



President Corner

Happy New Year everyone. I hope all of you had a good one. Darleen and I spent Christmas and New Years in Ft. Campbell, Kentucky, with our son, Stephen. He is part of the 101st. Air Borne. We had such a wonderful time. Now we are glad to be home. Back to the old grind. O.K. enough of that.

Is the weather getting warmer? Welllll maybe just a little. Do not let that fool you. There are still plenty of cold days ahead. Still you should be checking your water. Making sure the chemical balance is as good as it should be. Remember a healthy pond is not just a clear pond.

Big thanks to Sharon Falk, and family, for hosting our Christmas party. A great time was had by all, and all the food was so good. Thanks again.

Coming up in February is the Phoenix Koi Show. Hope all of you can make it. Everyone has a lot of fun. Also coming up is our pond tour. Has your pond ever been on the tour?

Would you like to be on the tour? If so come to our next meeting and talk to Debbie Shaw. We would love to see your pond. See you all soon.

For the love of Koi,

Bob Panter

Bob Panter
President SAKA

SPRINGTIME POND PREP

By Noel L. Shaw
January 2005

In the spring, pond temps are up and down, going from the 50's to the 60's and back. The bioconverter bacteria and fish immune systems are still not up to speed. Many unprepared ponds will suffer from outbreaks of parasites, Aeromonas infections (Koi ulcer disease), pea green water, and string algae. Some helpful hints to ward off some of these springtime blues: (HINT – start a month earlier than you would normally think about it - while water is still under 50-55° F. Early / mid February?)

A) Clean up the pond, plants, and filters. Vacuum or remove debris on bottom of pond, without stirring up too much sediment into the water. Cut back dead vegetation. Repot plants in spring in clean coarse sand. Clean sediment from bogs. Drain and clean sumps and pre-filter chambers (if not already done regularly). After removing all the big chunks from system, then clean bioconverter (BC) media (with pond water if possible). When you are done with the gunky stuff, do a 50% water change, adding dechlorinator (sodium thiosulfate is cheap and avoids chlorine burns on Koi gills).

B) To reduce background levels of harmful critters (bacteria, fungi, protozoa, flukes, fish lice, anchor worms, etc.) and help prevent springtime illnesses and infections, try this regimen after you have your pond “visually clean” as in “A”:

1) SALT used to be recommended for protozoa and some flukes. There are now so many salt-resistant parasites that its effectiveness as anything other than an osmotic tonic is questionable. However, if you wish, add pure coarse solar salt (sodium chloride) to a full .3 (point three) % (three parts per thousand – about **2.5** (two point five) lbs. per 100 gallons) and maintain for two full weeks. Add gradually over a three-day period to avoid shocking the BC. Place the salt (in a fine mesh container – nylon stocking? - or let a hose with pond water bubble up through the salt in a bucket) in an area of high water flow where circulation will carry it throughout the pond. **DO NOT** dump loose salt crystals in the pond. After two weeks **at a full .3%**, restore desired level of ongoing salinity with gradual water changes.

If you have plants or bogs, check the plant / salt chart at www.koivet.com. Dropping the salt to .2 (point two)% (1.66 lbs per 100 gal), doesn't kill as many plants, but appears to have even less effectiveness against parasites. Expensive or specialized plants, submerged vegetation, and plants with free floating roots like even less salt - about .1 (point one)%. Bottom line - want to save your plants? Remove them from the pond or don't go past .1% salt.

2) “TRICHLORFON” (fish lice, anchor worms, mosquitoes) A relatively safe (for fish) organophosphate, Trichlorfon (sometimes generically called “Dimilin”) should be dosed at the rate of .3 (point three) ppm. This equals one gram or about ½ teaspoon per 1000 gallons. Dose monthly year round.

3A) POTASSIUM PERMANGANATE (PP) (for salt resistant protozoa, flukes, fungi, and some bacteria). A four part permanganate or formalin series will really help reduce the numbers of all of the above-mentioned critters. PP has the added benefit of reducing DOC's (dissolved organic compounds), and will leave you with a cleaner, healthier pond. PP lowers oxygen. Maintain high water circulation levels. At these doses, PP kills many beneficial bioconverter bacteria. BYPASS BIOCONVERTER or bead filter (safe off line for 4-6 hours in cool weather; always flush BC to waste before re-starting).

Dosage regimen: PP: A teaspoon measure (they vary) holds between 6 and 8 grams of PP crystals, which, at one teaspoon per 600 gallons, yields a safe dose between 2.6 to 4 ppm. **DO NOT** dump crystals in the pond all in one spot (DUH!). Dissolve crystals in a couple of quarts of hot water, and circulate around pond. Water will appear purplish. After several hours, water will turn lighter pink, then tan. When a white coffee cup of pond water no longer appears pink at all, neutralize the PP with one pint of 3% drugstore hydrogen peroxide per 1000 gallons, and resume flow to the BC. Repeat on days four, eight, and twelve. Perform 30-50% water change after treatments two and four.

NOTE: Potassium permanganate can be dangerous. Do the first few treatments on a day when you can check on the fish periodically. If, at any point, water turns an ugly milk chocolate color (usually means a **WHOLE LOT** of organics are in your water), immediately reverse with peroxide, and do a 50% water change with dechlorinator.

or 3B) FORMALIN Dosage regimen:

Dose with straight Formalin (37% formaldehyde in water) or a proprietary like "Pro-Form C" or "Para-Cide" (much easier to get). The effective dose is 25 ppm. The label dose of Pro-Form C (100 ml per 1000 gallons) only achieves 15ppm. I suggest 1.6 times the label dose, or 160 ml per 1000 gallons, to achieve 25ppm. Formalin will lower oxygen. Maintain high water circulation levels. At these doses, Formalin is OK for BC bacteria, with no need to bypass. Repeat on days four, eight, and twelve. Perform 30-50% water change after treatments two and four.

RESOURCES: Potassium permanganate, sodium thiosulfate, and salt test kits are available from Rancho del Koi (east side - 886-8797) or Pond Plants and More (west side - 292-6774). Sodium chloride is available from your grocery store (granulated rock salt) – make sure you get PURE sodium chloride with no additives, NOT potassium chloride. ProForm C is also available at a number of online vendors.

Email author: capnkrunch@qwest.net for questions, treatment calculations, conversion charts, salt/plant chart, and other dosage / treatment protocols.

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

Why Is My Water Green? And What Can I Do About It?

By John Tinius
reprinted from Koi USA

One of the most frequent problems with our ponds is green water. As everyone knows, green water is the result of algae growth; this article will look at some of the basics about algae and how to eliminate them.

WHAT IS ALGAE?

Algae is one of many plants belonging to the subdivision thallophytes found in both salt and fresh water. Algae comes in many forms including both free-floating and anchored, or attached. Algae comes in many colors including green, brown, blue, and red. Algae is carried through the air by spores and may locate in any body of water.

ALGAE NEEDS

Algae has several basic needs. Understanding them and how to eliminate

them are the key to having clean, clear water.

- A. FOOD: Algae feeds primarily on nitrates and phosphates in water.
- B. LIGHT: Algae needs light to grow and reproduce.
- C. TEMPERATURE: Algae growth is faster in warmer water and slows as temperature decreases.
- D. WATER QUALITY: There are many varieties of algae that exist under a large range of conditions. However, any water that is of such poor quality that it will not support algae growth will also not support fish life.

ALGAE CONTROLS - SOLUTIONS

The three basic ways to rid your pond of algae are:

- A. ELIMINATE FOOD
- B. ELIMINATE LIGHT,
- C. KILL ALGAE.

Algae can be eliminated by removing either food or light. It is not necessary to remove both. To understand how to literally starve out algae we need to go to the basics of biological filtration and how algae food is produced. Bio-filters consist basically of a bed or strata on which bacteria grow. That's it. Don't let a lot of complicated systems or designs confuse you. That's what is really happening inside. Fish produce ammonia as a waste product. In the presence of an oxygen-rich environment, aerobic nitrosomonas bacteria break ammonia down to nitrites. Nitrobacter bacteria break nitrites into nitrates. Nitrates are algae food. Through a similar process, phosphates are also produced. Phosphates are also algae food. By keeping nitrates and phosphates at low enough levels, algae will starve. A good bio-filter keeps these algae foods under control. I know even a pond with a well-functioning bio-filter may go through bouts of green water. This is mainly caused by phosphates reaching levels where algae life can be supported. A healthy bio-filter will react by increasing bacteria that can consume phosphates and, in time, will clear itself, if the system is not overloaded. A regular program of 10% water changes each week helps keep nitrate and phosphate levels under control. However, filter size, fish load and the amount of fish food used all play a part in how well a

system works. To summarize, a healthy, well maintained bio-filter that is large enough for the size of the pond, will go a long way toward keeping water clear. However, filters are slow to react, and changes in fish load or food load can cause filters to become out of balance causing levels of nitrates and phosphates to rise to the point where algae can grow. Regular water changes help keep nitrate and phosphate levels in check. Algae also needs light to survive. By shading a pond, algae will not survive. This may be done in several ways. Water plants that have foliage on the surface will work, however it will take 50% to 75%, shading to achieve this. If watching fish is your main goal this may not be the answer. Plants also help control algae because they are a direct competitor for the same food as algae. Some systems have filters that return into a "plant" pond before returning to the main pond. This may be an option. Another method is to construct a physical structure to cover the pond. Shading may also improve the colors of your fish by preventing sun fading. Shading by placing dyes in the water may work to eliminate algae but generally leave the water an unnatural color and may be harmful to fish. Even though algae may not be growing in your pond due to shade, don't forget that high levels of nitrates, etc. may still be present in your water. Regular water changes are important, even if there is no algae bloom. Yet another way to deal with the algae problem is to just let it grow and then kill it. This can be accomplished in two ways. One is by the use of algacides, algae-killing chemicals in the water. While this may be a solution there are several problems with algacides. They may not be safe for fish and those that are may not be safe for Koi. Also, algacides are really just a temporary answer and don't really solve the problem. The other way to kill algae is by the use of an ultraviolet sterilizer light. These work by killing algae as they pass by the light, and are hooked to the filter system as the last stage. U.V. lights are a good permanent solution and also kill a lot of bacteria and parasites. However, they will have no effect on anchored or attached algae. They only kill what can pass in front of the light. Temperature is a major variable in the growth of algae. While algae growth slows as the temperature drops, the activity of the bio-filter also slows down, which reduces its ability to handle waste material. At the same time, fish still eat and produce waste even in water temperatures in the fifties. These are times when water chemistry can get out of balance and produce algae blooms and other problems.

In nature, algae plays an important part in the water environment. It helps shade the fish from the sun and is a part of the natural food chain. Where clear water exists in nature it is due to plants shading the water and competing for food or spring fed waters-water changes! While algae may not be desirable in our ponds, it is a natural part of the water environment and to control it we must understand how it grows and what it needs.

FINAL NOTE

Algae produces oxygen during the daylight hours but reverses the process and consumes oxygen at night, thus reducing the oxygen level in the water. Fish found gasping early in the morning are a sign of the problem.

Baytril Dosing -

by Dr Erik Johnson

Baytril: (Enrofloxacin) Injectable from Bayer Labs, is a 2.27% solution. I give @ 0.1 cc per 6 inches of fish, daily for three injections, then EOD for 2 more injections. Total injections, a maximum of 5.

Recommended dose, (I. ictaluri) is 14mg per kg.

I give the drug Intraperitoneally, with a 25 G needle on a tuberculin syringe.

Fish Length in inches	Volume Baytril in ml.
6 inch	0.1 ml
10 inch	0.3 ml
14 inch	0.6 ml
18 inch	0.9 ml
22 inch	1.0 ml
26 inch	1.25 - 1.50 ml
30	1.75 ml
34	2.0 ml

Be careful injecting gravid (egg laden) females. The antibiotics will simply go into the egg mass and will not get diffusion throughout the body where needed! Better in those to inject IM (Intra Muscularly)



Top 20 Frequently Asked Questions

by Dr. Erik Johnson,
Ashland VA Aug 10-11 2003

Half of the questions are about a fish symptom.

The other half occur through several categories.

Hundreds of questions are asked every day.

#20 Does ___ Kill Frogs and Snails?

Dimilin does not.

Formalin kills snails and tadpoles, not frogs.

Potassium kills snails, some tadpoles, not frogs.

Salt can kills some snails, others survive.

Tadpoles and frogs survive.

#19 Should a Pond Have Gravel on the Bottom?

Hell no.

Accumulation of detritus, solid wastes, causes proliferation of hazardous bacteria. Production of noxious gases like hydrogen sulfide and methane.

#18 How Can You Tell Boy From Girl Koi?

Males have breeding tubercles on their gill covers and pectoral fins in springtime, even in pre-mature males.

Females are perfectly smooth on the pecs.

Females are rounder in conformation viewed from the top. Males are streamlined even when heavily fed.

#17 How Do You Measure Salt Levels?

There are three ways. You can drill out a SeaTest hydrometer. It's hard.

You can run a salt level test, they're cheap and effective and accurate.

You can use an electronic salinity meter. Easiest.

#16 What Kind of Pump Should I Use?

Submersible pumps are easy to install.

They run well and they can move up to 3900 gph.

External pumps are longer lasting and can be more energy efficient. Parts are available for external pumps. Shock hazards are reduced. They don't clog up because of the leaf trap, which is easy to clean.

Wisdom of the pump sock. (Defeats pump).

#15 What Should I Do About Herons?

Heron decoys usually don't work and may attract other herons.

Gator head works.

Scarecrow works.

Netting works well.

Trip lines don't work.

#14 Do Frogs and Birds Carry Fish Parasites?

No, it's the LEAST likely mode of transmission.

Can it happen? Yes.

Does it happen, rarely?

Parasite must resist drying or be abundant to be carried in water droplet.

NOT in stools or urine.

#13 Can Koi and Goldfish Breed?

Heck yeah.

But goldfish will not allow any Koi fry to live.

Koi WILL allow goldfish eggs and fry to survive.

What kind of babies do you end up with in Koi x goldfish polyculture? Just goldfish.

#12 Why Didn't Bug-b-gone Work?

Usually, it's because it may be a poor dose, or not strong enough.

Just as often, the person is treating a crashed ph (untested) with parasite remedy.

Sometimes the medicine is defeated by UV, carbon, filtration, and organics.

#11 My Goldfish and Koi Are Chasing Each Other

Usually they are spawning.

If water quality is good, the fish will heal. If it's not they will ulcerate.

If the female is outnumbered, she could die.

Pond should not have sharp rocks at edge!

#10 Red Worms in the Filter!

Tubifex or bloodworms.

Carry no pathogens for Koi.

Carry myxobolus for salmonids!

Eaten on sight, which is why they only exist in filter.

What if we applied copper?

#9 Food & Storage, What's Right?

Best food has fish or shrimp meal as first ingredient

Less corn and less plant protein is better.

Avoid ingredient splitting.

Look for stabilized vitamin C

Refrigerate, do NOT freeze the food.

#8 What's the Best Way to Prepare for Winter?

Make sure the waterfall is off at night and when temps are dropping

Never put fish to "bed" with leaves and solids on pond bottom

Salt at end of year.

Do not disturb bottom-most level of water

Keep a hole in the ice with a cattle trough heater.

Feed Cheerios and wheat germ in the Fall for fish and filter.

#7 Should I Do Water Changes in My Pond?

Common question

Topping off is not a water change

20% every two weeks.

75% every 2-3 months

Always dechlorinate

#6 Should I run a UV and pump all Year?

Run the pump all year. In winter, be careful about the bottom limnion and supercooling.
Run the UV as needed to control algae. UV kills "good" microorganisms in water too, including bacteriophages.

#5 How many fish can I keep in my pond?

There are lots of numbers
I like: "One inch of fish per ten gallons of water."
One inch of fish per square foot of surface area if you have little or no filtration.

#4 Is String Algae bad? Solutions?

String algae is good.
All algae is good
Consumes O2 at night
String algae kill's pumps and flows
Control with ONE Plecostomus

#3 What can I do about green water?

Major water change to eliminate nitrates
Shade the pond
Reduce feedings
Deploy a veggie filter
Employ a UV sterilizer.

#2 My Ph Is High. How Can I Bring It Down?

Don't.
Unless Ammonia is "up" then be cautious about having it higher than neutral.

#1 My Fish is Sick, What's Wrong with It?

#1 All Time Most Common Question

Useless, too.
Need Checklist info.

Quarantine

Erik L Johnson D.V.M.

Quarantine is the best method to reduce disease introductions. Let me outline a quarantine facility and protocol as if the fish we were discussing were quite valuable.

First, a large facility is required, 100-150 gallons is good.

It should have a fully cycled filter sponge or other type of effective nitrification system, fully operational. Quarantine with bad water is infinitely worse than no quarantine at all. Temperature should be 72 to 78 degrees in quarantine. People heat their fish to 86 degrees to kill Ich and it ends up accelerating bacterial overgrowth and decreasing oxygen capacity of the system. pH should be supported with

SeaChem neutral buffer dosed according to label instructions. You should dose the quarantine with 0.3% salt (Noniodized salt at 3 teaspoons per gallon).

The quarantine should be completely covered or you can float some foam on the surface. Koi like to jump out, and that can be costly.

You should check Ammonia and pH in quarantine each day. Ammonia should be ZERO. pH will normally crash in quarantine unless buffered.

You could feed an antibiotic food during the stay in quarantine. The facility can be safely treated with Dimilin while in quarantine, even with the salt, etc. This will stop the introduction of Lerneiid and Branchiurian parasites.

Once your new fish are in the quarantine, if it's possible, the first thing to be done is to find someone with a microscope to help you determine if there are parasites living on the surface of the fish. Even if you don't recognize what the "bugs" are, it helps to know from the outset that there is something eating at the fish. You can describe what you saw to someone like me, later. Notice things like: How fast the "bug" moved, how big it seemed to be, how it moved, whether it had a nucleus or two in it, what shape the nucleus was, and whether it was armed with hooks, flagella, or what. What is the general shape of the thing? All this helps.

Finally, the quarantine should be of a 14-21 day duration, so long as water quality can be supported with changes, etc. as needed.

The importance of cover is often under-estimated. If fish have cover, like a floating Styrofoam panel, you'll find that jumping is almost eliminated. I highly recommend a Styrofoam panel be floated in quarantine and hospital facilities because without this environmental provision, fish stress levels can be compounded.

What is it?

Isolation to observe fish for disease before exposure of equalized population
Importance of equilibrium to established populations
Isolation of new fish for treatments
Spare existing fish and environment from disease and resultant treatment
Set up of Quarantine
Round tanks preferable to narrow tanks or tubs.
Cover for quarantine
Filter requirements
Ideal temperature but cautions

Importance of partners
Algae
Lighting & Location
Depth

Reasons for Quarantine

Viruses
Bacteria
Anchor worms / Argulus
Internal parasites
Oodinium
Ichthyophthirius

All of the above will survive salt dips or any other incoming technique

Reasons NOT to Quarantine

Q-Tank filter is not cycled
Q-Tank is small or crowded
Main pond is already under treatment
All fish in question are of limited value

"Because the store said the fish were already quarantined." >>NOT<<

Carrier (parasite/bacteria) states, temperature activated viruses, lies, and salt resistant parasites.

Duration of Quarantine and Why?

Some say six months to a year
Parasites would define a two-week quarantine if over seventy DF
If wintertime, leave in Q-Tank 'til late Spring.
If you treat and "do it right" it can be just a week. (Viruses?)

Treatments During Quarantine and Why?

Salt 0.3%
Dimilin or Program
Formalin
Potassium with reversal Day two, five, eight.
UV or no UV?
Microscope can define the above treatments.
Non-caustic anti-trematode therapies would include the more expensive Droncit® [praziquantel] or the more unpredictable Malathion therapy. See formulary for dosing instructions.
"A "shotgun therapy," dosing your fish with a series of medications in the hope that one of them will work, is rarely successful, and if ever used at all should be reserved for inexpensive fish of little sentimental value or perhaps in quarantine on otherwise healthy fish in the interest of prophylaxis.

Baytril has one of its greatest uses in the post shipment stress of larger fish. Many of us know that large fish

generally survive shipment better than smaller fish, however the smaller fish are usually more rapidly adaptable once they land here in the States. In other words, if the little ones live to get here, they usually do fine once they get eating. On the other hand, many large fish will come into the country and simply retire to the bottom of the quarantine, moving only when prodded. You might notice their fins begin to develop red streaks. This fish, like many large Goldfish after shipment, is probably developing a bacterial septicemia. Many factors can contribute to this including a concurrent parasitism, and poor water quality in the shipping container. Check your water quality to make sure about it, and then consider Baytril as an effective therapy for this type of fish.

Feeding in Quarantine

Medicated food
Tetra Tropical Fish Flakes
Feeding in quarantine is very important, and as mentioned, getting the fish to eat is as important as what they eat. It is recommended that highly palatable foods such as Tetra® Tropical Fish Flake food would be used, as well as bloodworms and crushed freeze-dried Krill. Others suggest feeding a medicated food in quarantine and there is no fundamental problem with this, from a fish health standpoint. One such food, called "MediGold" combines three different antibiotics in the same meal, and is well accepted by goldfish and Koi.

A fish with a full stomach is more "unlikely" to break with disease. The food should be simple and tantalizing

What to do if Fish "Break" in Quarantine

Establish water quality
Ammonia, Nitrite, NITRATE and pH
Ensure salinity
Encourage algae
Perform or request microscopic biopsy
Begin injections or other treatment as described.

Rapid Cycle

"Filter seeding"
KI-Nitrifiers
Visit www.lymnozyme.com
KI-Nitrifiers are affordable
0.5 cc per 10 gallons of water

Prevents Ammonia or rapidly cycles the filter in under five days.
Stop UV while deploying

2004 SAKA Koi Show Raffle Supporters & Contact Info

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Next time you need a product you might want to consider them.

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bags

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www.tucsonracewaypark.com

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Zeigler Bros.

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SAKA NEWS



VENDORS AT THE SHOW

A's Aquarium

Bonsai Club of Tucson

Gardeners of Tucson

Kaz Takeda
Butterfly Koi

Kecton Industries, Inc
Lymnozyme

William Limm

**Mountain View Koi & Aquatic
Plants**

North Prairie Fish Farm

Rancho Del Koi

Jill Ruttenberg
Massages

Star Mill
Ultra Balance

Tucson Rose Society



UP COMING EVENTS

January 30, 2005
Janet & Victor Lee



February 11 -13, 2005
Valley of the Sun Koi Show

February 20, 2005
Bob & Darleen Panter



March 5-6, 2005
Koi Club of San Diego Koi Show

March 13, 2005
Warren Essig

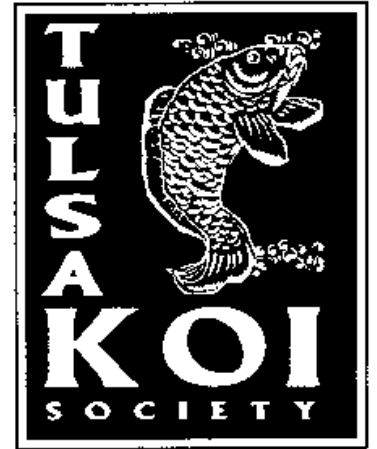
April 24, 2005
Constance Richardson

May 7 & 8, 2005
Annual Pond Tour

May 22, 2005
Faye & Winton Hall

June 17, 2005
Simon & Millie Burgheimer

January 2005



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

SAKA NEWS



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378-3710

Rancho del Koi

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



January 2005



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
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Expiration date _____ - _____
Month year