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Thanks!!!**



**25<sup>th</sup> AKCA Seminar  
June 22-25, 2006  
Buffalo, New York**

## **HOTEL**

Hyatt Regency Hotel –  
Buffalo (\$104 seminar rate) –  
Reservations 800-233-1234

## **Activities**

***Koi over Niagara, Excitement in the Water***  
includes:

Seminars (partial list):  
**Aquatic Plants** – Larry Nau; *Chemicals in the pond & Trickle  
Tower Filtration* – Dr. Roddy Conrad  
**DIY Trickle Tower** – Griff Thomasson  
**Dream Ponds** – Carl Forss;  
**Keeping Koi in Cold Water** – Mike Masterson  
**Koi Health** – Tim Miller-Morgan;  
**Koi & Goldfish Surgery** – Dr. Helen Roberts  
**Pondside Triage** – Dr. Erik Johnson  
**Spray on Pond Liner** – Kerry Snyder  
**Stress** – Dr. Sandy Yosha

**March 2006**

**Update on Koi Health** – Victoria Burnley Vaughan  
**You Thought Mold Only Grew in Your Refrigerator** –  
Richard Carlson

and more...

## **Thursday Buffalo Architectural Tour:**

This tour will focus on the city of Buffalo, including designs of HH Richardson, Louis Sullivan, and Frank Lloyd Wright. One featured structure will be the Darwin D. Martin house complex, the most extensive Prairie house designed by Frank Lloyd Wright. Lunch will be at the Pearl Street Grill & Brewery. Forest Lawn cemetery, designed by Charles E. Clarke will be featured, which will include the *Sky Mausoleum*, the only Frank Lloyd Wright designed memorial open to the public.

## **Thursday Niagara Falls Tour:**

This tour will showcase the mighty Niagara, one of the “7 wonders of the world”, from the American side. Participants will be afforded a view of the Whirlpool rapids, the Niagara River, the marooned barge, etc. Additionally participants will “get up front and personal” with the falls, as they ride on the Maid of the Mist boat. This will literally take participants to the foot of the falls, where they will be able to appreciate first hand, all of its might! (Rainwear will be provided). **Passports are required for all US/Canadian border crossings**, so be sure to bring your passport, if you plan to visit Canada!

## **Sunday Pond Tour:**

Our pond tour will include 6 ponds, 3 located north of the city of Buffalo, and 3 located south of the city. For lunch, we will stop at the Buffalo and Erie County Botanical Gardens, one of only 2 of the large Lord and Burnham conservatories in the United States, and the only one located in an Olmstead park!

## **Wet Lab:**

Our wet lab will offer one half day of instruction in handling fish, anesthesia, skin scrapes/gill snips and other diagnostic procedures, injections, blood draws, etc. Experienced instructors will take the students through the entire process starting with anesthesia and ending with reintroduction into the pond or quarantine facility. You won't want to miss attending this lab!

## **Registration Information**

**Choice of Package I or Package II**

**Package I Offers**

- \* Entry to All Seminars
- \* Friday Lunch
- \* Saturday Lunch
- \* Saturday Banquet
- \* Sunday Pond Tour (Box Lunch)

Single \$280.00 \$ \_\_\_\_\_

Couple \$390.00 \$ \_\_\_\_\_

**Package II Offers**



\* Entry to All Seminars  
 Single \$150.00 \$ \_\_\_\_\_  
 Couple \$210.00 \$ \_\_\_\_\_

**\*Tradeshow is Free to All!**

**Extracurricular Activities / Single Events:**

**Thursday, June 22**

Niagara Falls Tour/Lunch \$62.00 \$ \_\_\_\_\_  
 Buffalo Tour/Lunch \$62.00 \$ \_\_\_\_\_  
 Wet Lab (limited capacity) \$60.00 \$ \_\_\_\_\_

**Friday, June 23 Food Choice:**

Friday Lunch \$38.00 \$ \_\_\_\_\_ **B C V**

**Saturday, June 24**

Saturday Lunch \$33.00 \$ \_\_\_\_\_ **B C V**  
 Saturday Banquet \$60.00 \$ \_\_\_\_\_ **B C V**

**Sunday, June 25**

Pond Tour/Lunch (subs) \$48.00 \$ \_\_\_\_\_ **B T V**

**Single Events total: \$ \_\_\_\_\_**

Dietary: **B** = beef, **C**=chicken, **T**= turkey, **V**=vegetarian

**Money Saving Offers**

Stay at the Hyatt and get a 15% rebate off Package I/II  
 Instructions for rebate will be in the registration packet

**Early Bird Registration:**

Sign up for Package I or II on/before April 1, 2006 and save  
 \$30 single/\$50 couple on Package I or \$15  
 Single/\$25 couple on Package II

**First Timer Special:**

If you have never attended an AKCA Seminar, take an  
 additional \$30 single/\$50 couple off Package I;  
 \$15 single/\$25 couple off Package II

**Payment Information**

Payment by check or credit card (VISA or MasterCard) must  
 accompany registration form.

Cancellations must be received in writing on or before June 1, 2006 to be  
 refundable.

## Spawning

by Grant Fujita  
 reprinted from "[KOI](#)"

It is very difficult to breed good quality Nishikigoi.  
 Professional Koi breeders even find it hard. Hobbyists still try  
 Koi breeding to see the results they get.

The most important thing is to choose good quality parents  
 with excellent blood lines. This is critical. Unknown blood  
 lines and background may cause an undesirable variety of  
 babies. For instance, from a Kohaku parent there might be  
 many different types of Koi such as Taisho-Sanshoku or  
 Showa-Sanshoku, even Ogons and Asagis. Since there is no

such thing as a pure blood line, there is always a chance the  
 babies could be drastically different from the parents.

If planning to spawn Kohaku, Taisho-Sanshoku or some other  
 popular breed of fish, make sure the parent Koi have snow  
 white areas, bright colors, even colors and sharp edges on the  
 patterns. Balance and formation of pattern on the parent Koi is  
 not an important factor. The resulting patterns on babies is a  
 matter of chance and cannot be panned.

The age of the female should be three to ten years. If the  
 female is too small, her eggs will be small and cause  
 premature birth and most of the babies will die. For the most  
 effective spawning, the male should be three years or older, if  
 any younger he is probably unable to produce sperm  
 effectively.

Some well known breeders in Japan will breed with only one  
 male and one female, however, this can develop into a lengthy  
 process since it is difficult to select both fish in the peak of  
 spawning condition. If the breeding is only a part of your  
 hobby, one female to three males is suggested. If the mating is  
 a failure the first time, the male partners should be changed.  
 Also, if the female fails to produce eggs, there is a possibility  
 she has a stomach tumor and should be exchanged for another  
 female with eggs. The major classifications of Koi should not  
 be mixed forbreeding. For instance, if Kohaku breeding is  
 being tried both male and female parents should be Kohaku.

After selecting the parents a decision must be made  
 concerning the container for the spawning. The should be  
 sturdy and smooth as, in the process of spawning, the Koi will  
 move around a lot and often rub up against the sides of the  
 tank. If it is rough, they will injure themselves. The best type  
 container is a tank 6 to 8 feet in diameter and three to four feet  
 deep. A large show tank is a good choice. Make sure adequate  
 aeration is available as the fish will be extremely active and  
 use large amounts of oxygen.

In Niigata spawning does not start until late May or early June  
 because of the cold temperatures. In California and the  
 southern areas of Japan the spawning season starts much  
 earlier, around the beginning of March and early April.

To induce the female to lay eggs there must be a soft and  
 stringy media on which she can deposit them. Typically, items  
 like willow tree branches, water hyacinth, a clean mop head or  
 long stringy algae are used. Most professional Koi breeders  
 use a specially made fiber but, whatever the material, it must  
 be free from disease, parasites, and chemicals.

Another method of spawning applies anificial techniques. This  
 is done by squeezing the eggs out of the female and spraying  
 the male sperm on the eggs. The eggs are then mixed with the  
 sperm and placed into a special hatching tank This is not  
 recommended for amateurs as it can cause injuries to the Koi.



In order for successful spawning to take place the daytime temperature must be above 75 degrees. Many times a female will lay eggs because the pond is shallow and cannot maintain an even temperature. The change in temperature between night and day triggers the fish's natural response to spawn. However, if the pond is deep and the temperature stays even the fish will not spawn unless induced.

Setup the spawning tank early in the morning so the water has a chance to warm up before cooling down at night. A day must be picked when it's obvious the temperature will be over 75 degrees and will stay this way for a couple days. Make sure the spawning materials and aeration systems are ready and installed in the tank. The early afternoon is the best time to release the spawning pair into the tank as they need to adjust to the water temperature. To do this properly, put the fish in a plastic bag with water and oxygen and float it in the tank for at least fifteen minutes then release the fish. Because fish tend to jump during spawning, the tank should be covered; such as with tautly secured shade cloth, netting or even a heavy board. The spawning will start at about 4:00 a.m. next morning and continue for two to three hours.

An additional tank, with water at exactly the same temperature as the main tank, should be ready for the fertilized eggs. (A variation of just a few degrees is sufficient to kill the eggs). These should be removed from the spawning tank as soon as the parents have finished their activity. The water in the spawning tank will be white, smelly and soon become rotten because only a small portion of the sperm, sprayed by the male, is adhering to the eggs, the rest is distributed in the water. The parents must also be removed and, if possible, the female placed in a separate tank to allow her time to recover. Finally remove any eggs remaining and place them with the others in the rearing tank.

The hatching tank should be placed in an area that does not show a temperature fluctuation of more than five degrees day or night. The eggs will die if the temperature changes even 10 degrees in a twenty four hour period. The average sized female will lay between 200,000 to 400,000 eggs. An attempt should not be made to save all these eggs because the hatching tank space is limited. They will not all hatch if the tank is overstocked.

Within four to seven days the eggs will start to hatch. This will vary dependent on water temperature. Warmer water will accelerate the cycle and soon the baby Koi will start to swim. They can survive for a few days on their yolk sack but after that is depleted, they will have to be fed. The best food for them is microscopic animals, but if these are not available they can survive on very small particles of dried food such as powdered milk. They will eat continuously throughout the day, and must be fed every hour. Be cautious to feed only tiny amounts of food because any leftovers will become rotten and

kill them all. In about two weeks, they should be moved to a larger pond for faster growth, still feeding all the time.

The combination of feeding and culling is the most important feature in Koi breeding. Within the first month, the first culling should take place. Eliminate those with deformed bodies, single colors (if raising Koi with pattern), and those that are unusually large. This type of Koi is called "Tobi" and they usually do not have good patterns plus, they eat the smaller ones and these smaller fish, very often, have the better patterns. Professional Koi breeders usually save only about 10% of their hatching. After four months most professional breeders will have grown their Koi to about 5 to 6 inches.

## Spring Balance

From Water Works

For the water gardener the coming of spring seldom fails to arouse feelings of enthusiastic expectation and excitement as the prospect of another period of renewal and aquatic activity approaches. As temperatures begin to climb and the period of daylight lengthens, the whole pond begins to stir, slowly awakening from its winter slumber in direct response to the certainty of the gradually changing season. With new growth sprouting from the dilapidated remnants of last year's prunings, marginal and deep water plants begin to take on a different form. Fish, for the most part unseen during the cold winter months, start to visit the surface again with increasing frequency as appetite becomes stimulated by the warmer conditions - their interval of dormancy at an end. Now is the time for taking stock, planning any future changes and for undertaking a general 'spring clean' so that the pond and surrounding area will be in optimum condition for those all important long hot summer days to come.

Eco-pressures: It is also necessary at this time to pay attention to water quality, for during this period of regeneration various hidden pressures may be exerted upon delicately balanced system that is your pond, which can result in apparently unexplained fish losses at a time of year when such fatalities might be least expected. If things are in need of a bit of a clean-up but not a total spring clean, a general clean and tidy up in and around the pond with perhaps a 10% water change to freshen things up, could make all the difference. In circumstances where water quality is found to be unsatisfactory a greater percentage of water may need to be replaced - but more about this later! Carefully remove from the pond any previously unnoticed debris such as leaves or twigs, as these constitute a pollution threat. Also try to take out any accumulations of blanket weed as they occur, since these can have important indirect implications on the stability a quality of your pond water

Water quality: Water is clearly the vital ingredient; the life support system of your fish. Its quality must of course be considered of paramount importance at anytime - but none



more so than now as the pond and all its biological processes begin to speed up. It is highly desirable therefore, that you are aware of what is going on by testing for certain pollutants so that where problems exist action can be taken before serious damage occurs. Inexpensive and easy to use kits are readily available for this purpose from all good koi stores that will enable you to accurately monitor your water for the presence of these contaminants as well as for determining fluctuations in the pH (acidity/alkalinity) level of your pond.

All fish excrete into the water waste matter in the form of ammonia, a highly toxic substance. This must then be broken down by organisms into nitrites and eventually less harmful nitrates in a natural process known as the nitrogen cycle. These friendly bacteria are active in the lilt layer on the bottom of the natural ponds and on the media and mechanical parts of essential filtration systems. Providing that the pond system is maintaining a reasonable balance, few difficulties should be experienced, the nitrifying bacteria well able to cope with the quantity of ammonia being produced. It is only when this equilibrium is upset that problems start to occur and there are many factors that can influence it - overstocking and overfeeding being among the most likely.

**Boosting reserves:** During the winter months everything in the pond has been in a state of semi-hibernation, fish will have consumed very little while existing on body reserves built up through the previous summer. Consequently only relatively small quantities of ammonia will have been excreted into the water during that time. Now with temperatures rising, fish metabolism increasing and appetite returning, the system is suddenly put under pressure - unfortunately it may not yet be in a position to cope!

There is, among some pond keepers, an understandable, though totally misguided, belief that as fish emerge from winter dormancy it is necessary to introduce large amounts of food to compensate for the previous months of fasting. This is an extremely dangerous practice since the resultant surge of ammonia waste entering the water can overburden and pollute the system before the essential bacteria colonies have had a chance to become properly established. Remember that a biological filter switched on today will take some six weeks to become fully effective. Instead, feed only very small quantities of easily digestible food to start with, increasing gradually as the weeks pass and the water temperature rises. At no time should fish be overfed; little and often is by far the best and healthiest feeding strategy.

Never forget that fish out of necessity pollute their own environment - the more they eat the greater the pollution, it really is as simple as that. The actual toxicity of a given quantity of ammonia waste in a body of water does not necessarily remain static. It is influenced quite considerably by the pH of the water as well as temperature. Alkaline water in conjunct with a rising temperature, for instance, will make ammonia far less injurious to fish than when present in more

acidic conditions. Generally speaking, pond fish are pretty hardy creatures and can tolerate a wide range of situations provided that changes take place gradually. It is when sudden swings occur that problems often start and at this time of year as everything is beginning to speed up, the potential for such fluctuation is perhaps at its greatest.

To measure the level of acidity/alkalinity, chemists have set up a recognized scale by which its intensity can be easily expressed. The term used is pH and it runs from 0-14. PH0 at one extreme is pure acid, while pH 14 (pure alkali) is at the other. Where acid and alkali are present in exactly equal proportions the reading would be a pH7, termed neutral. The important thing to remember when considering variations in pH is that the scale is set logarithmically which means there is actually a tenfold difference between full numbers. For example, a reading of pH6 against one of pH7 shows a change in acidity by a factor of 10 (x10), whereas a reading of pH5 against one of pH7 indicates a change by factor of 100 (x100).

**Toxic effect:** It will be realized therefore, that even an apparently small variation on the scale can indicate a significant increase or decrease in overall acidity/alkalinity of the water and thus possibly influence the toxic effect of any ammonia present upon the fish in the pond. The pH of your water as it comes raw from the tap will vary greatly depending upon the area of the country in which you live. The nature and geology of the landscape upon which it falls as rain will determine its eventual acidity/alkalinity, in much the same way as general water hardness/softness varies considerably from region to region.

So from the point of view of ammonia toxicity toleration, some pond keepers may theoretically be more fortunate than others. However, in practice, the only really safe level of ammonia is absolutely zero. In the spring, algae and blanketweed start to flourish as the pond temperature rises and daylight lengthens and intensifies. This can cause the pH of your water to fluctuate sharply upwards as the day progresses through the natural process of photosynthesis. In extreme cases the difference between a pH reading taken from the pond in the morning and one in the afternoon can be quite dramatic. With a biological filtration system perhaps not yet fully 'on song', and increased fish feeding taking place all the time, ammonia concentrates in the water can quickly reach dangerous levels. If this situation coincides with a high pH alkalinity reading, lessening even further the fish's tolerance to the pollutant, fatal consequences can result, with the larger specimens likely to succumb first and die.

**Undesirable elements:** Before you panic, it should be appreciated that in many respects this represents the very worst that can happen. It is intended only to draw attention to the way in which undesirable elements can come together in certain circumstances to produce serious or distressing problems. Nevertheless, it does serve to emphasize the need to monitor water quality carefully, particularly during this fast



changing season. Thus where fluctuating conditions or pollutant build-up occurs, action can be taken before too much harm is done.

Where serious water quality imbalances are detected the most effective way of bringing rapid relief to the system is a partial water change. Stop feeding, remove up to 40% of the water (depending upon the severity of the problem) and replace with fresh tapwater together with dechlorinating and conditioning agent. Continue to test and monitor until water quality is back under control.

Remember: the most serious problems are generally avoidable providing reasonable attention is paid to basic fish keeping rules relating to stocking, feeding and filtering. If good water management practices are followed you, your fish and your plants should enjoy your pond for many more spring seasons.  
*Water Gardener, from the Internet*

## Did Anybody order Pea Soup

Ah, the sights, sounds, and smells of spring around the pond. The fish are frisky and very hungry eating as much food as 3% of their weight among five feedings a day. It seems they are spawning every few days. You do a water change to get rid of that excess ammonia and they spawn again. The lilies and bog plants are just beginning to grow after their dormancy so you feed them with the proper fertilizer to get the most out of the early spring growth. The toads and frogs make a heck of a racket into the night laying their strings and mats of black pearls. The fish gobble up the mats but leave the strings to develop into tadpoles that feast on hair algae or your favorite plants. Life is everywhere. And then there's 'Soup du jour', usually Pea, rarely Bullion. Why does this happen when things are going so well. Especially right after you added that special brightly colored koi with a name you can't say, spell, or even remember. Well, lucky for you 'Soup de Jour' is just that 'the soup of the day', or week, month, season. It actually isn't so bad, unnatural, expensive, or even hard to eliminate. A look at the nature of the beast will yield both secrets and questions.

Hutchinson introduced the "Paradox of the Plankton" as how so many different species of unicellular algae or can thrive without one becoming dominant to the exclusion of the others. One explanation is that of "contemporaneous disequilibrium", that is, the cells are floating around in such random haphazard manner that they are never in one place long enough to make a difference.

Does anybody ever order pea soup on purpose?

In laboratories and fish hatcheries there are scientists and aquarists that go to great lengths to produce pure cultures of select species of algae. These algae are critical for the culture of zooplankton which are typical first foods for larval fish. Algae producers constantly toe the line of the carrying capacity for algae culture. Population crashes and contamination by another species are common as algae can

double their population in as little as a few hours. With that fast a doubling rate the algae culture can starve if and when the nutrient food supply is exhausted.

Back in your pond that culture, or pea soup is balanced on the brink. It gobbles up nitrates then dies and recycles nutrients within your pond. A close look at your water clarity will show a surprising clearness late at night as opposed to late afternoon. The beast can even swing your pH and oxygen levels to really stress your fish. During the day the algae are converting CO<sub>2</sub> to O<sub>2</sub> driving the oxygen levels to maximum. The lack of CO<sub>2</sub> and accompanying carbonic acid (H<sub>2</sub>CO<sub>3</sub>) drive the pH up to dangerous levels where ammonia becomes un-ionized and very toxic to fish. At night the algae, being a green plant, respire to consume O<sub>2</sub> and produce CO<sub>2</sub>. Low oxygen and high CO<sub>2</sub> makes more carbonic acid which drives the pH down. A couple of cloudy overcast days in a row can spell disaster for large earthen fish ponds under bloom conditions as the lack of sunlight will cause a massive die off of the algae so that oxygen is no longer being produced and the decomposition of the dead algae further consume critical dissolved oxygen to severely stress or even kill the fish unless supplemental aeration is provided. This sounds really bad but your pond is hopefully buffered to stabilize the pH and the constant aeration from your waterfall or filter return will keep the gases in check.

The beast is feeding on all those nitrates that built up over the winter when the water temperature was too cold for algae to grow. Once the water temperature reaches the minimum the algae growth then boom you have what is called "bloom conditions. As long as these conditions are good for algae the soup stays thick and green. Water changes may help, but some municipalities have chloramine in the water which will feed the beast. You could let it run it's course, but it could continue through summer if there are no plants to consume the nutrients. Now, how can you be fertilizing the plants (and algae) while expecting the plants to out compete the algae for nutrients? Simply put, shade is the key here. The lilies will eventually hit that magic 70% surface coverage and the algae will be starved for light. In the absence of lilies you could provide a shading structure over the pond. There are even dye additives that will accomplish this. I'd stay away from chemical treatments that kill the algae as that would only load the system with dead decaying organic material and start the process all over again. I like to simply strain the algae from the water by placing a basket of polyester floss at the base of the waterfall or return. Simply wring it out or discard it when clogged and full of green ooze. Another popular treatment is the Ultraviolet (UV) sterilizer which zaps the cells as they pass through a tube of ultraviolet light. The UV also kills bacteria (good and bad so install it after your biofilter) and other unicellular pathogens. The trick here is to mechanically remove the algae faster than it is reproducing (remember that doubling rate). Oh yeah, if you're raising fry indoors and want green water to feed them, good luck; it's near impossible to get



good green algae blooms in the low level light and sterile clean culture water conditions of indoor cultures.

Bob Heagey Bonsai Koi Ponds , <http://home1.gte/bonsai>

## DEALING WITH THE PONDKEEPER'S BANE

Algae Remedies: Greenwater is with us every spring and from conversations with club members I see that this year is no different. So, for all you algae-lovers out there, here's the obligatory greenwater article. Via Ponds & Garden, April 2001

Algae is a green plant, albeit microscopic, that needs sunlight and nutrients to survive. Controlling this pondkeeper's bane requires deprivation of either light or food, or both..

Be Patient...Even if your pond is not overstocked with fish, spring often brings a touch of string algae followed by green water... until the pond's plants have fully reawakened. Patience is the key; wait it out as the pond balances on its own. Of course, performing a partial water exchange may temporarily alleviate the algae bloom, but until the pond plants are awake and out-competing the algae for the pond's nutrients, the algae bloom will return.

A Clean Pond -- If fish wastes and particulate organic matter, commonly known as silt or muck, accumulate on the pond bottom or in gravel pockets within the pond, you may as well incorporate your own algae business. These organic wastes, through their decomposition and role in the Nitrogen Cycle, supply a continual source of nutrients to the water...fostering continual algae blooms and slimy, string algae. Regularly vacuuming the pond bottom in conjunction with partial water exchanges prevents such build-ups and their resultant algae problems, as does the use of bottom-drain systems.

Eco-Balance -- Although many sources cite a list of quantities of various types of aquatic plants to be stocked in the pond to achieve 'eco-balance', even a full-sun pond can remain free of algae with only enough submerged grasses or floating hyacinths to out-compete for nutrients. One bunch per square foot of water surface of submerged anacharis, Eoldea, or coontail (free-floating-but submerged Ceratophyllum demersum) will keep the pond water free of algae as long as the pond is not over-stocked with fish. Northern ponds should use Elodea canadensis which is more tolerant of cold water than the South American native, anacharis. Elodea often breaks dormancy and begins removing nutrients from the water at the same time as traditional algae blooms. It is possible with the proper amount of Elodea to not experience an algae bloom at all.

Water Wyche -- Another way to remove excess nutrients from the pond water is the new Water Wyche (R). Its natural media

absorbs the water's nutrients so long as the water's pH is in a neutral range below 8.0 pH. Remaining effective for 3 or 4 months, the Water Wyche (R) naturally removes nutrients created by fish that nibble away your submerged aquatics.

Barley Straw -- An effective prevention of algae growth is the use of barley straw. Generally most effective at prevention when used from November through spring, it seems to keep the algae at bay during the season with the assistance of aquatic plants. The straw should be removed from the pond before it starts to decompose and begins adding nutrients to the water. Many people include barley straw as a media layer in the bio-filter where it is out of sight.

Shading the Water -- Many botanical gardens attack algae by depriving it of sunlight with water dyes. These dyes shade the water in either blue or black. Especially in the early spring, such shading inhibits the growth of aquatic plants. Move them closer to the water's surface until they are established and can survive at normal depths. Shade can also be supplied with surface-covering plants such as water lily leaves and floating plants like water hyacinth. Remember, however, that the pond's primary source of oxygen is at the water's surface. Too much surface coverage can result in low oxygen levels, your fish advising you of the fact by gasping or gathering at the surface and at waterfall entries. You'll need to provide additional aeration and/or reduce the amount of fish in the pond, if you maintain extensive surface coverage. Yet another way to shade the pond surface is with a canopy of shade cloth or lattice. Koi Pondkeepers often use this method that also protects the koi's colors and shields them from view of overflying predators. Northern water gardens find this method inhibits the growth of many flowering aquatics, while southern water gardeners find that partial shade of lattices protects flowering aquatics from excessive heat and oppressive sunlight.

Mechanical Algae Removal -- Twirling a stick or brush in the water is the best way to rid the pond of string algae. Shutting down the waterfall and using a scrub brush (with no soap or chemicals) satisfies fastidious Pondkeepers.

Ultra-Violet light kills free-floating, green water algae as the cycling pond water flows past it. The algae cells are damaged by the light and die within the pond. Cleaning their debris from the pond bottom prevents it from feeding future algae blooms. UV lights also kill the free-swimming stage of many parasites, as well as any bacteria in the flowing water. To protect the beneficial bacteria in the pond, the UV light is set up after the bio-filter in the pond's plumbing scheme.

Chemical Controls? -- Do not use chemicals to kill the algae since most algicides are based on one of two chemicals; copper sulfate or simazine. Copper sulfate also effects other aquatic plants in the pond, particularly submerged grasses, floating aquatics, and more sensitive water lilies. Simazine is not recommended in the presence of fish.



# SAKA News



**October 22, 2006**  
TBA

**November 10-12, 2006**  
27<sup>th</sup> SAKA Koi Show & Auction

**December 2006**  
TBA  
June 22-24, 2007

**26<sup>th</sup> Annual AKCA Seminar**  
**June 21-24, 2007**  
Phoenix Marriott Mesa  
Mesa, Arizona  
Hosted by SAKA & VSKC



At the February meeting, the membership passed a motion that if you host a club meeting, the club will pay you up to \$50 for the cost of hosting the meeting. You must turn in your receipts for you to receive your refund. So now, do you want to show off your pond, contact Tom Ayers. Still have open dates.

## SAKA

# 10% Discount

With your SAKA Membership Card

**Boyd Equipment Center**

3625 S Country Club Road  
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. Sagauro Shadows Drive  
Tucson, AZ  
886-8797



# Kawarigo Korum

## Up Coming Events

**March 26 2006**  
Dan and Martha Cover

**April 23, 2006**  
TBA

**May 6 & 7, 2006**  
SAKA Pond Tour

**May 21, 2006**  
The Kline's

**June 18, 2006**  
Bruce & Wanda Triebel



**25<sup>th</sup> Annual AKCA Seminar**  
Buffalo, NY  
June 22-25, 2006

**July 23, 2006**  
Kirt & Lisa Orgen

**August 27, 2006**  
TBA

**September 24, 2006**  
TBA



# SAKA News



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 1-888-660-2073



## 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?  
\_\_\_\_\_

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