

Aquarist's Guide



This Guide Is Sure To Benefit New and Established Hobbyists

It is intended to assist with setting up and establishing a new aquarium as well as to provide useful information for ongoing maintenance and for keeping your fish healthy.

The information within was sourced from specialist manufacturers of quality aquarium products and the author's decades of experience with breeding and keeping of healthy aquarium pets.

This Practical Guide
[For Windows]

will bring confidence
for the new hobbyist and
breath new life into
what you already know

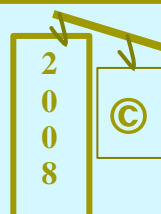
It addresses
the basic principles:
temperature, oxygen, light,
feeding and healthy water

Explains filtration system
Guides you through
the process of selecting,
then setting up your fish tank

Talks about compatibility of
inhabitants and about achieving ideal
conditions in the tank

Suggests best possible
maintenance plan for keeping
your aquarium pets healthy

Deals with preventions,
signs of diseases and
Do's and Don'ts



Comes on 1 CD
Is in PDF and
You can print it out
(17 pages)

1. AQUARIUMS AND THEIR PRIMARY NEEDS

“Main principles of good aquarium management are based on the laws of nature and those who follow them are more likely to succeed”.

The fundamental requirements for self-sustaining aquariums are:

- Ideal temperature
- Sufficient oxygen
- Right amount of light
- Correct feeding
- Healthy water

By striving to meet those requirements you will ensure good health for your fish and that your tank remains at the lowest level on maintenance scale.

Temperature

Water temperature is of importance to tropical fish only. Cold water fish can withstand substantially cold waters, yet do very well in tropical conditions. Both kinds do not respond well to extremes or sudden changes in temperature. It is also not recommended to keep cold water species in the same tank as warm water fish. If not for any other reason - their feeding requirements differ and there is more of a possibility to develop diseases.

It is important to understand that the word ‘Tropical’ is quite misleading as it conjures up a notion of all these fish coming from torrid climates and seems to suggest that they all should be kept in steaming temperatures. A lot of the time this is quite detrimental to the fish and so when things go wrong it falsely implies that they are delicate and difficult to keep. A number of tropical fish don’t come from the tropics and some not from particularly warm waters. By raising water temperature you will rob your pet fish of oxygen supply. In my experience least problematic fish tanks had their water temperatures range between 22 and 25, never exceeding 26 degrees. The cooler the water the more air it can absorb and therefore stays better oxygenated and at the same time slows down the evaporation process.

Sufficient Oxygen

To live fish must breath oxygen. They do it through their gills which act as lungs. Their breathing air comes from the tank’s surface. The larger the air surface of your tank - the more rapid is the replacement of ‘used oxygen’. I call it: the ‘fresh air’ window in an aquarium. The size of your ‘fresh air’ window is what will ultimately determine how many fish your fish tank will happily

sustain. There are many enemies that can exist in an aquarium, which will deplete water from oxygen. Pollution is one and one of the causes of pollution is excessive feeding. Not enough aeration in the aquarium may stunt the fish's growth and often it will cause the water to appear cloudy grey (not green - that's algae). Usually air stone placed in the tank is sufficient to correct the problem. If this is not the solution for you then there are chemical products available to do the job. The air stone should be small so not to overdo the aeration. Excessive supply of aeration causes dependence upon it and when removed your fish don't do very well. Aeration does create water movement and adequate movement is extremely beneficial to an aquarium. Lack of water circulation promotes algae growth as well as existence of other undesirables. Just air stone and filtration system are enough to keep the delicate balance in your fish tank.

Light

For most aquarists fluorescent lighting is the best. Light is necessary for fish to function normally and for plant life to thrive. Though, living room light penetrates into your aquarium it is worthless to plants. As light is essential so is the darkness. Both, night and day are important for your fish (about 8-10hrs of uninterrupted day) and will greatly contribute towards the conditions needed for your aquarium to stay healthy. Too much light encourages algae growth and not enough endangers your plant life and will cause disturbance with the balance of your ecosystem. Light also produces heat and this is worth remembering on hot, summer days. Elevating light where possible will help.

Correct Feeding

Temperature and oxygen are the main factors which directly influence the metabolisms of all cold blooded, aquatic creatures. Fish's appetite is very much affected by the water temperature and determines the amount of food it can properly consume. The warmer it is the faster it breaths, digests, eliminates waste and grows.

- **Avoid overfeeding**

Excessive feeding means waste and this not only causes pollution and depletes the water from oxygen, but when the food particles start to break down by-products are also created. Those are toxic and dangerous to your fish.

- **The rule of thumb: you can feed often, but sparingly**

In the wild fish don't get to sit down to a leisurely meal. They 'grab and run', graze all day, eat when they can and only where and when food is available. In an aquarium at feeding time you will see your pets eat frantically, then suddenly stop. Any left overs will sink to the bottom only to foul up the water later. You can prevent that from happening by timing your feedings.

Eating time varies from fish to fish. Bottom feeders will take longer than small, keen eaters. By watching your fish eat you will be clued in as to how much to feed them. Feedings at breakfast and dinner time with amounts that get consumed within two or three minutes are adequate.

- **Feed the correct food**

The pleasurable times of watching your fish eat will also provide you with much valuable information. For food to be easily found by your fish at each feeding time you will have to offer food which suits their individual eating habits. They can be categorised by the formation of their mouths. All bottom feeders have mouths which are pointed downwards and surface feeders mouths will be facing upwards.

Is the food you are giving them the right size? Some fish might have little mouths and are not able to eat large pellets, large mouthed fish may find that flakes are too small, other fish may be looking on the bottom of the tank for their dinner and the food will be floating on top, or the other way around. It isn't always that the fish are not hungry if they are not eating.

- **Ensure adequate nourishment**

Just as you prefer food from freshly opened packet - so do your pets. Fish food changes over time in the same way as human food does. Foods that are well packaged are preferred, and vacuum or nitrogen packed have a much longer shelf life. Vitamin loss is much slower at lower temperatures. Store open containers wisely. If buying bulk supply, take out what you think you will need over a certain period of time only, then seal and store the rest. Feeding must be tempered with wisdom. Your fish will thrive and breed more readily if there is abundance of good food about.

FILTRATION

Filtration is a process involving mechanical, biological and chemical means for removing organic, pollution-causing elements that are present in an aquarium. It will process the waste produced by fish in the aquarium and provide a healthier, much more stable environment. Your fish will be less prone to disease, more active and more colourful. There are many types of filters available. The most common are Internal Power Filters, External Power Filters, Air Pump driven or Powerhead driven Filters and Air Pump driven Internal Box Filters. Some Aquarium Systems come complete with manufacturers filtration kits already fitted.

Under Gravel Filters are quite efficient and almost silent in operation. Those system are placed inside the aquarium and work very much like the commercial, large, gravel beds seen at some sewerage sites. The gravel bed and the filter plate become colonised by aerobic, nitrifying bacteria which will utilise

the waste as a food supply.

When choosing what will suit you, good idea is to talk to your local pet shops and aquatic suppliers. They have experience and will advise you according to your preferences and the information you will give them.

2. SETTING UP YOUR AQUARIUM

When choosing your fish tank choose as large as your available space and finance will permit.

Tank Comparison Summary

GLASS

Cheapest per litre

Hard to scratch

(scratches are permanent) - Heavy, even when empty - Need to support edges - More easily broken. - Higher distortion when viewed from angle

ACRYLIC

More expensive per litre

Scratches easily

(though difficult it can be buffed out) - Lower rate of distortion - Lighter than glass - Stand needs to support the entire base of tank (not just the edges) - Harder to break

List of items for setting up a fish tank

First decide if it is going to be a tank for cold water fish or for tropicals. Both, tropical and cold water, are fresh water aquariums. To successfully set up fully functional, fresh water aquarium you should have the following items ready before you begin:

- FISH TANK AND STAND
- STYROFOAM (or a rubber mat) to cushion the glass from shock
- GRAVEL at least (approximately) 5kg for each 30cm x30cm of bottom area in your tank
- FILTRATION SYSTEM and air pump for extra aeration, if so desired
- HEATER AND THERMOMETER for tropicals
- WATER AGER (CONDITIONER) needed to remove chlorine and heavy metals from tap water
- PLANTS AND ORNAMENTS to oxygenate and beautify
- GRAVEL CLEANER for ease of cleaning and saving cleaning time

The procedure for setting up

When selecting the site for your fish tank you need to consider the following:

- The tank will need to be strongly supported by the floor
- The floor surface has to be level
- The tank's location should be away from direct sunlight to discourage

- algae growth and interference with temperature control
- The tank should be positioned away from high traffic areas to prevent over stressing fish when walking by
- You will need access to a power point and water supply, both should be within close proximity.

Place the aquarium stand on even ground and make sure it is level and doesn't wobble. Put styrofoam or rubber mat on top of stand, then place the fish tank firmly on top of it. Make sure it doesn't wobble in all directions. It is at this point that you should install an undergravel filter as well as air stones and air pump (air pump has to be placed outside the tank). Position the undergravel filter plate, fitted with an uplift tube, in the base of the tank. Connect the air line to the uplift tube. Install airlines and air stones .

Spread gravel gently over the filter plate, best at about 8cm in thickness and for other types of filtration: 4-8cm (this does not have to be precise). The gravel should have been previously rinsed until the water was running clear. For rinsing always use plain water only (never detergents, salt solution is OK).

Position your plants and secure them a little, by placing ornaments or rocks over the roots, to make it harder for fish to disturb them. Rocks, driftwood and other ornaments (all scrubbed with no detergent, salt solution OK) can now be added making sure rocks are away from the glass.

Fill aquarium with water by pouring into a dish placed on the bottom of tank (to preserve the décor) to 80% or so of tank's height. Water temperature for gold fish is room temperature, for tropicals 22-26 degrees. Next, add water conditioner (according to directions on the container) to neutralize chlorine, ammonia and heavy metals. If filter is other than undergravel assemble and connect this filter (and pump/aeration if any) at this stage.

If the tank is intended for tropical use, install the heater. Aquarium heaters are fully insulated and safe to be submerged under water. Always turn it off when out of water to prevent cracking. For best heat distribution position the heater in the tank at an angle, near the middle of tank and close to, or on the rear glass, then turn it on. Add thermometer and remember to check tank's temperature regularly.

3. CHOOSING AND CARING FOR YOUR FISH

How many fish should you put into your tank? This will depend on the size of your oxygen window. When it comes to calculating how many fish you would

like to keep disregard the depth or cubic capacity of the fish tank. When it comes to oxygen shallow tank will maintain the same number of fish as a deep one, with the same amount of open surface area on top.

- *Rough calculation:* each fish will need the approximate space of twice it's body length by three times the body width of open surface area in the tank. However, your pets will appreciate generosity of as much extra room in the aquarium as you can give them. And - young ones will grow.

Be aware of the many considerations when selecting fish for your tank:

- Do you want adults or juveniles?
- What kind: Peaceful or Aggressive, Semi-aggressive or a mix?
- What mix is an ideal mix for a community aquarium?
- Which level of water in the tank do you want inhabited?

Several of just one breed of fish in an aquarium can look stunning but fish tanks containing several types of fish in them will hold everyone's interest. Those are 'community' tanks. Happy co-existence of many varieties of fish depends on which breeds of fish are introduced to form such a community. Most interesting aquariums to watch are probably ones that have their fish evenly inhabit the top, middle and bottom levels of the fish tank but without overcrowding. You should also ensure that your fish are compatible not just in size, type and temperament but regarding diet and water conditions.

Adult fish give you instant value by enhancing the overall appearance of your tank and can be used immediately as breeding stock, though it is difficult to determine their age. Juveniles, on the other hand, will grow and mature under your watchful eye and allow you to enjoy them that much longer.

Aquarium fish generally fall into one of the four categories:

1. Goldfish
2. Aggressive
3. Semi-aggressive
4. Non-aggressive

- **Aggressive fish** are only compatible with their own species and will protect their territory by constantly harassing, chasing and picking on other fish. Included in this category are fish from Cichlids family. Adult male Bettas (Siamese Fighter Fish) will show aggression only towards other male Bettas.
- **Semi-aggressive** (lively) fish will live happily with other kind of fish but are aggressive towards their own species. They can and have been known to get along with aggressive fish. Therefore to ensure a peaceful aquarium co-habitation, mixing of the two species together should be avoided. Some of the types within this category of fish are gouramis and most fresh water

co-habitation, mixing of the two species together should be avoided. Some of the types within this category of fish are gouramis and most fresh water sharks. Barbs will only display aggression if solo. In groups of three or more they are playful, active and being mid level swimmers are always in view and are fun to watch.

- **Non-aggressive** (peaceful) fish will co-exist with other fish. The most popular within this category are mollies, swordtails, tetras, platties, danios, guppies loaches and catfish.
- **Goldfish** are cold water fish. They are the most commonly enjoyed pets in the world and being the most adaptable and 'hardy species' are recommended for the beginners. They come in a variety of shapes and colours. On the whole they are peaceful and calm, though the larger ones will bully the smaller ones and eat their portions of food. They are at their best in groups of three or more and with their own kind. Single tailed types grow faster than the double tailed ones. They can quickly become too large, fast swimmers, boisterous and damage any part of the delicate, fancy/double tailed fish. Both types are easy to care for but ideally they should be kept apart.
- **Tropicals** are equally easy to keep providing you select the right fish for your tank and do a little homework to assist you with their upkeep.

At selection time observe the fish you will be choosing. Healthy fish should behave in natural manner, interact normally, have good colour, clear eyes and complete fins and tails. Check for fungus or other signs of diseases such as white spot, external parasites or floating upside down or sideways. Select the best. You will also need a net.

Introducing your new fish to their new home must be done in the most gentle way possible. Your new pets are frightened and the smaller species can over stress and not survive their ordeal.

Usually they are transported in a plastic bag with enough air to sustain them for a couple of hours. Even during this short time significant cooling of the water may present danger to your fish. For goldfish temperature is of no real consequence but for tropical fish it should be maintained at an even level as much as it is possible.

Try not to release the new arrivals immediately into their new residence! First, with the bag still sealed, float the fish in the aquarium for 10-15 minutes. During that time open the bag and add a little of the aquarium water to it, close it and

continue floating. Repeat this process every few minutes until you have double the amount of water in the bag. This action adjusts the temperature in the bag and at the same time reduces your pet's stress of entering new water. Hold the bag open and allow them to swim out into their new environment, when ready.

Nitrogen cycle

Nitrogen cycle (cycling) begins to take place at set up of your fish tank. It is a natural, biological process of establishing bacterial colonies in the filter bed which converts ammonia into harmless nitrogen compounds (ammonia > nitrite > nitrate). That's when a new tank establishes its own biological filtration. Nitrite is the bad guy here and must be eliminated from the tank as plants and fish have low tolerance towards it and will soon begin to show signs of illness.

At around the ninth day after the set up of new fish tank test the water as dangerous fluctuations of the harmful nitrite levels start and will continue until such time as the nitrifying bacteria (the good guy) will consume the bad bacteria and begin to lower its concentration in the tank. Partial water change may be helpful. This whole process takes about a month but can be speeded up by adding to your aquarium products available at your local pet shop at time of set up.

Undoubtedly you will experience nitrite built up in your tank many times. It has many causes but the most common is overfeeding the fish, which is followed by excessive fish waste. For the most times the solution to this common problem is to just slow down on the feeding and do regular water changes in the tank.

Aquatic Plant Life

Almost any plant can be adapted to become aquatic and will happily grow when submerged providing its needs are met. Plants purify the water through their absorption of minerals and carbon dioxide and will thrive when given light, food, healthy water, some room to grow and a little attention. Caution must be taken in selecting plants that have not been identified as safe for aquatic use as some are toxic to fish.

Plants not only beautify the miniature, aquatic world but also provide healthful environment. They provide secure shelters and hiding places for fish, supply natural form of, much needed, natural phosphorus and generally serve as additional source of food supply. Many fish rely on plants for spawning and/or for assisting their young with survival.

It is worthwhile to observe that whether the plants are 'rooted plants', 'floating plants', 'bunch plants' or 'potted' to achieve the more pleasing look in the tank the 'busy' effect of too many varieties should be avoided.

Plants love light and where significant amount of any light is reaching the fish tank then the front part of glass, which will be observed most, should face the source of this light, because the plants will turn towards it, giving you their best display.

Space between the plants and the front glass should be left sufficient for fish to swim in and give you more effective view of your fishes and other objects in the tank.

Basic rules: Large plants at the back (and/or in corners) and smaller ones in front. A small amount of knowledge and imagination are all that you need to make it look tranquil and beautiful.



4. "HOUSEKEEPING"



To maintain healthy conditions in the aquarium there are chores. Some are to be executed daily, some weekly and some monthly.

Daily: Make feeding time the time for checking your fish for diseases, signs of stress and any abnormal behaviour. See if their fins and tails are intact. Look for visible lesions, discolorations, parasites, fungus or spots.

Where possible remove uneaten food when feeding is finished (unless you have snails and cat fish). Remove all dead plants and other visible debris as vegetable matter will decompose resulting in excessive doses of phosphates and nitrites. Check the workings of pumps, filters and air stones. Observe if the water is flowing at the normal rate. Make sure the heater is functioning and check for correct water temperature. Are all the fish eating?

Weekly: Do partial water changes; about 10-30% is sufficient. This benefits your fish by increasing the tank's oxygen content in the water, replenishing depleted trace elements and removing accumulated nitrites. It also slows down algae growth. Unless serious problem exists with nitrite etc., and major water change is needed, small amount replaced regularly is safer for fish. Frequent but smaller water changes present lesser stress for your fish. Be sure the added water is of the same temperature and similar pH as the water in the aquarium, and that it has been de-chlorinated and aged before or just after being put into the tank.

Partial water changes are the perfect times for cleaning the gravel. A regular

gravel cleaning is a must. It removes accumulated debris and prolongs the life of the filters. They don't get clogged up and by not overworking are able to continue to function efficiently. Easy to use and inexpensive apparatus called 'gravel cleaner' makes this job a breeze and is obtainable at pet shops.

Caution: Changing 100% of the aquarium's water will cause shock to your fish's system and it is entirely possible the weaker ones might not survive it.

10% to 30% regular water replacement is recommended.

Test for pH, nitrite and ammonia. Ammonia burns were high concentration of nitrite can cause severe problems in the aquarium and is usually responsible for most fish diseases and fish fatality. When is there too much nitrite? When your test kit can detect it. Test kits are available at aquatic suppliers and pet shops but pet shops will conduct the tests for you (at a tiny cost) on request.

Clean accumulated algae on the glass and on all decorations. Ornaments can be cleaned in water mixed with 5% bleach (only if it is really necessary) and soaked overnight. They must be rinsed *thoroughly* and followed by more rinses in clean water, the last rinse being done with aquarium water, before you put them back into the aquarium.

All objects in the tank should be cleaned with the old aquarium water in order to preserve the beneficial, living bacteria.

Monthly:

Clean the filter media, it's sponge, or cartridge and it's other removable parts. The smaller the fish tank the more frequent the cleaning, particularly during the hot weather times. Not cleaning the filter stops water flowing through it efficiently and causes high concentration of deadly nitrite, ammonia and disease carrying bacteria. If cleaning isn't done weekly then it certainly has to be done monthly. Cartridges will need replacing when not able to be cleaned and are slimy. Inefficient filtration allows waste to re-enter the water and cause nitrite formation.

Trim overgrown plants and the cuttings can all be used for growing new plants. Just place them in the gravel, where you want them to grow.

Check the condition of the tank's gravel and if not able to be easily cleaned (by rubbing) and discoloured it may need replacing. New gravel should be rinsed thoroughly, with the final rinse being the aquarium water, before being added to the tank.



5. WORTH KNOWING



Feeding - Flakes tend to drop to the bottom of the fish tank much quicker than do pellets. By feeding your fish pellets you are giving them a better chance of consuming the whole amount of your offering. Just be sure that the pellets are suitable and they are the right size for your fish's mouths.

Just like human food, fish food changes its composition over time, because it is exposed to air, heat and light. It becomes stale, flavourless and eventually lacks in nutrition. To preserve its quality have only small amounts in 'daily feeding jars' with tight fitting lids, always replaced on them at the end of each feeding. Store food in cool places - loss of vitamins is much slower at lower temperatures.

Food requirements in community tanks will vary. A variety of fish requires a variety of foods. Combine an assortment of foods such as several different types of flakes, freeze dried foods, granules and pellets and keep in one large container. You will be offering a great mix of food for every fish at every meal.

Illness - For fish to show symptoms of illness or unusual behaviour is a sign of stress. To avoid further complications identify the cause and eliminate it immediately.

Following is a list of some, most common ailments.

Dropsy - A horrible disease. It is recognised by the way the fish swells up like a balloon. There are other causes like invasion by internal bacteria or when fish absorbs water faster than it can eliminate it. The most common cause is bad water quality. Check for nitrites and consult your pet shop.

Fin Rot - Untreated *damage to fins or tails* can develop fungal (like clumps of cotton wool) or bacterial (whitish but not cotton wool like) disease. Each will call for a separate and different treatment. Identify the problem or consult your pet shop and apply treatment as soon as it is possible. Your fish could have caused its own injury by running into an object while being harassed or scared etc., but more often than not it is caused by another fish nipping. If so, identify the responsible nipper and remove it or it will cause further injuries to others and create an ongoing problem.

Fungus - white, cottony infestation visible on fish and if fish is still eating can be treated with antibiotic food. If the fish is not eating a treatment is

necessary in a form of a bath or medication added to the tank. Care must be taken with treating the aquarium water as some of those treatments will kill plants and harm your biological filter. Best consult your pet shop.

Hole-in-the-head disease - As the name suggests the fish develops a hole in the head and sometimes body. Causes are not clear and if fast treatment is not administered into the fish's system it usually proves fatal.

Itch - is often triggered by temperature fluctuations. Easily recognised by its symptoms which are: tiny, white spots and fish will rub themselves against glass or objects in aquarium. To remedy be sure to use the correct medication to kill the parasite and prevent it from spreading.

Sluggishness and inactivity, fins drawn together - all call for water testing and in most cases the cause will be high concentration of nitrite.

Swim Bladder Disorders - Most common in gold fish. Fish will swim up side down or sideways. This disorder can be caused by dry food eaten too quickly or by bacterial infection in which case the treatment is antibiotic food if the fish is eating.

White Spot - Fish will have visible, white spots on their bodies, similar to small grains of salt. It is a living parasite and spreads by dropping off from the infected fish onto another fish or any object in the tank. Must be eliminated early if to avoid troublesome infestation. Salt and raising of tank's temperature are beneficial but medication is available and more effective.

Won't eat - Fish won't eat for a number of reasons but it always indicates that there is some stress involved. Your fish may have bacterial infection like mouth sores (siamese fighters suffer from mouth ulcers) Look for body sores, fungus or other visible signs of disease. Usually it means that their immune system is suppressed because of bad water quality. Test the water (and check water's temperature in tropical tanks as extreme temps can also cause stress) then take appropriate steps to remedy the problem.

USEFUL PRODUCTS

Prevention is always better than cure.

Use **water ager** every time when adding new water to the aquarium. It will effectively neutralise chlorine and all other toxic components in tap water, making it safe for your fish.

Though biological filtration is still needed to convert the neutralized ammonia to a non-toxic form of bacteria, applications of helpful microbes can be added to the tank during the initial cycling process to lower the ammonia levels and minimise the stress of your fish. Products containing **nitrifying bacteria** are available at aquarium and pet shops. Such bacterial colonies can jump start your 'cycling' time. To survive for extended period of time this first generation of introduced, good bacteria needs oxygen and food. Liquid food formulas are available exclusively for this purpose.

A Little About Bettas **(Siamese Fighters)**

Highly recommended, amazing, low maintenance, aquatic pets. Females are quite drab and males are the more attractive ones. They now come in greatest assortment of fabulous colours. Colour variations range from shades of black to white and come also with many shapes of fins, including a double caudal fin. They are tolerant of a wide variety of water conditions, food requirements and temperatures, although one has to remember that they are a tropical fish. Mature males need to be kept on their own and will attack another male if given the chance, causing severe damage to their beautiful finnage. Unlike other fish Bettas have accessory breathing organs, called labyrinths, with which they breath air directly from the water's surface. This enables them to survive in limited spaces, though they enjoy living in a generously spacious aquarium as well. Anywhere in between is ideal.

Though it has been successfully done where a Siamese Fighter fish was kept in a community aquarium, it is not recommended. Apparently Bettas have fins which are tasty to other species and will get damaged over time.

Adult males will built nests on the surface of their water and this is an indication of readiness to spawn. The process of spawning is quite easy providing that all measures are taken in protecting the female and all requirements for success are met. A little research will benefit anyone interested in trying to breed their Fighters for the first time.

* For better display of your Siamese Fighter's finnage place a mirror behind his tank and see the instant reaction! It is only excitement and not stress.

Algae Control

This is a very common problem, but not all algae is bad. This tiny micro organisms are actually quite helpful to the wellness of aquariums and it's inhabitants. But to keep algae at acceptable level reduction of it's food source can often be the answer. Excessive amounts of nutrients and light are just the food that all

algae needs to survive. Natural form of control should always be of primary consideration and the addition of snails and 'algae eating' fish can certainly be of benefit. If algaecides are your preference - they are available through the aquatic outlets but the use of these products must be done with care. Continuous applications can, and probably will, harm your plants and bio system.

Do's and Don'ts

- Remember to unplug your aquarium heater when changing the water.
- Be sure to allocate a special bucket and all other equipment for aquarium cleaning to be exclusive for that purpose.
- Always test the water in the tank before doing water changes
- Nutritional value of food stored for a long period of time (but not spoiled) can be improved by addition of just a few drops of liquid fish vitamins to dry food just before feeding.
- When going away lower the temperature in the fish tank and you will be slowing down your pet's metabolisms, lowering their appetites and not having to supply much food at all. Adding more plants to the tank will provide extra source of food. Wasted food will foul up the tank.
- Two smaller heaters in a tank are better than one big one. If one breaks down the problem won't be so bad.

Conversions

(Litres) Volume = length x width x height/1000	Temperature: 75°-79°F = 24°-26°C
3.78 litres to 1 US Gallon	Weight: 28.35grams = 1ounce 2.2lb = 1kg
Solution 1% = 10ml per Lt = 10grams per Lt	Average tsp = 5ml of liquid

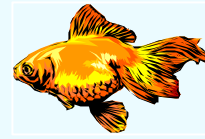
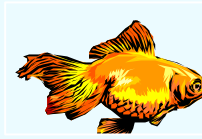
In Conclusion

The saddest part of fish-keeping is the premature death of these pets. Illnesses will occur and treatments can fail. The most common cause is the improper care such as poor water filtration or plain negligence where the water changes are not regular and daily checks are not carried out. Their water must be 'breathable', filters and thermometers reliable and you will need to spend time and money for their health and your viewing pleasure.

May Yours Be A Happy Aquatic Experience



AQUARIST'S GUIDE



This practical guide (for Windows) is available on CD
Is in PDF and may be printed out into a book form.

At times it may be obtained
from eBay
or through the following outlets:

Pets at Port

1/17 Bellbowrie St - Port Macquarie
NSW 2444 - Tel: 02 65835550

Or by contacting the author direct at any time:

e-mail: win.circle@tsn.cc

Important



There are clubs, societies and free advertising venues available to you when you decide (for whatever reason) to give away unwanted fish. No matter how tempting and humane it seems to put them in a public pond, or some other public waterway, they represent a real threat to our native species and most likely this action is illegal in your state.