

Potassium Permanganate

By Larry Lunsford

P-u-r-p-l-e P-o-w-e-r

There are all sorts of parasites and harmful forms of bacteria lurking in your pond, just waiting for an opportunity to attack your Koi. One cheap treatment that is effective on a wide variety of bugs is potassium permanganate (KMnO_4 a.k.a. PP). Before heading to the pond with a jumbo bag of PP, take some precautions. PP is a strong oxidizer that can be very dangerous - no not get it near your eyes or lungs as it can cause serious physical harm. PP can react with other chemicals so keep it secured in a tight container. When using PP, wear goggles, wear rubber gloves to prevent getting stains on your skin and wear clothes that you don't mind getting stained. Prepare your dose of PP inside where you don't have to deal with wind, splashing water, and unstable places to set jar of PP.

Before you even think about using PP in your pond, you must be properly prepared: know your pond's volume to within +/- 10%; carefully calculate your needed dose - double check your calculations; be able to accurately measure the required dose of PP (to within +/- 10%); have sufficient dechlor (sodium thiosulfate solution) or hydrogen peroxide on hand to neutralize an accidental 10X dose of PP; have sufficient aeration in your pond to bring it to a strong "boil"; PP will kill your biofilter - bypass the filter while treating. PP is the nuclear bomb of Koi medications - if you aren't properly prepared, then DON'T USE PP! You can buy PP at Aquatic Eco-Systems and some water treatment suppliers.

Now that you've got a healthy respect for PP, here's how to use it. A normal dose of PP is 2ppm. You'll vary the number and interval of doses depending on the situation you're dealing with. To calculate the amount of PP needed, use the following formulas (these formulas are for a 2ppm dose and use US gallons for pond volume).

Ounces PP = Gallons / 3731 Grams PP = Gallons / 132

Applying PP: At the beginning of the day, apply a 2ppm dose of PP. Bypass your biofilter, get your aeration at maximum, and mix the needed amount of PP in a bucket of water. Distribute the PP all around the pond, do not pour it directly on any Koi. Watch your Koi especially during the first few minutes. If you see any signs of trouble, abort the treatment. Initially, the water should be purple from the PP. As the PP becomes expended doing its work, the water will change to a brown or orange tint. At this time, you can turn your biofilter back on. If you're just trying to keep bugs in check, a single dose is enough.

If you're fighting aeromonas, parasites, or other disease problems, you'll need to apply repeated doses. Keep giving once daily 2ppm doses until the water stays purple for 8 to 12 hours. Put a sample of water in a white cup to check the color. In a dirty pond, the PP will quickly be expended on dirt, algae, etc. and you may require several doses. You need to keep dosing until the PP stays around long enough to kill the tough bugs.

Stopping PP: You may need to stop the action of PP either because your Koi are not taking it well, or because its been active long enough and its time to restart the biofilter. To stop PP apply either dechlor or hydrogen peroxide. Use ½ cup of hydrogen peroxide (use 3% solution that's commonly available at drug stores) per 1000 gallons of water. Wait 30 minutes after applying hydrogen peroxide before re-starting your biofilter.

Using PP on wounds: You can use PP to sterilize wounds and ulcers (hole in the side). Put a pinch of PP in a container and add a couple drops of water. Use a q-tip to apply concentrated PP to wound. Only use concentrated PP once in the course of treatments - repeated application can erode away flesh tissue. Do not use PP around your Koi's eyes, nostrils, mouth, or gills.

PP vs Lymnozyme: A common question is - Which is best? They're different and here's how. PP is cheaper. PP has an unlimited shelf life. PP can kill your biofilter. PP can kill your Koi. PP can kill you. PP can kill algae, aeromonas, and most harmful bugs. PP works at any temperature. Lymnozyme creates an environment that won't grow aeromonas by eating all the fish waste that aeromonas needs to eat. Lymnozyme can clean out the aeromonas food in your biofilter without harming the good filter bacteria. Lymnozyme can be overdosed without ill effect.