

Freshwater Ich

Ichthyophthirius multifiliis

Causative organism: Ciliated protozoan parasite viz: *Ichthyophthirius multifiliis*

Synonyms (alternative names): Ich, White spot, salt-and-pepper disease.

Geographic distribution: World wide.

Water type: Fresh water.

Typical signs of infection: ***Ichthyophthirius multifiliis***.

Water. Elevated Ammonia levels, high Nitrate measurements, & sudden changes in Temperature especially a fall in Temperature can bring about a latent infection.

Behavior. Anorexia, (loss of appetite with consequential wasting), hiding abnormally, rubbing & scratching , breathing at the surface, fast respiration, refusing all food are all typical indications, but these are also signs in other problems so diagnosis must be coupled with other indications.

Fins. Fins folded, Fins showing white spots about 1mm in size.

Body. White spots from .2mm - 1mm in size will appear over the body.

Eyes. Eyes may appear cloudy.

Gills. Gill examination may show numbers of such white spots.

Skin. (smear). Should show ciliates if white spot is present.

Life cycle & method of transmission.

White spot, is a parasite that covers the entire globe, & there are few Aquarists that have not met it on one or more occasions. A sudden chilling of the fish, which can easily occur when they are being transported from the shop to one's home, is often sufficient to take the parasite from its latent state to the reproductive phase. An unchecked outbreak will bring about a heavy mortality rate, though it takes usually quite a number of days before such comes to pass, thus giving the Aquarist time to take remedial action.

White spot "Ich", is a ciliated parasite with a three stage life cycle. On the fish, the only part that we can easily observe, the form is termed a *trophont*, & causes the appearance that gives rise to the popular name of the condition, i.e. "White spot". As the trophont matures it eventually breaks through the skin (epithelial layer), & falls to the bottom of the tank, during which phase it can attach itself to any of the various materials that we use in our Aquaria, such as gravel, filters, airline tubing & more.

This part of the life cycle is called a *tomont*. How long it remains in this stage is a variable. Higher temperatures will accelerate its maturation, while colder water ensure a longer latency. For this reason many Aquarists use an elevated temperature to try and cause the parasite to mutate into the final re-infective form termed a *theront*.

The parasite is at its most vulnerable while in the free swimming *theront* form before it encysts as a *trophont*. Various chemical therapies are effective, such as Malachite green, or Malachite green with formalin. The Theront stage is very sensitive to higher temperatures, which is the reason that many skilled Aquarists often try eliminating an outbreak, purely by increasing the temperature by some 5-8°F while the infestation is endemic.

Prognosis:

If diagnosed early and effectual treatment is applied, the outlook is excellent. However if the infestation is at an advanced stage, then mortalities must be expected. Any treatment method must take into account, both the species of fish (some will not tolerate the more popular medications, see below), as well as how heavy the infection rate is. Diligent observation of these criteria should enable the Aquarist to obtain a successful resolution to the problem.

Treatment

The most common treatments contain Malachite green, sometimes combined with Formalin.

The dosage will vary according to the manufacturer, but a typical treatment level for Malachite green is .1mg/L of water. Formalin ranges from .25mg/L to much higher levels depending on the combination with Malachite green or usage alone, also on whether it is meant as a timed bath treatment or prolonged immersion. One must refer to the instructions on the chosen medication but also be aware of

the points below to achieve the desired result. We offer [Malachite Green](#) in a 1.25 oz. bottle which is dosed at 1 drop per gallon. We also have a [Malachite Green Concentrate](#) which is offered in powdered form. You simply add water (we recommend R.O. or distilled) and then dose at a rate of 1 teaspoon per 10 gallons. [Formalin-MS](#) is another alternative we offer for treating this parasite.

There are several cautions which must be noted when treating ich.

- 1) Some fish, especially scaleless forms such as Clown Loach, Elephant noses, & many others, also a great many Tetras, are adversely impacted by the use of Malachite green, or some cannot tolerate the full dosage that others can. It is therefore essential, that BEFORE applying any chemotherapy, that one is aware of the limitations of the chosen treatment, & if in doubt seek some professional advice. Otherwise the "cure" could be worse than the disease. We have seen many times, entire tanks of fish wiped out for this reason, sick & healthy fish alike. Our product, [No-Ich](#), is safe for all types of fish, invertebrates and plants.
- 2) Heat treatment can be highly effective, however, again there are species of fish that will not tolerate the temperatures needed to be effective. One such example would be White Cloud Mountain Minnows. A temperature of say 82°F or higher, will cause such fish to succumb very quickly. Additionally, ich damages the gill tissues of the fish making breathing more difficult. The oxygen content of your aquarium water drops as temperature increases. Care must be taken when increasing temperature so that you do not add additional stressed to your already stressed fish.
- 3) The degree of the infection. Grossly weakened fish, will not tolerate medication that more robust & less infected ones may. All medications to some degree, are toxic not only to the parasite but also to the fish, it is a matter of judgment, that can take many years of experience to know just how much of a medication to use. The guide lines given on most proprietary treatments, can only be considered guidelines, & the user must take into account the many variables before making his/her call on how much to use. Again, our [No-Ich](#) is a much more gentle therapy for your fish but it does work a bit more slowly than other options. If you fish already have a more advanced infestation, [Malachite Green](#) might be a better alternative, keeping the aforementioned cautions in mind.

It is also vital to ensure that after a treatment has been selected & found effective to make certain that water changes are made afterwards to try and minimize any side effects on your biological filter as well as plants etc. Naturally if it is possible it is better to treat in a hospital tank, and when the fish are cured to reintroduce them to the main aquarium. This ideal situation is not always possible however.

Refs. & further reading.

C.van Duijn Diseases of Fish . Published by Ilife books London. 1973

M.Stoskopf. Fish Medicine . Published by W.B. Saunders. 1993

D.Untergasser. Fish diseases. Published by TFH 1989