

Coming out of Cold Weather

Part deux

The last time we looked at the use of Potassium Permanganate. It's cheap, does a great job, but as with any treatment you must be very careful. In discussions with Harold, what we are decided to try and accomplish here is a way to help your fish critters come out of cold weather and winter conditions effectively. Then, kill as many of the bad bugs as we can to help our fish come out of winter water safely. Conduct some preventive maintenance if you would. Remember, as the water temperature warms those bad bugs begin to get active, moving around looking for a spring snack, and begin munching on your fishes. We want to prevent the ulcers, mouth and fin rot before it happens. We discussed the importance of cleaning your pond and how important that is at all times. We provided one proven regiment by Doc Johnson in the use of Potassium Permanganate and how it helps prevent bad bugs from getting started.

In this article we are going to talk about an alternative treatment with the use of Proform-C and Praziquantel.

Most of this information in this article comes from various articles and specific writings by Dr. Erik Johnson and proven methods conducted by Bonnie E. Hale, An American Koi breeder and owner of www.bonniesplants.com fame.

Proform-C

Proform-C is a Formaldehyde and Malachite Green combination over-the-counter product that is perhaps the best choice as far as a Formalin product to kill parasites. FMG is effective on most microscopic parasites without killing the host. Proform C kills Ich, Costia, Trichodina, and Chilodonella. It DOES NOT kill flukes. That's why we later treat with Prazi. Used as directed, Proform-C will not harm the biological filter. Proform-C is a commercial mix of the two products that is a bit weaker then mixing specific 37% Formaldehyde and Malachite Green at pond side. Proform-C allows the average pond owner to perform a simple measurement of a premixed product to a known pond water volume and gives the user a good margin of error protecting the fish and still killing bad bugs. Part of the reason for this product is that since 9-11 the shipping industry and the Federal government has tightened shipping restrictions which make pure Formalin illegal to ship without stringent Hazmat labeling and fees. A gallon of Formalin which once cost \$16 now costs \$64 and requires a ream of paperwork.

There are a few drawbacks that should be of concern. Formalin and Salt don't do well together. Do not use with salinity *greater* than 0.1 %. Lower is better here. Do not use with any other drugs or chemicals. ProForm-C is poisonous to humans and pets and may be fatal if swallowed or may cause blindness if it comes in contact with eyes; can prove harmful if inhaled or absorbed through skin. Personal protection is paramount. You may want to remove your plants if treating with this product because formalin is an active ingredient in herbicides! Plants may not die but will turn yellow if left in the pond during treatment.

The treatment is safe at low temperatures (50 F). This is somewhat of a drawback. We know that *Aeromonas* and *Pseudomonas* become active at 42 F or the beginning of the dreaded *Aeromonas* Alley. The Proform-C labeling calls for three treatments, three days in a row. The last treatment is conducted by combining the Praziquantel to complete the process.

Proform C is becoming more and more popular as more Formalin/Malachite compounds get sidelined by hazmat shipping problems. Proform C is relative new on the market. It's readily available, easy to use and legal for shipping. Since Proform C is not a proprietary 37% Formalin solution, you should use and labeled guidelines which are shipped with it. We have been discussing the brand name of Proform-C. There are several FMG products on the market that are the same compounds but go by another name. Check the label for the contents always. Prices vary a little.

Praziquantel

Praziquantel is a bitter tasting powder which shows good absorption directly from the treated water, and then admirable clearance of various surface and internal flukes (trematodes) and internal worms in fish. Because it's gentle, Praziquantel is, and always has been, the "treatment of choice" for Flukes (trematodes) in fish. Praziquantel does not require water changes, praziquantel is harmless to fish of **all** species including Koi and goldfish fry, and is non toxic to plants, and; (unlike pure Formalin); praziquantel has no negative filter impact.

Praziquantel has been known to the hobby for many years. The drug is simply put in the water and within just a few hours the infected fish shed the adult parasites from their body and intestines. Long tapeworms are sometimes found on the bottom of the treatment tank. It was determined also that the Praziquantel was effective at killing and stopping Fluke (monogenetic trematode) infections. It is entirely conceivable that the flukes can be eradicated with only one treatment. The real bonus with Praziquantel is that when you treat for flukes, it also rids the fish of any internal parasites or worms.

Praziquantel was traditionally available from your vet in the form of branded Droncit tablets, for oral administration in dogs and cats. The average retail (vet) price was something on the order of four dollars per tablet which only contained thirty four milligrams. Considering the proper dosing of praziquantel, the cost of treating a thousand gallons of water would normally be \$908.23. That's not very good.

Lately; the drug has become available such that it can be deployed for about \$30 per thousand gallons to be treated. There are powder and liquid products. The premixed liquid product is costly.

The recommended dose of Praziquantel is 2 milligrams per liter of water. This means that in 100 gallons of pond water you would need about seven hundred milli-grams. In a thousand gallons you would need about seven grams of Praziquantel. The drug is simply stirred vigorously into a liter of clean water and, when mostly dissolved, the white

colored suspension is deposited into a high-flow area of the pond. If the fish ingest some of the medicine as it settles out, it's not a problem. Discontinue carbon and UV during treatment to avoid inactivation of the Praziquantel. You do not need to bypass the filter nor worry about oxygen levels during treatment. The most successful treatments are deployed in cleaner ponds, so any excess leaf litter or debris should be removed. Clearance of the flukes can be determined by microscopy or the overall improvement of signs of flashing and scratching. On occasion, segments or ribbons of worms may be passed in the fish stools and are generally of no concern to human health. No side effects as far as fish behavior or health have been reported or expected.

If you're treating a **Fluke** infestation only, traditional wisdom suggests a single repeat treatment in four to five days after the first treatment to kill emerging larvae which may have been shielded from treatment by the mother-fluke or the egg.

The advantages are that Praziquantel is entirely benign to plants, fish and filter while clearing the Flukes and intestinal worms out rapidly and completely, even with fry.

Now, it can be considered that praziquantel is the least-expensive specific aquaculture Fluke treatment for ornamental ponds. When you consider that it requires only one or two doses and does NOT require water changes, nor plant removal, nor increased water agitation, this remedy is even superior to the "once king" Fluke Tab which contained a potentially damaging organophosphate and has enjoyed, at best, spotty availability during the summer months.

Still not cost effective for large applications such as lakes and natural ponds. Praziquantel is [commercially available](#). At retail, a Google keyword search of Praziquantel and/or Koi should probably turn it up or [PondRx.com](#) has it in stock and ready to ship, even overnight.

Do not use on food fish or fish intended to be used as food. Keep out of reach of children. Do not take internally except by or on the order of your physician.

Proform-C and Praziquantel can be used together on the last treatment of the pond to conquer all parasites that affect our fish. A recommended treatment regiment is listed below.

Treatment

DAY 1

Do a large water change, at least 30% or so, preferably by vacuuming off the bottom of the pond to remove as much crud as you can. Formalin is bound out by organics so it is important to have a clean pond to start treatment with. Treat new water as always with declor. Day 1 is done.

DAY 2

Treat the pond with ProForm C using 10 ml per 100 gallons of water (100ml per 1,000 gallons). Follow the bottles and manufactures recommended procedure.

DAY 3

Treat the pond with ProForm C using 10 ml per 100 gallons of water (100ml per 1,000 gallons). Follow the bottles and manufactures recommended procedure.

DAY 4

Treat the pond with ProForm C using 10 ml per 100 gallons of water (100ml per 1,000 gallons). Mix the exact amount of Prazi with the last full dose of Proform-C or it has been discovered that if you mix the Prazi with a little vodka it helps dissolve the Prazi a bit better. Pour the mixture around your pond edge. You're done. Do not do any water changes for the next 7 days. This allows the Prazi to knock off any eggs that may hatch.

Well that's it. A few good ways to bring our Koi out of Winter water. Call if you need Help.

Joe