



President Corner

A BIG THANKS, to the Lee's for having the gang over to enjoy their wonderful pond and generous hospitality. Isn't our Koi Club Wonderful? Where else could you meet such a wonderful bunch of People?

Just a quick reminder: your **Dues for 2005** are due March 1st . 2005. Don't forget to send them in, or bring them to our meetings. Thanks.

The Koi Club of San Diego Show is right around the corner. If you can make it just take a quick trip west, and your there. This year should be fun.

One of these days, your water will start warming up. Think so? Hope so. Please check the chemical balance of your water. There are test kits you can buy. Every pond owner should have one. You should know the quality of your water. This will help in knowing how your Koi are. Check your water often.

If anyone would like to hold office in our club contact the election committee (Tom Ayers, Faye & Winton Hall). The more the merrier.

Steve Trepning (520-296-6765) is look for a few good homes for his koi, if you know of any please call him. See you Sunday.

For the love of Koi,

Bob Panter

Bob Panter
President SAKA



Winners



Mature Champion
Brain & Robbie McCleney



Male Champion
Brain & Robbie McCleney



AKCA Award
Tom Ayers



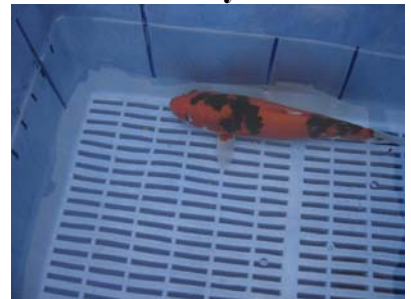
Judge's Choice
Tom Ayers



Best in Size 3
Brian & Robbie McCleney



Best Kohahu
Tom Ayers



Best Sanke
Noel & Debbie Shaw



Best Utusuri
Tom Ayers



**Best Hikari Other
Tom Ayers**



**Best Gin Rin A
Noel & Debbie Shaw**



**Best Tancho
Brian & Robbie McClency**



**Best Long Fin
Brian & Robbie McClency**

**Over All Point
Champion**

**1st place
Noel & Debbie Shaw**

**2nd Place
Tom Ayers**

**3rd Place
Brian & Robbie McClency**

SPRING POND TIPS

by Ray Jordan

It is hard to believe that spring is almost here. Soon our pond's water temperature will be staying above 60 and our fish will become more active. Let's all hope that the mild winter will help our fishy friends have a happy and healthy 2000. Here are some suggestions that will hopefully help you get your pond off to a trouble free start this spring:

1. **Start with a clean pond:** Remove leaves and any sludge that might have accumulated this winter. **Never** stir up the muck in your pond with fish still in the same water. Use a holding tank. It is especially import to remove any acorns that might have fallen into your pond, as they can be toxic in large quantities. After cleaning if possible cover your pond with netting to prevent our native live oak trees spring leaf drop from adding more junk back into your pond.
2. **Continue to do regular water testing and water changes:** Remember your ponds biological filtration will lag behind your feeding schedule. Also ammonia-fixing bacteria develop faster than the nitrite-fixing bacteria. Test your water for both ammonia and nitrites. Make water changes as often as necessary to keep tests within normal levels. It is better to feed smaller amounts of food several times a day than one large feeding.
3. **Watch your pond water temperature.** You can increase the number and amount of fish feedings as the water temperature rises. A suggestion would be to increase the amount of food very slowly watching your water testing and feed small amounts several times a day until the temperature stays above 75 degrees. Try to feed between 9:00am & 5:00pm so the fish have a better chance to

digest the food before the pond temperature drops at night. If there is a significant cold front that greatly lowers the water temperature reduce or stop your feeding temporarily.

4. **You should be feeding a lower protein food such as wheat germ:** It is also a very good idea to add extra Vitamin C to your fish food. Buy Vitamin C powder at a health food store and dissolve a teaspoon in a small amount of warm water for every one to two pounds of food. Stir into food until absorbed spread out on something until dry then keep in a cool dry airtight container.
5. **Watch your fish carefully:** for any that do not swim or eat with the other fish or start flashing (Rub themselves against the sides of the pond). On very cold days they will be very slow or inactive but they should act similar. Watch for cuts or sores that might develop. These will not heal well in water below 75 degrees and when we get a few days of warmer temperatures the bad bugs can wake up and cause big problems. You should disinfect any significant scratches with iodine or mercurochrome. If your fish start flashing excessively find out what is happening and treat it. If high ammonia or nitrites do a water change and reduce or stop feeding. If parasites are the problem use appropriate treatment. Use a microscope to identify exactly what you are dealing with and also to confirm after treatment that the nasty's have been eradicated.
6. **Move sick or injured fish to heated/salted hospital tank:** Remember a fishes immune system is temperature dependent. After they recover you can put them back in the pond.
7. **Salt Treatment:** I highly recommend a salt treatment for your fish/pond each spring. Especially, if you had any

problems with ulcers or fin rot the previous year. You will have to remove any plants to a separate container for 3-4 weeks. Add 5 lbs. of **non-iodized** salt per 100 gallons of water. Split the treatment into three parts and add over three days. For example if you had a 1,000 gallon pond you would need to add 50# of salt. You would add it at a rate of approximately 16-17# per day for three days. You would maintain this salt concentration for two weeks, which means you, would need to add, salt with every water change. For example if you did a 100-gallon water change you would need to add back 5# of salt. Do not put this salty water on your garden or yard if it has been very dry unless you dilute it with additional tap water. After the two weeks you can increase your water changes to 20-30% per day. After one to two more weeks the level of salt will be almost nothing and you can reintroduce your plants. Total time from start to finish is 3-4 weeks. It is best to do this right now as salt slows down the maturing of your biological filter and if you start feeding a lot you will need to do bigger water changes and replace more salt.

Read and learn more about how to care for the special needs of your pond during the spring season. The club library is a great place to start. The more effective you are in minimizing the problems that can occur with the spring warm up the fewer problems you will have the rest of the year. Good Luck and Happy Pondering!!

SALT, The Koi Wonder Drug?

(and How To Measure How Much You Have)
by Norm Meck
reprinted from [Koi USA](#)

Common Salt, Sodium Chloride, NaCl, has been termed "The Koi Wonder Drug". A misnomer perhaps, but salt is a proven staple in the health

care and maintenance of Koi worldwide. Koi maintain an internal concentration of salt in their body fluids higher than that of their liquid environment. Osmosis causes water to transfer from the lower salinity of the pond water into the tissues of the fish. This additional water build up must be eliminated by the kidneys. Although salt in higher concentrations may slow some disease causing bacterial growth in the pond, the predominantly accepted theories ascribe the primary benefits of salt to lowering the osmotic pressure. This reduces the effort the fish must expend in eliminating the excess water. The saved energy is then available for use by the fish's own immune system to take care of other potential problems. The presence of salt also helps counteract any nitrite toxicity. In some cold climate areas, it is added in the winter to lower the freezing point of the water.

Salt can cause pond plant damage as the concentration increases. Floating plants, (water hyacinth, water lettuce, etc.) are affected at lower concentrations than most bog plants. Related, salt may provide some partial control of algae in the higher concentrations.

The amount of salt dissolved in water is measured either as a percent, in parts-per-thousand (ppt), or in parts-per-million (ppm) (where 10 ppt = 1% = 10000 ppm). The more common parts-per-thousand measurement is the weight of the salt in pounds per thousand pounds of water (about 125 gallons). Pond-keepers often talk about the pounds of salt per hundred gallons of water. Since 100 gallons of pure water weighs about 800 pounds, one pound of salt per hundred gallons equates to a salinity of 1.25 ppt (0.125% or 1250 ppm). (1 ppt = 0.8 pounds per hundred gallons) [Note: Koi internal fluid salinity is on the order of 15 ppt (about the same as ours) Sea water is around 35 ppt to 70 ppt depending upon geographical location. The Great Salt Lake has a nominal concentration of about 250 ppt.

There is some disagreement about salt in Koi ponds. Our San Diego tap water often has a salinity of up to 0.5

ppt. This amount cannot be tasted but we drink it and we put it into our ponds. If our Koi were put into an absolutely pure (distilled) water environment, the osmotic pressure would be so high that some would be unable to eliminate the excess water and would die almost as if by drowning. On the other hand, if the salinity approaches that of the internal tissues of the fish, the osmosis process will decrease or even reverse. This can cause the fish to die, essentially of dehydration. Any discussions should therefore center not on should salt be in the pond but how much.

The addition of one to two pounds of salt per hundred gallons of water (1.25-2.5 ppt) is recommended for most ponds, especially in the spring and fall. This is a fairly conservative dosage but without having a reasonable quantitative measurement method, higher concentrations should be avoided. If nitrites are present, using three to four pounds per hundred gallons (3.75 to 5 ppt) is appropriate to reduce the nitrite toxicity. After the initial application, the dosage applies ONLY to the amount of water being taken out and replaced, NOT to the amount of water in the entire pond and NOT to water being added to replace that lost by evaporation. Except the very short-term medicinal baths at concentrations often around 25 ppt (1 pound per 5 gallons), and administered under tightly controlled conditions, it is not recommended that Koi be subjected to a salinity exceeding 5 ppt (4 pounds per hundred gallons), especially for extended periods.

The salinity is normally maintained by the addition of salt to increase it and by water change outs to decrease it. Introduce the salt. If possible, at the discharge side of the bio-filter (not at the bio-filter inlet nor directly into the pond). If the addition must be made directly into the pond, dissolve the salt in a bucket of pond water and distribute it evenly around the edges of the pond. Inquisitive Koi will check if any new addition to the pond might be something to eat. Although they will probably not swallow the pieces of salt, direct contact of crystalline salt with the fish for more than a few

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seconds can cause injuries similar to burns. When making the initial or any large application, it is probably better to divide it into two to four daily partial additions rather than putting it in all at once.

(Note: Inexpensive and pure solar dried or kiln-dried salt used in home water softeners is available at most supermarkets. Do not use palletized water softener salt that has binding agents or any type of iodized salt.

I obviously am one of those who believe in adding salt to my Koi ponds. I am also one of those who do not like adding anything to the water unless I know what is already there. A pond-keeper can keep records of salt added, water removed, and water added. But, after a few water change outs, rainstorms, and other water additions, the resulting salinity is somewhere between questionable and unknown. For some time, I have been trying to find a way to measure the amount of salt in my ponds. A chemical laboratory can supply a quantitative analysis, but this is both expensive and not very timely. Other than very expensive reflect meters, the commercial salinity test kits and other devices, available seem to measure in only two ranges. The first is around 0-50 ppt, used for salt water systems and the second is around 0-100 ppm used for fresh water applications. Neither of these will provide the accuracy needed over the range of interest. I would like to maintain a concentration in the range from 2.0 to 4.0 ppt (I actually use a target of three ppt or 2.4 pounds of salt per hundred gallons). In cooperation with the LaMotte Co., a leader in aquaculture testing products..., a modified procedure was developed for use with one of their salinity test kits to provide a fast, inexpensive, and highly accurate measurement over the desired range. The "off-the-shelf" kit was designed to measure 0-20 ppt in 0.4 ppt increments. Substituting the modified test procedure provided below for the standard procedure, the range is changed to 0-5 ppt in 0.1 ppt increments. The titrator supplied with the kit reads 0-20 and the result is divided by four. An optional titrator, calibrated 0-50, can be purchased and the result divided by ten, which is a little easier. It probably makes little difference to the fish, but I feel better that I can now make an accurate salinity reading.

As an example of the accuracy of this test and as a secondary use of the test kit, a pond was found to have a 0.5 ppt salinity measurement. It was desired to bring the level to 2.5 ppt, an increase of 2 ppt. As the owner thought the pond contained about 3100 gallons, 50 pounds of salt was

added (3100 divided by 125 times 2). The next day, the salinity actually measured 3.1 ppt, or an increase of 2.6 ppt. Working backwards, this showed that the pond actually contained only 2400 gallons (50 times 125 divided by 2.6). A later unfortunate incident required the pond to be drained. When it was refilled through a water meter, it was determined that the pond actually held just under 2500 gallons. The pond owner had been excessively medicating and chemically treating the pond by almost 25%! It has been found that the salinity test kit can be used to determine the amount of water in a pond with an accuracy of about 5%.

If you purchase the test kit for use in the 0-5 ppt range. Use the following test procedure, (see insert) not the one included in the kit.

The salinity test kit (Part No. 7459; about \$35 for 50 tests), the refill kit (Part No. R7459; about \$15 for 50 tests), and the optional 0-50 direct reading titrator (Part No. 0380; about \$5), are available directly from LaMotte or, at an equal or slightly lower cost, from one of their distributors listed below (or others). Prices do not include shipping, and are, of course, subject to change. All will accept major credit cards.

- LaMotte Company
P0 Box 329
Chestertown, MD. 21620
(800) 344-3100
- AquaCenter Inc.
166 Seven Oaks Road
Leland, MS. 38756
(800) 748-8921
- Aquatic Eco-Systems, Inc.
1767 Benbow Court
Apopkav, FL. 32703
(800) 422-3939

Modified Test Procedure for LaMotte Salinity Test Kit Model 7459

1. Rinse and fill the titration tube to the 10 ml line with demineralized water from the demineralizer bottle.
2. Rinse and fill the 1.0 ml Direct Reading Titrator to the zero mark with the water to be tested. Wipe any excess water off the Titrator.
3. Dispense the entire 1.0 ml of sample water into the titration tube. 4. Repeat steps 2 and 3 to add a second 1.0 ml of sample water into the titration tube.
5. Add 3 drops of Salinity indicator Reagent A to the titration tube. Cap and gently swirl to mix. A light yellow color will develop.
6. Fill the 0-20 (or optional 0-50) Direct Reading Titrator to the zero mark with

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Salinity Titration Reagent B. Insert Titrator in the hole of the cap of the titration tube.

7. While gently swirling the tube, slowly depress the plunger until the yellow color changes to pink-brown. 8. Read the test result where the plunger tip meets the scale on the calibrated titrator.

9. If using the 0-20 titrator supplied with the kit, divide the reading by four (i.e. if the titrator reading was 9.2, the result is 2.3 ppt). If using the optional 0-50 titrator, divide the reading by ten (i.e. if the titrator reading was 23, the result is 2.3 ppt).

(Note: The demineralizer bottle can be refilled with tap water or even pond water but the demineralizing resin bed will last longer if distilled water is used.

Locating Leaks

The one hardest thing for us to do is locate a leak. It's not profitable for us and can be very expensive to the homeowner if we try to find them to repair them so we've adopted the policy of simply not offering leak-locating services.

Most times the homeowner, because he sees his pond everyday, has the best idea of where the leak is occurring. Once the leak is found the liner can either be patched or a new liner installed.

A little leak is one that goes down less than an inch a day and may not be worth repairing. In fact, a slow leak can simply keep the plants watered around the pond. A more serious leak, however, can mean tragedy if the pond leaks dry and cannot be ignored for long.

Here are some tips to help locate a leak:

Make Sure You Are Truly Leaking

It could be splash from an over-zealous pumping system. Is the water splashing out of the waterfall area? Turn down the flow and see if your "leaking" stops.

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Isolate and Rule Out

Most leaks occur in the waterfall or streambed. Reroute the water if you can so that it bypasses the waterfall. Note the water level. Let the pump run all night then notice if you've lost any water. If you haven't, you know the leak is in the waterfall. If you can't bypass the waterfall turn off the pump. If it doesn't leak you will know that it's either in the plumbing, pump or waterfall.

Clear the Streambed

Tree limbs and accumulated fallen leaves will back up a waterfall or streambed and cause water to rise and leak out from the edge of the liner.

Look for a Wet Spot

Water leaves a tell-tell sign. Inspect all ground around the perimeter of the pond, including waterfall areas. Don't be fooled by what looks like water seeping from the lowest part of the pond. Water seeks the lowest levels and run underneath the liner until it reaches the "bottom of the hill".

Look for Fallen Objects

Did a jagged rock fall in the pond recently? Before you move it check underneath to see if it punctured the liner. If you notice where a dog jumped in to retrieve a ball you might be able to locate a small toenail tear that is easily fixed with a patch.

Check All Hoses and Fittings

Follow the path the water takes through your system. It may be as simple as a loose fitting!

Triple-Check Any Seams

If you seamed two pieces together (we discourage this practice) check that seam! Ninety-nine point nine percent of the time it will be there.

We know how frustrating a leak can be. Normally, if the leak can be located and if it's small enough it can be fixed with a patch. Even if you isolate and know that the leak is in, let's say, the bottom pool part of the pond, unless you know exactly where the tear of hole is located you cannot place a patch. In that circumstance, the only way we know to stop the leak is to replace the liner.

From The Water Garden Edition of *What's Up, Doc?*, July 2000
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Kawarigo Konomi

UP COMING EVENTS

February 20, 2005

Bob & Darleen Panter



March 5-6, 2005

Koi Club of San Diego Koi Show

March 13, 2005

Warren Essig

April 24, 2005

Constance Richardson

May 7 & 8, 2005

Annual Pond Tour

May 22, 2005

Faye & Winton Hall

February 2005

June 17, 2005

Simon & Millie Burgheimer



June 23 -26, 2005

24th Annual AKCA Seminar

Tulsa Oklahoma

July 24, 2005

Mountain View Koi Fish &

Aquatic Plants

August 28, 2005

Dennis & Kathy Leonard

September 25, 2005

Noel & Debbie Shaw

October 23, 2005

Ken & Mary Struck



November 11-13, 2005

SAKA 26th Koi Show & Auction

December 2005

Tom Ayers

26th Annual AKCA Seminar

Arizona

June 2007

Hosted by SAKA & VSKC

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Tucson, AZ
792-2244 or
1 (800) 844-2244

Mountain View Koi Fish & Aquatic Plants

3828 Keeling Road,
Herford, AZ
378-3710

Rancho del Koi

3400 S. Sagauo Shadows Drive
Tucson, AZ
886-8797



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Annual Membership
Dues are \$25.00 per family from
March 1 to February 28 or 29 of the next
year. If paid after August 1 \$17.50,
September 1 \$15.00, October \$12.50,
November \$10.00, December \$7.50.

Membership Type

_____ Renewal
_____ New Member

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Phone #: _____

E-mail _____

Today's Date: _____

of Koi _____

Years Keeping Koi: _____

Pond size: _____

Would you like to host a meeting?

Would you like to serve on a
committee?

_____ If yes which one?

Make Checks payable to: SAKA

Mail to: Faye & Winton Hall
6775 North Los Arboles Circle
Tucson, AZ 85704-4110