouths. You can "grow" them in outdoor tubs in the summer; just seed the water with green water or other bacteria to encourage the growth of infusoria which will attract mosquitoes. You may even use a stagnant wading pool with grass clippings (with no insecticides or herbicides). After gathering the larvae with a net, rinse well. Make sure all the larvae is eaten or they will begin flying around!

### **Drosophila (wingless fruit flies)**

You can keep your own culture of these in a medium similar to that used for microworms, however, they seem to start developing wings and cause a bit of a problem if kept at high temperatures. Harvesting them is easier if they are chilled in the refrigerator first so that they move slowly. Fruit flies can only be fed in a controlled manner, since any uneaten flies will crawl out of the tank.

### **Freeze-dried Plankton**

Contains high protein and fatty acids essential for health and growth; excellent colour enhancer and conditioner; very complete food. Could be difficult to grind up and needs pre-soaking.

### **Tubifex Worms**

Even though fish love these and they are considered by many to be an excellent conditioning food high in albumen, avoid feeding these live to guppies, especially without extensive rinsing! These worms live in sewage, where the water is so polluted that fish could not survive. They carry with them bacteria that often kills guppies. Fortunately they are available in freeze dried form and these should be safe - though use only as a treat.

### **Freeze Dried Brine Shrimp**

Fairly high in salt content but a great source of protein and convenient to feed fry as it crumbles easily. Brine Shrimp is also available in flake and frozen forms.

### **Greens**

Guppies need their greens.

*Algae*: An excellent food source and left to grow on certain ornaments or one side of the tank, the fish can nibble on it between meals. It is a source of vitamins B, C, D and E.

*Spirulina*: A natural micro-algae that is easily digested and rich in proteins, fatty acids, vitamins A and B, as well as iron and calcium. These help guppies have healthier fins and helps them resist skin infections. It also contains carotenoid pigments that will bring out the best colour in guppies. Available in flake and frozen forms. There is now available an item called P.D.P. which is "Pre-Digested Plankton, a patented (Hagen) bio-processed natural pigment."

### **Other Treats**

You may also want to feed a shucked pea. Run a frozen pea under warm water and take off the skin. Drop it in the tank and watch the Guppies attack it! Remove what they do not finish.

Feeding crumbs of fat-free ham once in while is also helpful if you do not have beef heart.

### **Overfeeding**

It is important to remember that it is easy to overfeed an adult guppy. When they reach full size, they need much less food. Some older male Guppies will develop a "pot belly" -- a chestiness that is very unhealthy if they were raised on a rich diet including beef heart. It does seem to help if they remain active as adults, but a fatty diet should be decreased as a fish reaches adulthood or they could die an untimely death. Guppies seem to always be hungry but quality is more important than quantity. You may want to consider fasting your adult fish once a week. This helps keep the water cleaner, and you will find your fish, as a rule, waste less food throughout the week.

## Flakes

There also a number of excellent flakes available. A flake food that details all of the ingredients is the sign of a good one; an expiry date is an even better indication of quality.

Of course, we actually know little about the vitamins our fish get. Packaging tells little. The best we can do is to feed quality foods that list vitamins and minerals, as well as a variety, including fresh foods. Let's look at flakes.

Flakes are essential to fish keepers. A good high-protein flake should be offered to Guppies at least once a day. When you drop them in the tank, they soak up water and grow to about 3 times their original size within seconds, and this should happen before the fish eats them. If your Guppies are too quick it can give them a swollen stomach, so in this case try to soak them for a few seconds first. If flakes are bought in large quantities, freeze what you would not use in the next month and re-fill when necessary. It will help keep your flakes fresh. Vitamins will be lost with exposure to air. Minerals and trace elements, found in fish meal from fish bones, though, have a long shelf life. All in all, deficiencies should not be problem with a good, fresh flake food.

Here is a list of various flake foods and their content. Perhaps you will gain some insight as to what a quality flake is, and what some of the varieties there are in ingredients.

*Big Al's Flake Food:* fish meal, shrimp meal, soybean flour, kelp, plankton, algae meal, yeast, daphnia, brine shrimp, carrot, various vitamins and minerals. Contains no artificial flavour or colouring, which is great. Protein: 45% minimum. This is the main staple flake for my guppies. It can be bought in larger quantities so it is also great value.

*HBH 4 Flake Frenzy:* Has 4 distinct flakes in one mix: Meat Lovers Flake: with fish meal, krill, anchovy, squid, shrimp, crab, earthworm, etc. Veggie Flake: 8 vegetables including spirulina, alfalfa, zucchini, pea, spinach, lettuce, beet and carrot. Colour Bright Flake: contains natural carotenoids like astaxanthin, beta carotene, paprika, marigold meal, etc. Health Booster Flake: packed with chelated vitamins and minerals (such as C, E, Niacin, Calcium Pantothenate, Riboflavin, Thiamin, Biotin, Folic Acid, and Zinc). These flakes also contain garlic, which is known to help prevent internal parasites. However, unfortunately, this food does contain two preservatives including Ethoxyquin. Protein: 42%.

*O.S.I. Brine Shrimp:* Fish Meal, Wheat Flour, Brine Shrimp, Shrimp Meal, Fish Protein Concentrate, Carotene, Dried Yeast, Fish Oil, Natural and Artificial colours (why do they

colour it?) It includes a multi-vitamin supplement. It lists Ethoxyquin as an antioxidant. The only problem I really have with these flakes is that they are coarse, must be pre-soaked, and are too difficult to grind up for fry. Protein: 48%.

*Avant Tropical Fish Food Flakes:* Fish Meal, Plankton, shrimp meal, soy flour, algae meal, dried kelp, oat flour, irradiated dried yeast, fish liver, and a whole host of vitamins and minerals. Protein: 46%.

*Wardley Guppy Flakes:* White fish meal, wheat Flour, Soy Protein Concentrate, meat and Bone Meal, liver meal, wheat gluten, shrimp meal, wheat germ, brewers dried yeast, dehydrated alfalfa, fish oil, lecithin, ground aniseed, crab meal, spirulina, xanthan gum, and it lists several different artificial colours, then vitamins and ethoxyquin Protein: 40% (low). Since ingredients are listed in the order of highest percentage to the least, I cannot say I am impressed with its content. However, this the only fish food I have seen that actually shows a Best before Date.

*HBH Fry Bites:* fish meal, fish oil, blood meal, feather meal, wheat flour, brewer's yeast, soy lecithin, lignon sulfonate, etc. Vitamin enriched, it contains extra fat and protein for good fry growth. Though this is not a flake food but rather tiny pellets, I wanted to include it. It is an excellent food for fry, but they need to mature a couple of weeks before they can eat it. Its protein content is not less than 47% and fat not less than 13% - that is high fat content. However, it does, as most dry fish does, contain preservatives.

*Nutrafin Staple Food:* Fish meal, plankton, shrimp meal, soy flour, laver aquatic plant, kelp, oat flour, yeast, cod fish meal, fish liver, chlorophyll, and many vitamins and minerals. Min. crude protein: 46%, min crude fat: 5%. A good general food.

*Nutrafin Max Spirulina Algae Flake Food (Hagen):* Spirulina pacifica, fish meal, oat flour, P.D.P., soy flour, shrimp meal, squid liver meal, fish liver meal, yeast culture, wheat germ meal, Omega 3 fatty acid, fish oil (preserved with ethoxyquin), kelp, carotene, citric acid, plus a large number of vitamins and minerals. Crude protein minimum 44%, fat minimum 5%. This flake food has a high ration of spirulina! I recommend it for guppies as a supplement. Made for herbivorous fish.

*Nutrafin Max Spirulina Flakes (Hagen):* Fish Meal, Oat Meal, P.D.P., Soy Flour, Squid Liver meal, Laver Aquatic Plant, Spirulina, fish liver meal, shrimp meal, dried yeast, fish oil, kelp, chlorophyll, carotene, vitamin supplements, and ethoxyquin. Protein minimum 44%, fat minimum 5%. Made for herbivorous and omnivorous fish, and has less Spirulina added the above flake. Good food for guppies which should help bring out colour, however, not high enough in protein to be fed as a regular diet.

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