



Southern Arizona Koi Association

Organized by those with the interest of raising and improving the quality of Nishiki Koi, and its culture. Promote better community and international relations for the better understanding of brotherhood among members through a common interest. To improve and promote the technology and education of Aquaculture

March 2022 Newsletter

PONDERING

Our Next SAKA Meeting:

The April meeting is still OPEN!

Let me know if you are interested in hosting the April meeting!

And subsequent gatherings:

20 May, Barb Mattes

17 June, Carollee Herndon

15 July, Potluck at Chappell Ranch

SAKA will reimburse a host up to \$50.00 for beverages and snacks served while holding a meeting.

Today we had a good turnout! There were 18 in attendance including some possible new members. It was nice to see such a large group! I received a couple of membership payments today, too. All good!

Bret's pond is in a seemingly perpetual state of upgrade, as he will tell you himself. But it is always a new beginning for the koi as the new pond develops. Hard to describe where it is at the moment, but it is getting there fast! His main pond is at the end of a couple of upper falls that are under construction. Like many ponds, the main pond will be without plants. They will have their place in the 2 upper sections and support the overall filtration. I am anxious to see the finished product! Bret said this was his 14th renovation!

Rob reported on the status with the parasites on his Koi. Over the past 3 weeks, he has seen marked improvement in the size of the ulcer by using potassium permanganate (PP) treatments of the water.

PP is a common, low cost, powdered chemical that can be used as a preventive during the Winter months. However, it is imperative that you proceed with caution and never over treat with the product. Hydrogen peroxide is the recommended counter treatment if it becomes necessary. I will attach a document that describes how to use PP. Also note that it is critical that you first know the true size of your pond in gallons.

Bret noted that the auction he wanted to organize is NOT going to happen in April or May. We all hope that we can have a Koi Show this year. It will require getting some of the key players back into the process.

Brenda is still having issues with a pond that seems to be perpetually green. Lots of discussion about the type of filtration and physical layout of the pond. She is using a bead filter which is the common solution for smaller ponds that are built on a relatively level surface. In this configuration, the filtering unit is pressurized. That is, the water is pulled out of the pond bottom and forced through the filter. A bead filter is also intended to handle more of micro-sized detritus that is produced in the pond. I think the consensus was that she needs a pre-filter that contains bottle brushes or matale-like material to capture the large particles and heavy algae before the water is next pushed through the bead filter and then back to the pond.

At any rate, this is what we are all about! Helping others with the hobby to maximize their enjoyment of the Koi!

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We need a host for the April meeting! If you are interested, please contact me right away! It is so nice to see everyone on a regular basis, again.

Financial report:

Checking: \$8565.54

Savings: \$5263.20

Total: \$13,828.74

It is time for renewing your membership, please. We are heavily dependent upon membership dues for income until we get our Koi Shows started back. So, please send in a check made out to "SAKA" to my address at Todd Paulus, 14235 E Placita Rancho Loma Alta, Vail, AZ 85641. Or you can use your credit/debit card to make the \$30 family membership on the website at sakoia.org.

Please take a moment to re-subscribe! Thank you!

Advertise here— 1) join our club with a Commercial membership or 2) offer 10% discount to our members or 3) be a vendor at the show

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Tucson, AZ

As promised, here is an article on some of the more common treatment protocols.

POND TREATMENTS (not for food fish)

Noel L. Shaw, KHA

November 2007

NOTE: Use the following treatments with caution and discretion. Do not allow the dust or fumes from these chemicals to get near your mouth, your eyes, or anything else that you want to live, such as your pets or children. They are generally safe for koi when used at the recommended dosage schedules. Avoid direct contact of fish with treatment chemicals.

Know your pond volume. Calculate volume with salt method (see "POND TREATMENT BASICS". Measure doses carefully. More is not better. These treatments WILL consume available oxygen. They may kill weak fish. They may disable a weak bioconverter (BC) / filter.

ALWAYS:

- disperse treatment chemicals as evenly as possible; pre-dissolve and add slowly to a return water stream.

- maximize aeration and circulation to the pond (waterfall, air stones, extra pump, etc.) during treatments.

- bypass BC / filtration where noted. Flush BC thoroughly to waste before start up if BC is off line for more than a few hours.

- be prepared in advance (with dechlorinator, etc.) to perform massive water changes after treatment as directed.

- Treatment efficiency is maximized in clean water: clean pond well with initial 30 - 50% water change (dechlor except with PP)

SALT / SODIUM CHLORIDE - INDICATION: soothes new fish, helps maintain osmotic balance, control string algae, reduce nitrite toxicity. MAY control SOME parasites and protozoa. SAFE FOR BC. CAUTION: Salt is a cheap old school remedy that many people indiscriminately throw at pond problems as a safe first line of defense. Salt has become increasingly less reliable. It is not effective against crustacea, and salt resistant strains of protozoans and flukes have developed. Nonetheless, it does have significant benefits in certain circumstances. BEST BET – Scrape and scope FIRST to diagnose for parasites – if you end up with other treatments anyway, you may need to water change down to .1% salt to avoid oxygen starvation.

EFFECTIVE DOSE: 1 ppt (.1%) helps with string algae, helps healthy koi maintain osmotic balance, is safe for almost all plants.

2 ppt (.2%) controls string algae, but may slightly brown the tips of pond plants. Eases osmotic balance in sick fish.

3 ppt (.3%) for two weeks clears some protozoans and flukes. Don't count on it. String algae becomes mush. Reduces nitrite toxicity.

6 ppt (.6%) for two weeks clears most protozoans and some flukes. PLANTS WILL DIE.

10 lb "SOLAR" salt per 1000 gallons yields a .12% (1.2 ppt) solution. 25 lbs of salt per 1000 gal yields .3% or 3ppt. Add over two days. In sudden fish mortality, add .3% all at once (but not directly

through filter or BC). Maintain .3% for two weeks, then allow salt levels to fall with regular water changes.

DIMILIN / TRICHLORFON / ORGANOPHOSPHATES (hereafter "TRICHLORFON") – INDICATION: Crustacea (anchor worms, fish lice), some flukes. SAFE FOR BC. TRICHLORFON is an organophosphate arthropod development inhibitor. TRICHLORFON stops the life cycle of Anchor Worm (Lerneae) and Fish Lice (Argulus) by inhibiting molting and growth. TRICHLORFON is toxic to unintentional chitin shelled invertebrate targets as well (crayfish, water fleas, dragonflies, etc.); do not let treated water run into rivers or creek beds. Use responsibly. Trichlorfon (and its analogs) are available in several formulations: Neguvon [Miles or Bayer]; Dipterrex [Bayer]; Masoten [Miles or Bayer]; Dylox [Bayer]

EFFECTIVE DOSAGE: .25ppm (point 25 ppm)

1 gram (1/2 teaspoon) per 1,000 gallons. Dissolve in some warm water, and sprinkle the suspension over the surface of the pond. For QT's and small ponds, dissolve 1 gram (1/2 tsp) in 100 cc water. Use 10 cc (2 tsp) of the suspension per 100 gallons, and discard the rest. Apply weekly for four weeks. Repeat at 30 day intervals for season-long control.

CHLORAMINE-T - INDICATION: Bacterial gill disease, bacterial infection, flukes. LETHAL TO BC FILTER BACTERIA.

EFFECTIVE DOSAGE: varies with the pH of the system. Normal dose is 15 ppm (about six tablespoons per 1000 gallons of water).

Dosage increases with pH; 20ppm (eight tablespoons per 1000 gallons) at a pH of 8.0 (most Tucson water). Repeat every other day for four treatments. 25-30% water change after 4 hours. Dechlorinate for entire pond volume after each treatment.

WHEN USING FORMALIN (ProForm C or Rid-Ich) OR POTASSIUM PERMANGANATE AGAINST PARASITE OR FUNGAL INFECTIONS, MULTIPLE TREATMENTS ARE REQUIRED, AT INTERVALS BASED ON THE TEMPERATURE-DEPENDENT LENGTH OF THE PARASITE LIFE CYCLE.

- < 60° F, repeat every 4th day for 4 total treatments.
- 60-65 ° F, repeat every third day for 4 total treatments.
- Above 65 ° F, repeat every other day for 4 total treatments.
- 25-30% water change after every other treatment

FORMALIN / MALACHITE GREEN (F/MG) – "PRO-FORM C" &/or "RID-ICH" INDICATION: Flukes, protozoa, fungi, some bacteria; disinfect new plants SAFE FOR BC AT 25ppm. Toxic to fish under 45°F.

EFFECTIVE DOSAGE RANGE: 15 - 25ppm

Proprietary formalin / malachite green products (Pro-Form C, Rid-Ich) recommend a dose rate of 10 ml per 100 gal that only yields 15 ppm of formalin. I adjust the manufacturer's dosage rate to achieve 25 ppm of formalin. Use a correction factor of 1.66 (25 ppm divided by 15 ppm) to yield 25 ppm with these products: 16.6 ml per 100 gallons. That is 166 ml (2/3 cup) per 1000 gallons of pond to achieve 25 ppm of formalin. (16.6 ml per 100 gal X 10 hundred gal). A 2000 gallon pond would dose at about 330 ml, or 1 1/3 cups of F/MG. 250 ml is about a cup.

DISINFECT NEW PLANTS - 125 ppm (5 ml (1 tsp) per 10 gallons) for 8 hours. NOT to be used for fish at this dosage, but used to disinfect plants.

POTASSIUM PERMANGANATE (PP, KMnO4) - INDICATION: Flukes, protozoa, fungi, bacterial infections. Have 3% drugstore hydrogen peroxide or sodium thiosulfate (chlorine neutralizer as well) on hand as an antidote. LETHAL TO BIOCONVERTER FILTER BACTERIA. You **MUST** bypass your BC to use permanganate at these dose levels. Potassium permanganate, a dark purple-grey granular powder, becomes vivid purple in water, stains skin dark brown for a couple of days, and clothing permanently. **EFFECTIVE DOSAGE:** 2.5 ppm to 4ppm.

1 tsp (6g) per 600 gal doses a pond at between 2.6 and 4 ppm (depending on your teaspoon – some hold 8g- both ends of the range are OK).

INSTRUCTIONS:

- 1) bypass BC (bioconverter), maintain full aeration and circulation
- 2) pre-dissolve permanganate crystals (1 gram of per 100 gallons of pond = 2.6 ppm ≈ 1 tsp per 600 gal) and disperse mix evenly around pond.
- 3) Goal is pink for 4 hours. If turns tan in less than two hours, add ½ more of 1st dose quantity. May repeat this additional ½ dose a second time if necessary, for a total of double the initial dose. When pond water viewed in a white cup appears tan, NOT pink, resume BC filtration. Always restart BC with a flush to waste.

• IF WATER TURNS TO "CHOCOLATE MILK", FISH ARE GASPING, OR ACCIDENTALLY OVERDOSED, IMMEDIATELY ADD 16 oz OF HYDROGEN PEROXIDE (drugstore variety) PER 1000 GAL TO NEUTRALIZE THE PERMANGANATE, THEN PERFORM A 30-50% WATER CHANGE.

Time to “tan water” becomes longer with each treatment. After 4th treatment, neutralize residual Permanganate with Peroxide, 1 cup per 1000 gallons.

Questions? Comments? koidoc@noelshawdc.com

SPECIAL THANKS TO: ERIC JOHNSON, DVM (koivet.com) SANDRA YOSHA, DVM; NICK ST ERNE, DVM; AKCA Koi Health Advisor Program

LOCAL RESOURCES: Rancho Del Koi – 886-8797; Desert Pet Center – 745-5158; Mountain View Koi – Sierra Vista – 520 378-3710

[We talked about using Potassium Permanganate today, and it was mentioned several times that it is critical to know the real size of your pond in gallons. You can use salt treatments to actually make that measurement. Here is an article that explains how.]

Pond Water Volume

Every pond owner needs to know their total pond volume in order to properly add the right amount of pond water additives to accomplish the desired results without harming the koi. For instance, an algaecide label states to add six ounces of algaecide per 1000 gallons of pond water. Do you know how many ounces to add? If you know your pond volume, it is just a matter of math. If you do not know the volume, it is a guess. Sometimes guesses can be deadly.

There is an easy and very accurate way to determine your pond volume without calculating measurements or draining and refilling your pond. This method is called the “Salt Method”. This method is very simple; however it requires the use of an accurate salt concentration meter graduated in percent (%) salinity.

DETERMINING POND WATER VOLUME USING SALT

- Check the pond water salt content (starting percent salinity) with the salinity meter.
- Add a known pounds of salt.

After the salt is dissolved and evenly disbursed, take a final salt concentration reading (ending percent salinity).

Formula:

(pounds of salt) x 12 ÷ Change in % salinity = gallons

Pounds salt added times 12 divided by (ending % salinity minus starting % salinity) equals gallons pond water including the entire system.

Example:

A pond was initially checked and found to have a salinity of 0.10 percent.

40 pounds of crystal salt was added (dissolved and disbursed thoroughly)

A final check showed salinity of 0.23 percent. Using the formula:

(pounds of salt) x 12 ÷ Change in % salinity = gallons

(40 pounds salt) X 12 = 480 = 3692 gallons

(0.23 - 0.10) 0.13

Notes:

Use only crystallized salt with no additives (water softener crystal salt)

A salinity meter is available from KHA members of your pond club.

Calculating pond water volume by the salt method can be vastly effected by a large leak in the pond during the dissolving and disbursing period of this process. A major leak will reduce salinity and cause erroneous results.

The salt formula is further broken down to find the following unknowns:

Pond Volume (Gallons) = (pounds salt added X 12) divided by Change in percent Salinity

Change in percent Salinity = (Pounds salt added X 12) divided by Pond Volume (gallons)

Pounds salt to add = Gallons X (desired percent change in salinity) divided by 12

In order to get accurate checks of salinity, it is necessary to use a salinity meter graduated in percent salinity.

Don Harrawood KHA Southwest Koi and Pond Association