

Select Aquatics of Erie, CO.

Dealing With the Most Common Diseases

Disease is not inevitable. However, even with consistent control over the environments of the fish we keep, something still comes up once in a while. But there are ways to keep your tanks such that disease is rare when it occurs, and hopefully through early, effective intervention, any problems that you do encounter will be minor and easily, quickly remedied.

Many of the texts and information available when you do encounter something are inexact, confusing and often geared toward encouraging you to purchase a product. Many of us learn about treatments in the dark aisles of the local fish store, hurriedly rushing there after noticing something that doesn't look right in our aquarium. We don't know what disease we have, don't really know which medication is the correct one for the condition we are looking to treat, and are then shocked to find out that some medications can cost \$20-30 for a course of treatment! We certainly don't know if we have gram negative or gram positive bacterial activity, or which medications can't be used with certain types of fish or plants.

After many years of eventually encountering the most common maladies, the evaluation and actions taken in this fishroom deal effectively with most diseases encountered by the majority of hobbyists. This essay is an effort to share that process. There are fishkeepers that observe disease tissue and can tell you the exact identification of the disease organism, and can then communicate the strengths and weaknesses of a wide variety of treatments. That level of knowledge has not been necessary for what is encountered here, and most instances can be addressed through a few timely procedures.

Before proceeding further, placing any new fish to your fishroom by themselves in a quarantine tank can't be overstated. Any fish obtained from a source that does a dynamic, high turnover business cannot guarantee that your fish will be disease free. For the fish, the move from the wholesaler, to the shop, then to you with three possible water parameter differences, stresses the fish, and lowers their ability to fight infection. So the odds of a new fish bringing something into your tanks is greatest when first introduced, and bringing a disease into your room is the most common way to contract one. Removing that possibility cuts your odds at having to address a disease situation by at least half.

Why does illness occur, and what can be done to avoid or prevent it?

When we first set up an aquarium, we all learn which aspects of their care need to be consistent, and what happens when certain parts of their care are neglected. If fish are chilled for any period of time – the heater breaks, or the power goes out, an aquarist may face the most common disease encountered at one time or another- “ich”- Ichthyophthirius. Though many fishkeepers still lose entire tanks to this disease, it is one of the most easily treated, with the greatest odds of survival of your fish.

Ich is a parasite organism that is arguably always present in aquarium water. Small, hard white spots begin to appear on the fins and body of the fish, and within a day of seeing the first couple spots on a single fish the entire tank may be covered, so action must be taken within a few hours. Within another day you will start losing fish. If you do not have a widely available ich medication around, raise the temperature to about 82 degrees (if the type of fish you are keeping can handle temperatures that high). This may arrest the outbreak by itself, but adding medication that will kill off the organism for the time being is needed. Some may also add a medicinal level of salt- 1 tablespoon per every 5 gallons when the heat is raised to assist the fish to overcome the outbreak.

Our approach at Select Aquatics is that fish health is a direct result of the water quality maintained for them, the quality of their diet and the resources available to live a healthy, relatively stress free existence. We wish for the fish to grow to their maximum size, and to breed when they should. For these things to happen, the fish has a certain amount of energy to express. It can go toward growth and interest in breeding, or toward toward working to fend off disease in a dirtier or more disease-prone environment. For the fish to do well, certain disease preventing steps are taken.

The temperature needs to stay consistent at the level appropriate for the species. A fish's metabolism increases when water is warmer, decreases when colder. If water temperature becomes colder, a fish's immune system becomes vulnerable to being compromised- so the ich parasite, for example, is able to establish itself through the stress of the fish becoming chilled. Mulm is routinely removed from the aquarium as accumulates, and the filter medium is changed regularly. The tank cannot become overcrowded, and the fish chosen to be together get along.

Circumstances that may weaken the fish and increase their vulnerability to disease are:

- When the filter is allowed to become too dirty
- If the heater is inconsistent, or there are wide temperature variations in the tank (more than 3-4 degrees)
- Areas of mulm are allowed to accumulate in the aquarium, adding ammonia to the tank.
- Gravel is used that collects and hides a building quantity of organic waste
- There is a lack of adequate aeration.
- Water changes are less than a minimum of 20% per week, or not done frequently enough.
- There is use of an undergravel filter (at one time these revolutionized the hobby, but today are avoided by most fishkeepers as they collect and contain debris within the aquarium.)
- Overfeeding such that uneaten food is allowed to deteriorate in the aquarium
- The occasional fish that may die. Deaths are a particular problem, as a fish allowed to decay adds a substantial amount of organic deterioration- especially to a tank under 30 gallons. If a tank is at maximum capacity, and a fish dies that is missed for a day, the decomposition could easily cause an ammonia bloom that could wipe out other fish in the tank.
- Tankmates that do not do well together introduces stress, which triggers disease. Fin nipping, scrapes and general bullying introduce opportunities for disease to take hold through stress and injury.
- The introduction of a sick fish to an aquarium, particularly to a tank where the fish are already stressed, could quickly cause an unanticipated outbreak.
- Lastly, be aware of dietary needs of your fish. Feeding a high protein diet to fish that require a vegetable diet- such as many of the the African rift lake cichlids- will cause them to bloat and present other signs of illness.

Whether a tank contains a certain disease, parasite, etc., cannot be known. Some claim a tank that has not been exposed to, say, ich (white spot disease) is not going to experience an outbreak unless it is introduced. Others feel that everything already exists in most aged aquariums, and the absence of disease is not due to care to avoid their introduction, but keeping the fish at their healthiest state to avoid being overtaken by anything already present in the aquarium. Those believe that by providing a clean, healthy environment with food that is both appropriate and quality, disease can be nearly prevented from occurring, such that an outbreak is very rare.

Whichever is correct, it is best to assume the latter, for there is no way to know for sure whether a disease organism exists in your tanks, and by assuming you can ignore the threat posed by some diseases, the fish care could be compromised.

Another issue that must be considered is the risk a sick fish poses to the rest of the fish in the tank. When many fish exist, and a single individual may be developing a patch of fungus due to an injury, it is best to immediately remove that fish from the tank, to be medicated and heal in a tank of their own. Often, when a disease strikes, and you act quickly to isolate the sick individuals and treat the rest, you may end up losing the fish that initially became sick. To end a disease outbreak with only the loss of the initially sick fish, and not the entire tank, is sometimes the best you can hope for.

Fungus and fin rot are possibly the next most commonly encountered problems. Fin rot is common in guppies and other fish with flowing fins as a result of circulation issues introduced through selective breeding, but occurs commonly in all fish, generally as a direct result of a deterioration in water quality. The outer edges of the fins will literally be rotting away, with a ragged or whitish appearance. Often, a 50% water change, changing the filter floss or filter medium, cleaning the tank and adding a medicinal level of salt will arrest the disease. Many medicinal preparations are available for this as well, and are very good at curing this when it occurs.

Fin rot in some fancy strains of fish- particularly the large delta tailed guppies, has been discussed at length by breeders of the fish. The larger finnage leads to a compromise in circulation, which provides an avenue for disease to

overwhelm the fish's immune system. To address this, many breeders depend on the constant presence of the medicinal level of salt mentioned earlier, strictly bare bottom tanks and regular, substantial water changes. The problem is that over a number of generations, with fish that have never had to face disease outbreaks, or that were raised in environments where disease organisms/ outbreaks are effectively suppressed, those fish do not thrive well when removed from that environment. They seem to have little ability to fight what for most fish are commonplace. As a rule, fish in adequately well maintained aquaria do not encounter fin rot unless there are other problems, generally related to simple cleanliness.

When addressing cleaning a tank, keep in mind that changing everything dirty could also cause problems by removing too much of the bacteria that the naturally occurring biological filtration in the tank depends upon. The way to avoid this is when changing the filter medium- particularly if the tank was especially dirty, is rather than simply throwing out the filter medium, instead rinse it thoroughly in clean aquarium water- not water from the tap. Then, after the particulate matter and dirt has been rinsed away, return the medium to the filter. Allow the medium to maintain filtration in the newly cleaned aquarium for at least 7-10 days before replacing it.

Fungus is also very common, generally occurring as a result of an injury or scrape, or again, fighting a dirty environment. Generally seen in two forms, white tufts of hairlike material can appear on the fins or body of the fish, and a separate form will often develop around the mouth area. This "mouth fungus" is often a result of an injury, and will quickly grow to interfere with the ability of the fish to eat, and is occasionally fatal if not immediately treated. The other type of fungus, sometimes just referred to as "body fungus" is again a white tuft of hairlike, cottony material that spreads and can infect other fish.

Fungus is an organism that is quickly treated by a wide number of antifungal fish medications, and when treated quickly is often cured within 1-2 days. Fungus also happens at the site of injury, and when this occurs it is best to treat it quickly with an available anti-fungal medication available at most tropical fish stores..

Body Slime is not really a disease, but a reaction to something the fish is making an effort to defend itself against. Usually a whitish slime along the sides of the body, it saps the fish of energy and the fish generally thins down until it dies. The addition of salt is usually very beneficial- 1 tspn per 5 gallons of water, preceded by a water change, and again, a number of medications widely available can cure this when acted upon quickly.

Livebearer Disease- This condition first became well known in the hobby in the later 1990s. Not a bacteria or a virus, it is a parasite that lives on the skin of the fish and feeds on its fluids. The fish appears to waste away, often with a sunken belly until it dies. This is most commonly seen in livebearers, particularly the guppies, swordtails and limias. There is only one effective treatment for this that works quickly and stops this condition. Levamisole hydrochloride. ¼ teaspoon of the white powder form will treat 100 gallons. Treat twice, 24 hours apart, each treatment preceded by a 30% water change.

Crooked spines- Crooked spines are not a disease, but a genetic deformity that may arise as a result of a line of fish inbreeding. The genome is simply expressing the mutations it carries, and culling the bent spined fish will help stabilize the line. Some argue that bent spines are not in fact genetic in origin, but environmental. The best course is to remove them so that they do not breed, and there is no reason to believe it is contagious.

Camallanus worms- These are a small, intestinal nematode worm that are common in the hobby. They can often first be seen as small, waving threads sticking out from the anus of the fish. The best treatment for them is Levamisole hydrochloride, at ¼ gram per 100 gallons. Treat twice, 24 hours apart, each preceded by at least a 25% water change.

Levamisole hydrochloride is available from other hobbyists and some feed stores. It is generally used as a dewormer for cattle and sheep. There are other over the counter remedies available, but they generally do not work as quickly or as thoroughly. Contact Select Aquatics at selectaquatics@gmail.com as they may have it in stock.

The **selection of medications** available today is much improved from years past, where the problem was the complexity and variety available. Often aquarists had little knowledge of the most efficient treatment for the disease they were dealing with. Aquarists swore by various antibiotics because they had worked for them in the past, apparently unaware that because a specific antibiotic had effect in one instance, it would not necessarily work the same way in others.

When choosing a medication to use, there are a couple issues that must be taken into consideration. Some medications will come in tablet form, with say, 10 tablets to a box. When reading the instructions, you may find that a course of treatment for your 30 or 50 gallon tank may take 2 or 3 or 4 packages, which could become prohibitively expensive. As well, some medications can be very harsh to the established biological activity in the tank, creating a tank that may need to be treated as a new, "uncycled" aquarium. Lastly, some medications may kill your plants or discolor your aquarium. The coloration is generally temporary (usually either yellow, blue or green), and repeated water changes every few days until the tank is back on its feet may be necessary.

Sometimes the end result of a bout with disease is a tank that is empty (because the fish were moved to be treated in a smaller tank, or were taken by the outbreak), and that tank now needs to be disinfected. You do not need to disinfect a tank after a disease has been treated, but sometimes because of the nature of the disease you may want to start with a

clean slate. The way to do it is this:

Bleaching a tank- This essentially disinfects a tank and takes it to a totally clean condition. With some diseases, this is the only way to know for sure that you have entirely removed the pathogen. Remove everything from the tank if possible, especially anything living as this treatment will absolutely kill anything in the tank. This procedure does not harm the silicone, sealants or the glass. When the tank is ready to be bleached:

Keeping the tank filled (if anything, have the tank filled slightly above where it is normally), and with the filters running normally, pour in 1 cup of bleach for each 10 gallons of water. Let the tank run for 24 hours this way. You may want to provide ventilation as the bleach evaporates from the tank being treated, particularly if there are other tanks with living fish in them in the same area. The other fish shouldn't be affected, but having the chlorine in the air and blown into the tanks should be avoided.

If you have moved the gravel to separate containers, after thoroughly rinsing it of any debris, the best way to disinfect it is to boil it for about 5 minutes, let it cool and rinse, then set aside. Other items can be disinfected by soaking overnight in a 5 gallon bucket in water with about ½ cup of bleach, then thoroughly rinsed afterwards.

After 24 hours drain any water from the tank and the filters. Refill the tank, then run the tank for 2 days. Then drain again and refill. Let run for 24 hours, then try a couple test fish, and check on them in 24 hours. If they have expired, drain and fill again. Wait 24 hours, try a couple more test fish.

If they survive, then you can consider what goes back into the tank. When using bleach, use the smell test. Smell everything carefully and closely. If you can smell bleach, at all, do not put it into the aquarium. A very small amount of bleach- a hint of bleach- can kill a lot of fish. Keep an eye on the test fish for another couple days after the tank is put back together, and start water changes. If all is well, then add about 10% seasoned water from another tank nearby (or a few cups from a local pet store) to help get the tank biologically started, and slowly begin adding the fish.

All fishkeepers encounter disease at one time or another, but a consistency of proper care is the only way to generally avoid it. However, we all have power outages, accidents, pieces of equipment that break, times when we are away... and the result can often be an outbreak of something in your aquarium. But with consistency and cleanliness, disease is rare and is generally treated fairly easily.

Greg Sage

selectaquatics.com

selectaquatics@gmail.com

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