



A big thanks to Kathy and Dennis Leonard for letting us share their Koi pond and the apple pie. Thanks again. This month Debbie and Noel Shaw have the honor of sharing their Koi pond with us. Big thanks in advance.

Southern Arizona Koi Associations twenty-fifth Koi show is almost upon us. If there is anyway you could help out please volunteer to do so. All help is greatly appreciated. This will be are biggest and best show ever. We will have more venders, more fish, and more people. What else could you ask for? Don't answer that. Hope to see you all there, with fish of course.

The weather is still warm, so please check your fish and your water quality. These are important things to look out for. That reminds me. Please remember to bring your test kits to the meetings. You might be surprised to see just how or how not so accurate they are. BRING YOUR TEST KIT!!!!.

For the love of Koi,

*Bob Panter*

Bob Panter  
SAKA President

## Prizes for the Raffle

Here come the prizes for this year raffle and we have some great ones all ready and we still have 6 weeks to go. Great job folks. Buy those raffle tickets and get a chane to win some great prizes. The tickets are a dollar each or 12 for ten dollars. Good Luck.

### Funtasticks

Family Pass for Miniature Golf  
221 E. Wetmore Rd.  
Tucson, AZ 85705

Reid Park Zoo  
Family Day Pass  
1100 S. Randolph Way  
Tucson, AZ 85716

Calif. Earth Minerals  
Terra Clay 2-2#  
[www.calearthminerals.com](http://www.calearthminerals.com)

Koi Care Kennel  
6 2# DeBride Food  
Tom Holder  
[www.koicarekennel.com](http://www.koicarekennel.com)

STRATA INT. INC  
1- Organic Digester  
[www.strata-int.com](http://www.strata-int.com)

OASE PUMPS INC.  
4-Millstone Pond Kits  
[www.oasepumps.com](http://www.oasepumps.com)

CAL PUMP  
1500 gph Torpedo Pump  
[www.CalPump.com](http://www.CalPump.com)

NOVALEK  
12- Pond Prep  
[info@novalek.com](mailto:info@novalek.com)  
[www.novalek.com](http://www.novalek.com)

AQUA ULTRAVIOLET  
Advantage 2000 UV Light  
[www.aquaultraviolet.com](http://www.aquaultraviolet.com)

WILLCOX BEAUTY SHOP  
Color Television

## *KHA* *REPORT*

The Koi Health Advisor wet lab in Newport Beach on April 17 & 18 was an extremely informative, interactive training session. The purpose of the AKCA's KHA program is to disseminate information regarding Koi health to its various clubs through its graduates. The speakers and demos were awesome.

Norm Meck did a great job with what many consider to be a very dry subject – water quality. He had the KHA's test their test kits against freshly made known chemical concentrations of pH, salt, ammonia, nitrite, and nitrate. WOW! Some older test kits, and even some brand new test kits gave readings so inaccurate, that any action steps taken based on the results could have been disastrous. What an eye opener. P.S. – the Aquarium Pharmaceuticals brands seemed to be uniformly more accurate.

Sandra Yosha, DVM, a practicing veterinarian from Florida, and author of the KHA program's section on Koi health and treatment, did a great demonstration on handling, anesthetizing, and medicating

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Koi, and inspecting for parasites under a microscope.

Tim Miller-Morgan, DVM, a researcher and instructor from Oregon State University, did a necropsy / dissection of several small Koi, demonstrating anatomy and tissue and blood sample collection techniques. He also discussed parasite life cycles and how that knowledge influences treatment. In addition, he shared stories of some of his work with local sea life parks in the Pacific Northwest.

Rob Hildreth, DVM, a practicing veterinarian from the LA area, gave a vibrant, practical lecture on common useful pond treatment methods. He also described some of his encounters with ponds, pond owners, and Koi in the area.

Richard Carlson, a graduate student currently researching KHV, presented an excellent program on the latest information about the Koi Herpes Virus. He detailed the current knowledge base and cutting edge research into the potential for treating, preventing, and vaccinating against this of this deadly, latent virus.

Spike Cover, author of the KHA section on Koi Anatomy and Physiology, and director of the KHA program, did a great job presenting and demonstrating a section on parasites, and demonstrated treatment techniques for *Aeromonas* ulcers.

In addition, Burt Ballou talked informally about pond design and construction, and Chris Neaves about Nutrition.

## ***TESTING YOUR TEST KITS***

At the September 25<sup>th</sup> meeting at the Shaws' home, we will be demonstrating a test kit testing. In other words, we will supply standardized concentrations of the things we most commonly test for in our ponds... ammonia, nitrites, and nitrates. We'll have a saline sample also, so bring your salt test kit or salt meter. You will be able to assess the sensitivity of your own test kits against a known standard. **BRING YOUR TEST KIT!!!**

### ***Water Testing For Your Pond***

*Reprinted from The Valley of the Sun Koi Club  
Newsletter*

Tests! "We don't need tests!" the cry of the beleaguered pond owner who has problems enough dealing with algae, malfunctioning filters and pumps, pond leaks and sooner or later sick fish. Monitoring water quality in a Koi pond is often viewed with the same degree of enthusiasm as preparing a tax return. Who subjects oneself to another

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bunch of problems? Well, if your tax return is not prepared, your tax problems will not just go away, and if you don't test your pond water, your water quality problems will not just go away. Unlike paying taxes, testing our ponds is entirely voluntary; so let's consider three good reasons for volunteering. First, knowledge is power. Second, prevention is easier than cure. Third, learning can be fun. The reasons for not testing - to time consuming, too confusing, too expensive and just not necessary - don't stand up in light of the facts, as we shall see. Another consideration is that we generally have Koi ponds for two basic reasons - the beauty of the water environment and the pleasure of having Koi. Water testing goes to the heart of both these issues - keeping the pond attractive for our enjoyment and keeping the water healthy for the fish. The latter is the most important reason to test. As hardy as Koi are, long-term exposure to poor water quality will cause stress and disease. Unfortunately, we cannot rely on our unaided senses to determine water quality - clear water is not an indication of good water quality from a fish's perspective. Millions of years of evolution have resulted in fish that are superbly adapted to their environment. An attempt to create and maintain an artificial pond environment for even domesticated fish is complicated by the fact that fish are essentially "bags of water living in water" with only a

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semipermeable membrane to maintain internal integrity. Terrestrial animals, as ourselves, can be considered "bags of water living in air" with enhanced barriers that, relative to fish, effectively separate and protect us from our environment. We can tolerate pollution and environmental changes much better than fish can because our bodies do not interact with the environment as intimately as do fish bodies. Fish are truly a part of their environment and are strongly and directly affected by its condition.

Because Koi are so adapted to and affected by their environment, it is important that natural, healthy conditions be maintained in a pond to ensure healthy, happy, colorful fish. Fish disease issues invariably involve water quality. Poor quality stresses the fish, which in turn causes their immune system to go down, which in turn makes the fish susceptible to disease pathogens. In order to know if there is good water quality, it only makes sense to test it periodically rather than wait for disease symptoms to appear.

"A pond is basically a toilet". Fish waste must not be allowed to accumulate in a pond, which usually means a biological filter must be operating properly. Fish waste and other organic debris are the first step of the nitrogen cycle, a series of events that produces some of the compounds we test for - ammonia, nitrite and nitrate. Algae may colonize and detoxify a pond with high levels

of nitrogen compounds, but alga's presence changes water quality for two other things we should test for - pH and dissolved oxygen. The last naturally occurring factors we routinely check are temperature and water hardness.

## When to Test

Individual, one-time tests are only important if the test results indicate a toxic or dangerous condition, such as high ammonia, where corrective action has to be taken immediately. The greatest benefit of testing, however, is obtained when results are plotted on graph paper over a period of several testings, so that trends or directions can be noted early. By knowing the direction your pond's water quality is taking, you can take corrective action before the problem gets out of hand. Normally, tests for ammonia, nitrite, nitrate, pH and temperature should be made once every week or two. Tests should be made more frequently during periods of change in the pond, such as spring warming, new filter installation, major pond cleaning or repair. At such times daily testings for certain items may be necessary, for example pH test during cement work and ammonia and nitrite tests for new filters. During stable periods such as mild summers, testing may be cut back to once every three weeks, and during periods of midwinter inactivity, testing can be eliminated.

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## Test Kits

Home kits all work the same way - there is a small container for a measured sample of pond water, a chemical to add to the sample that will cause the water to turn a certain color, a color chart to compare the result to and instructions to tell you if things are OK or not. Some kits use drops and some use tablets - drops are faster but tablets are easier to measure. Test kits come in either "Master Packs" which contain several basic tests or a single test pack. Refills are usually available and most of the chemicals have expiration dates after which they don't work properly. The basic tests are usually ammonia, nitrite, nitrate and pH. The following is a discussion on the specific factors tested in a Koi pond. You do not need this information in order to properly test your pond, as the commercial test kits are simple and easy to understand. Read this only if you care to understand the factors behind the test results. Don't worry about the technical measurements, because the color charts in the test kits really make things very simple. There's no reason to convert mg/liter to oz/gallon because only the ratio matters and you don't even need that to read the color chart. What is important to realize, however, is the interrelationship between pH and various factors in the pond. Also, results may vary depending on the time of day and how long the water sample was stored before being tested.

## Ammonia

Is introduced by the fish waste and decomposing organic debris, is the most toxic nitrogen compound. It is present in two forms in the pond - free and ionized. Free ammonia is the most toxic and will cause death in very low concentrations. Problems associated with non-lethal elevated levels of ammonia include gill disease, dropsy and fin rot. The higher the pH and the temperature, and the lower the salinity or hardness, the greater the ratio of free ammonia to the ionized form. Thus, the higher the pH and or the temperature, the more toxic the ammonia. Test kits measure the total ammonia (free plus ionized). With a properly functioning biological filter, the ammonia level is usually zero in the pond and should be under .1ppm (mg/l). Nitrosomonas bacteria in the filter oxidize ammonia into nitrite, our next compound. If the level of ammonia is elevated, you should immediately add ammonia remover such as Tetra Aquasafe, Kordon AmQuel or make partial water changes. You should also add nitrifying bacteria to your filter and stop feeding your fish until the situation is corrected.

## Nitrite

Is less toxic than ammonia, but still very toxic as it inhibits the ability of the blood to carry oxygen. Nitrite is oxidized into nitrate by Nitrobacter bacteria living in the filter, but some of

the commercially prepared bacteria compounds for ponds are rather skimpy in the amount of Nitrobacter present because it is relatively expensive. Thus your pond may experience a nitrite spike as your filter is being conditioned until the Nitrobacter colony reaches sufficient size to deal with all the nitrite. If the nitrite level is elevated according to your test results, you should make a partial water change and add bacteria high in Nitrobacter, such as Aqua 5

## Nitrate

Is the end product of the nitrifying phase of the nitrogen cycle. It is much less toxic for Koi than either ammonia or nitrite. It is however, a nitrogen compound that is the food and the fertilizer for algae. In nature, nitrate is absorbed by water plants and is reduced into free nitrogen by anaerobic bacteria living in the bottom silt. Hydrogen sulfide and methane gas are given off as a by-product of the anaerobic filtration. An oxygenated, clean pond will not have any anaerobic bacteria present, so nitrate will accumulate in the pond. An algacide is often used to control algae that would be attracted to the nitrate. Partial water changes of 1\10th per week will flush out the accumulating nitrate. If the nitrate level is over 20 mg\l, you should make water changes immediately or add Aqua 5 Dry, which contains bacteria that remove nitrate without

producing hydrogen sulfide and methane gas.

## pH

Indicates the ratio of hydrogen ions to hydroxyl ions on a logarithmic scale from 0 (pure acid) to 14 (pure alkaline). Pure water is 7.0, meaning that there is an equal balance of hydrogen ions and hydroxyl ions. Most tap water in the southwest is between 7.4 and 7.6, which is perfect for Koi, as they do best in water 7.2 to 8.0. Koi can actually tolerate a wide range of pH, from 6.5 to 9.0. but they cannot tolerate a rapid change - more than .2 per hour. (Note the logarithmic scale means that there are 10 times as many hydroxyl ions at 8.0 as at 7.0). As mentioned above, pH affects the free ammonia\ionized ammonia ratio, with a higher pH resulting in a greater concentration of the more toxic free ammonia. To make things more complicated, algae and other water plants can drastically change a pond's pH from night to day, due to a change in the amount of dissolved carbon dioxide present in the water. We're concerned about rapid pH shifts not only because of the ammonia ratio, but also because the fish are trying to keep their blood pH even during these shifts, thereby causing stress. Carbon dioxide mixes with water to form mild carbonic acid; therefore, more carbon dioxide means a lower pH, and less carbon dioxide means a higher pH. A bloom of algae will take up a lot of carbon

dioxide during daylight for photosynthesis and emit a lot of carbon dioxide at night during respiration. Buffers such as bicarbonate ions help maintain the amount of carbon dioxide and therefore the pH remains even in the pond, but if there's too much algae for the available carbon dioxide, it will be obtained from the bicarbonate ions in the water, thus reducing the buffering agent and increasing the risk of rapid pH changes. Finally, even though Koi can tolerate extremes of pH there are diseases directly caused by the stress. Acidosis is a reaction of fish to acidic conditions, in which they act highly agitated, with a lot of jumping. A rapid lowering of pH will cause quick death, while a slow lowering below tolerance levels will cause few behavioral changes until the inevitable death. In alkalosis, a reaction to conditions that are too alkaline, the gills and fins are destroyed; otherwise the symptoms are similar to acidosis. Continued high pH can be caused by improperly cured or sealed concrete ponds or mortar work. New concrete ponds should be sealed with penetrating water based or epoxy compounds, which not only provide a water seal, but also bond with the lime to eliminate pH problems. Cement based water seals don't do anything to control pH. For temporarily raising or lowering pH, you should use sodium bicarbonate or sodium monophosphate respectively. If fish are in the pond be sure to alter pH gradually - no more

than a 0.2 change per hour. If an algae bloom is causing the pH shifts or extremes, you have to first determine if your filter is working properly, in which case it's safe to kill the algae (while monitoring dissolved oxygen levels). If an improperly operating filter is the cause of the algae bloom, you have to first ensure safe levels of ammonia and nitrite before it is safe to control the algae. Remember, go slow in fixing the problem that probably took a long time to develop. Finally, if algae are present, take an early morning and a late afternoon reading before taking corrective action.

## Temperature

is often viewed by pond owners as a guide to feeding, more than as a health issue for Koi. Temperature should be monitored for both daily and seasonal extremes. Temperature affects dissolved oxygen levels, respiration, metabolic rate, pH balance, free ammonia/ionized ammonia ratio and osmoregulation. Koi can tolerate a broad range of temperatures, from ponds that are iced over, to water up to 90F, better than they can tolerate sudden shifts in temperature. If you have a shallow pond (less than 2 feet) in full sun along with cool summer nights, the pond temperature may be changing by more than four degrees an hour, causing stress to the fish. Greater splashing of the water and shading may control the problem. If your pond is subject to stressful temperature

changes, a 0.1% solution of sea salt containing calcium, potassium, sodium and trace elements will reduce the stress as it aids the koi's osmoregulation. As with pH, do not drastically alter a pond's temperature. Fish can tolerate a low to a high temperature change better than a high to low change.

## Water Hardness

Consists of two elements, permanent or general hardness and temporary or carbonate/bicarbonate hardness. Koi do better in hard water because of the relation of salt within their bodies to the dissolved salts in the pond. In soft water, the difference in salt concentrations means the Koi have to work harder, through the process of osmoregulation, to prevent the salts within their bodies from diffusing out through their gill membranes. Harder water allows the Koi to ease up on osmoregulation and therefore reduce stress. As mentioned above, bicarbonate ions buffer the water, reducing pH shifts, another cause of stress in Koi. Koi do well in carbonate hardness of 150-300 mg/liter or 9-18 degrees dH. In most Koi ponds the water is too soft due to the fact that there is no natural mud bottom that leaches minerals into the water. Marine salt and sodium bicarbonate increases hardness and will also cause pH to go up. A permanent salt solution of 0.1% is beneficial to Koi, and

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works out to eight pounds per 1,000 gallons. Check your pH if you add salt, and do not use table salt. Salt will not evaporate out and needs to be replaced only if water is drained from the pond.

## Dissolved oxygen

Is usually only a warm weather concern, as it is associated with water temperature and algae. However, the larger the fish, the greater the oxygen demand - low levels will stress and kill your biggest Koi. Ponds that have been safe for many years become unsafe as your fish grow larger. The colder the water, the greater its capacity to hold dissolved oxygen. Algae takes up oxygen at night, and an algae bloom can cause suffocation in large fish and inhibit the oxidation process of nitrifying bacteria. Also, dying algae and decaying organic material takes up oxygen. Testing for dissolved oxygen allows you to determine if your pond has the maximum amount of oxygen for the temperature of the water. Splashing the water into small droplets with a fountain or waterfall is best for aeration, although venturi valves on underwater jets and air compressors also do a good job of oxygenation.

## Chlorine and Chloramine

Should be tested for if your water supply is from any source other than your own well. Chlorine will burn off by itself

in a day or so, but chloramine must be broken down and removed chemically. Check with your local water agency to determine whether they add chlorine or chloramine. These chemicals damage the gills and liver and even in low concentrations can cause stress that ultimately leads to disease. Also, frequently overlooked is the fact that they are added to the water supply to kill bacteria. The beneficial, nitrifying bacteria in your biological filter can be killed off by chlorine and chloramine in concentrations that do no obvious damage to your fish. Good products on the market to eliminate chlorine and chloramine include Tetra Aquasafe, Kordon AmQuel and Aqua 5 chlora Gone.

## Copper

Should be tested for if water supplied to the pond is via copper pipes or if coins are thrown in the pond. Copper, in its toxic form will leach into soft water more readily than into hard water. It damages skin and gills and can cause sudden death that is very hard to trace. It also kills the nitrifying bacteria in your filter, which results in an ongoing algae problem. Copper is used in several pond treatments and should be monitored if you are using any such treatments. Concentrations above 0.015 mg/liter are dangerous to fish, and even lower levels can kill the beneficial bacteria in a biological filter. In conclusion, testing gives you the information you need to ensure the best possible

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conditions for your fish, as well as the information needed to maintain water clarity. It only takes a few minutes a week, and is about the best investment of pond maintenance time you can make.

## KOI CLASSIFICATION & JUDGING CRITERIA

By Douglas Dahl

### KOHAKU

It is said "appreciation of Koi starts and ends with Kohaku" What that means is Kohaku was the first class to be bred consistently or stabilized in about 1890. It also means that after a person has studied all of the classes of Koi and has become experienced, they will come back to appreciate Kohaku for its simplicity and beauty. I will keep the amount of Japanese terminology to a minimum in this lecture. A Japanese term dictionary will be available soon in KOIUSA magazine and on the AKCA website. Before I continue on Kohaku, I want to take a minute to discuss judging points common to all classes. Koi are judged as a whole or holistically and are not judged on a positive or negative point system. Negative points can come into play in close contests. Koi are judged side by side based on what we see today and not what may be there next week or next year. Japanese Judges have a disadvantage in often being able to recognize bloodlines, which can cloud their "judge for today" decisions because they know which koi cost more and has more potential. A Japanese Judge once answered a question on why a koi won an award replying, "because it was the most expensive fish". Koi may lose today only to come back to win tomorrow based on the competition tomorrow.

1. First, the koi cannot be missing anything like a fin or have any abnormalities like a pushed in mouth all of which will disqualify the koi from judging. The exception is the second set of barbels.
  2. Second the koi must be healthy and not show signs of disease or parasites, which could disqualify the koi from judging. An exception is made for split fins or bruises judged to be caused during transportation.
  3. Third, is the importance of body conformation. Broad, thick body shape of female koi is preferred giving an imposing appearance when compared to the thin trout shaped body of a male koi. Shape and size of the fins are important to be in proportion to the body. The head shape is important that it not be too short or too long or turn to one side. The koi when viewed from above should be symmetrical on both sides and not have one side flatter than the other.
- Even the way a koi swims is taken into account on conformation. Not all female koi hold their eggs well, which could affect conformation.
4. Fourth, in my opinion is quality of skin and deep, vibrant colors, which makes koi “living jewels”. This also includes how well the koi is “finished”, are all of the colors up, and is there a good sheen on the skin. It is conformation and quality that will catch a Judges eye from a distance.
  5. Fifth is pattern that is artistically balanced and not front, tail or side heavy. Pattern must also be proportional to the size of the koi and not have a small pattern on a huge body or a huge pattern on a small body.
  6. Last is uniqueness or character usually of the pattern on the head that makes this koi special.

Now for Kohaku. We have a snow white (shiro) base color with a red (hi) pattern. The pattern may be stepped or continuous. The white must be

without blemish or yellow tint. The hi may be any one of the many hues from deep persimmon orange to Ferrari red but the red must be thick without any thin spots and the pattern must be the same color from head to tail. So me Judges prefer the persimmon orange hi to the Ferrari red because the orange appears soft and the purple red appears hard and gaudy. Kohaku must have red pattern on the head. The pattern on the body must be artistically balanced and the kiwa or rear edges of each spot must be sharp like cut with a razor. A new bias in Japan has started to favor bloodlines that have the kiwa stop at the edge of each scale forming a scalloped edge rather than a straight edge across the center of a scale. The front edge of each spot (not on the head) may have blurred red color that is called “sashi” or insertion. Sashi indicates the koi is still improving in quality and is not finished yet. It is elegant if a Kohaku has a white nose and a white area with no red pattern just in front of the tail called a “tail stop” and several other names. Some subtleties of pattern not liked are a totally red head or red down the face to the nose that are heavy in appearance. Red pattern wrapping below the lateral line suggests a future koi when the red and white are better balanced. Red spots below the lateral line are disliked. The lateral line is a raised sensory organ running the full length of a koi half way up the side of a koi. A red head pattern with an additional red lip mark is called “kuchibeni” and can be cute if it balances the overall pattern. Red pattern at the base of the pectoral fin was considered unfavorable but is if it adds to the overall balance of the pattern. Red into the tail or into the dorsal fin is still disliked. Kohaku tend to get black specks “shimis” in hard water with high pH.

### **SANKE**

Sanke or “Taisho Sanshoku” is a Kohaku with an added black spotted pattern overlaid onto the body. Sanke were first stabilized round 1917(the Taisho Emperor era). All of the criteria for Kohaku also apply to Sanke. In addition, the black spots

must add to the overall balance of the pattern. The black or “sumi” spots must all be the same color, must be thick with good kiwa, may have sashi, must be shiny, lacquered black and are preferred on top of the white instead of on top of the red. Sanke sumi spots are usually above the lateral line on the back. Sanke may or may not have black stripes in their fins but too many stripes can make the fins appear heavy.

Sanke have a tendency to get too much sumi on the back half of the koi making it appear tail heavy. It is difficult to finish the quality of the hi and the sumi on a Sanke at the same time because the hi peaks early in age and the sumi peaks later. Many Sanke have lost to Kohaku because the sumi on the Sanke was not finished which detracted from the appreciation of the Sanke even if the white and hi of both koi were equal. It seems unfair but on the other hand a Sanke with all colors finished has the advantage of difficulty and rarity over Kohaku. This advantage is not often discussed but definitely an advantage in judging. A Sanke with a circle red Tancho pattern on the head in addition to a red and black pattern on the body is a Maurten Sanke. A Sanke with a red pattern running the full length of the body almost covering the complete top is Aka Sanke. Aka is another term for red.

### **SHOWA**

Showa or “Showa Sanshoku” is a Kohaku with an added black, spreading pattern overlaid onto the body that wraps from the back down below the lateral line. The black is not spots like in Sanke. Showa were first stabilized round 1920 (the Showa Emperor era). The earlier Showa bloodlines were a checkerboard of black and red with very little white showing making people call it a black koi with white markings. In fact, breeders kept only all black babies. Modern “Kindai” bloodlines have a more balanced amount of white, red and black showing. Not until the creation of the modern Kindai Showa did Showa compete on an equal basis with Sanke and Kohaku. All of the

criteria for Kohaku also apply to Showa. In addition, the black wrapping pattern must add to the overall balance of the pattern. The black or "sumi" pattern must all be the same color, must be thick with good kiwa, may have sashi and must be shiny black. Early bloodlines had dull or matte finished sumi and were not as popular as the modern Showa. Showa MUST have all three colors on their face. Often there is a lightning pattern across the head down to the nose called "Menware" or a V pattern on the shoulder. Showa usually have black in their fins including black base of the pectoral fins called "motogoro". Showa have a tendency to get too much sumi on the pectoral fins or on the back half of the koi making it appear tail heavy. It is difficult to finish the quality of the hi and the sumi on a Showa at the same time because the hi peaks early in age and the sumi peaks later. Many Showa have lost to Kohaku because the sumi on the Showa was not finished which detracted from the appreciation of the Showa even if the white and hi of both koi were equal. It seems unfair but on the other hand a Showa with all colors finished has the advantage of difficulty and rarity over Kohaku. Again, this is not often discussed but definitely an advantage in judging. Some Showa have light gray sumi under the surface of the scale called "boke" but many judges call it unfinished if some of the sumi is up and black but not all of it. Local, unfinished sumi marks on Showa are currently being evaluated whether they should be judged a beauty mark if the quality of the koi is high. Should a Showa with some unfinished sumi be less appreciated than another koi variety that is finished? It is not a simple answer because you have to see both koi to make that holistic judgment. However, these judgments have been questioned in the past. Showas with underlying sumi that forms a reticulated pattern like Goromo are called Kage Showa and are put into Kawarimono class. Go figure.

### GOSANKE

(a collection of Kohaku, Sanke and Showa classes) The first three classes I discussed (Kohaku, Sanke, Showa) are the oldest koi classes to be stabilized and as a group are called Gosanke. Breeders have had 8 decades to perfect the many bloodlines of Gosanke and also 8 decades to perfect the judging criteria for these big 3. Gosanke are highly valued because they have to breed 100,000 babies to get 10 koi with high quality patterns acceptable to the All Japan Koi Show. Again, with rarity and cost comes appreciation and rewards with Gosanke winning almost all of the Major Awards at koi shows. Most of the other koi classes have been stabilized since World War II. Breeders of these koi classes usually get 90 percent or more high quality show koi from each breeding making the koi less expensive and much less rare than Gosanke. One exception is the new Shiro Utsuri (white with black wrapping pattern) and I will discuss this class next. I believe Gosanke, in addition to tradition and cost; also have the advantage of good contrast of color with white as the base that shows of the red and black pattern very well.

### UTSURI

Utsuri are white (Shiro), yellow (Ki) or red (Hi) base color koi with wrapping black pattern forming a checkerboard pattern that starts on the back and wraps below the lateral line. Utsuri were originally stabilized around 1925. Just as the early Showas evolved from the dark, heavy patterns to the modern Showa, so has the new Shiro Utsuri very recently (1990s) evolved to the balance of white and black and from dull sumi to jet-black sumi. The Ki and Hi Utsuri bloodlines have generally not evolved to this balance or to this jet-black sumi. As a result Ki and Hi Utsuri are not as highly valued and their sumi tends to fade away when moved from a dark pond to a blue show tank. They also have a tendency to get scattered sumi specks on their base color making it look dirty. Utsuri also may have the motogoro at the

base of their pectoral fins and sumi in the other fins. Utsuri need to have black on the face sometimes in the form of a lightening pattern down the head. Like the modern Showa, only the new Shiro Utsuri can compete with Gosanke on an almost equal footing. Shiro Utsuri do not have the difficulty Showa have of finishing two colors which gives the new Shiro Utsuri an advantage over Showa in finish but Showa have the advantage in difficulty, rarity and high cost. Many of the comments I made earlier about Showa and also about Gosanke can also be said of the new Shiro Utsuri. I expect to see more Major Awards going to the new Shiro Utsuri in the future.

### BEKKO

Bekko are white (Shiro), yellow (Ki) or red (Aka) base color koi with lacquered sumi spots on the back, like Sanke. Yes, the Japanese have several terms meaning red. Shiro Bekko often result from Sanke breeding but are koi that never developed a red pattern or lost their red pattern. The most difficult and important thing with Bekko is to get a clear, unblemished head with no sumi pattern. The fins are the same as Sanke. Ki and Hi Bekko have the same problem as Utsuri in the tendency to get many small black spots but the sumi does not fade at shows like Ki and Hi Utsuri tend to do. Hi Bekko with this condition are referred to as pumpkin fish (not meant as a compliment). I believe Bekko are not valued because they are culls from Sanke breeding making them second-class. Their appreciation also suffers from not having a head pattern that Shiro Utsuri does have.

### TANCHO

In Kohaku, Sanke and Showa breeding, many koi turn out to have only a single red spot which is on the head. We call these koi Tancho, Tancho Sanke and Tancho Showa respectively and they are shown in Tancho class. The Tancho spot must be between the eyes and preferable perfectly round. It must not go back onto the shoulder of the koi or down to the nose of the koi. Red may not

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appear anywhere else on the koi to be shown in Tancho class. A sumi pattern may cross the Tancho mark on a Tancho Showa. No other variety with a spot on the head may be shown in Tancho class. This includes Goshiki with red spot on the head, Bekko with black spot on the head and Ogon with orange spot on the head to name a few.

### **DOITSU (in all classes of koi)**

Doitsu are Japanese koi crossbred to display the characteristics of the German "leather" carp with no scales at all or with the German "mirror" carp having large scales only along both sides of the dorsal fin or with large scales along the dorsal fin and also along the lateral line on both sides of the koi. Doitsu koi have been crossbred in Japan for most all of the classes and typically compete against scaled Japanese koi in the same class unless there is a special Doitsu class. Doitsu koi can easily have sharp kiwa due to not having scales so scaled koi are given the difficulty advantage in judging. All judging points being equal, scaled koi will beat Doitsu koi.

### **ASAGI / SHUSUI**

Asagi koi have red below the lateral line to the under side, often some red on all fins and the red can come up from the belly to cover the gill covers and to the base of the mouth. Blue color is above the lateral line. The blue color can vary from dark almost gray to a very light blue depending on the bloodlines. The lighter shade of blue of the Narumi bloodline is preferred. The blue color of each scale is surrounded by a lighter ring around the edge of the scale giving a netting appearance which is very pretty when all of the scales line up in straight rows. This last point is very important in judging Asagi. Also, it is difficult to have a clear head with no blemishes so this also is a strong judging point. Asagi were documented over 160 years ago and have evolved to the beautiful specimens we find today. The Asagi is fully scaled.

Shusui is the Doitsu version of the Asagi. All criteria and characteristics of Asagi also apply to

Shusui except there is no netting pattern but a sky blue top half of the koi. It is very important there is no break in the line of mirror scales from the back of the head along the dorsal fin and the scales line up in straight rows. Again, a clear head is very important. It is difficult to keep black spots from appearing on Shusui in hard, high pH water. A Shusui with red almost covering the back above the lateral line is called Hi Shusui. A Hi Shusui with the addition of blue mirror scales on both lateral lines separating the red top and bottom is called "Hana Shusui".

### **KOROMO**

Koromo meaning "robed" is a cross between Kohaku and Asagi. The result is a white base koi with a red Kohaku pattern that has blue edged scales forming a reticulated pattern only on top of the red pattern. Ai Goromo has beautiful blue netting. Sumi Goromo adds sumi spots. Budo Goromo has what appears to be clusters of grapes on the red pattern. There are also crosses of Sanke and Showa with Asagi to create Koromo Sanke and Koromo Showa.

### **KIN GIN RIN**

Literally means Gold and Silver scales. A chemical deposit creates a sparkle effect on each scale. Many of the koi classes have been crossbred to have Kin Gin Rin scales but if a koi has two rows of Gin Rin scales, it is shown in Kin Gin Rin class. Koi with less Gin Rin scales are usually shown in their normal class and the scales may or may not affect the judging. There are four types Kin Gin Rin scales. Pearl Gin Rin has a sparkle deposit in the center of each scale like a pearl. Diamond Gin Rin or Hiroshima Gin Rin looks like brushed aluminum sparkle. Beta-Gin is where the whole scale sparkles and is the most valued type. Kado-Gin has only the aft edge of each scale covered with this sparkling deposit. Gin Rin shows up best on white and red and does not show very well on black. It needs sunlight to be appreciated.

## September 2004

### **HIKARI MUJI**

(also called Hikarimono)  
Hikari means metallic. These are koi with one metallic color. Koi in this class include Platinum Ogon, Kinbo (shiny gold), Ginbo (shiny silver), Orenji (orange) Ogon, Yamabuki (yellow) Ogon and Nezu (silver gray) Ogon. All of those koi are solid color koi with metallic sheen. With no pattern to judge, all you have is a strict requirement for a clear head with no blemishes and a requirement for the color to be consistent from head to tail. The sheen on the fins, especially the pectoral fins, is important when judging ALL metallic koi. Hikari koi seem to have more problems with deformities of the mouth, fins and back than the other classes so look closely when you buy them. Also in Hikari Muji is the Kin Matsuba and the Gin Matsuba that have black reticulation in the center of each scale to form a pinecone pattern.

### **HIKARI UTSURI**

(also Hikari-Utsurimono)

Metallic versions of Showa and Utsuri. Koi in this class include Kin Showa (metallic Showa with golden luster), Gin Showa (metallic Showa with silver luster), Gin Shiro (metallic Shiro Utsuri), Kin Ki Utsuri (metallic Ki Utsuri), Kin Hi Utsuri (metallic Hi Utsuri) and Kage Gin Shiro (metallic Showa with kage sumi). All of these tend to fade out when removed from a dark pond and placed into a blue show tank so they don't show well but will return to their splendor when returned to the pond. All of these also tend to have a dirty sumi look caused by the metallic. Again the clear head and sheen is very important especially in the pectoral fins.

### **HIKARI MOYO**

(also Hikarimoyo Mono)

Koi with two metallic colors like Platinum and red. Koi in this class include Platinum Kohaku, Gin Bekko, Yamabuki Hariwake (yellow and Platinum), Kikisui (literally Water chrysanthemum Platinum Kohaku with wavy red lines on both sides) and Orenji Hariwake (orange and Platinum). Also included with two metallic colors plus black are Kujaku

## SAKA NEWS

(Platinum Hariwake with black pine cone pattern), Doitsu Kujaku, Yamatonsihiki (metallic Sanke), Tora Ogon (Tiger koi actually a gold metallic Ki Bekko), Hariwake Matsuba (Platinum Hariwake with black reticulation). Metallic Shusui are called Kinsui and Ginsui with the former having more red markings. Shochikubai are metallic Ai Goromo.

## KAWAIRMONO

(ALL OTHERS)

(no metallic koi allowed)

We finally get to the end and it is a catch all class for all of the other koi that do not fit into one of the other classes. The list is huge but here are some of the favorites.

Included are all of the Karasugoi or crow carp family that are black with various white markings on the body and fins. Depending on how much white you have Hajiro (black with white only on the tail and pectoral fin tips), Hageshiro (black with white on tail and pectoral fin tips and on the head), Yotsushiro (Hageshiro with all white head), Kumonryu (Doitsu koi with killer whale pattern) and Matsukawabake (koi that changes from black to gray depending on water temperature forming a net black pattern).

There is a very new koi that has been put into Kawarimono due to lack of a better place because it is metallic and does not belong in Kawarimono. This is the Bene(red) Kumonryu called Kikokuryu. It is a metallic Kumonryu with a red pattern. It probably should be moved to Hikarimoyo because the black looks metallic so it has black, white and red metallic colors.

Next in favor is Goshiki meaning 5 colors that are white with a red Kohaku pattern and two shades of blue and black netting not only on the red but also on the white. Cool water makes the colors darken. It is important for Goshiki to have a clean red and white head with no sumi markings.

The next favorite is the Chagoi or brown/green tea colored carp. These koi grow fast and very large and

become the favorite in the pond by their gluttony. Also in solid colors are the Kigo (yellow koi), Soragoi (gray blue koi), Midorigoi (green koi), Benigo (red koi), Aka Hijiro (red koi with white fin tips) and Shiro Muji (white koi).

Next is a very recent cross between Chagoi and Kohaku or Asagi called Ochiba Shigure. This koi reminds people of autumn leaves because the hi shows up as a bright mustard pattern on a gray body with black netting over the whole body. The Doitsu version of Ochiba Shigure has been called "antique" due to the colors.

The next group is the Kanoko group. Kanoko means "fawn" describing a dappled Kohaku red pattern that looks like cherry blossoms. This group includes Kanoko Kohaku, Kanoko Sanke and Kanoko Showa.

The next group are the Kage (robed) group. They include Kage Shiro Utsuri, Kage Hi Utsuri, and Kage Showa.

The last group are the non-metallic Matsuba koi. They are Aka (red) Matsuba, Ki Matsuba and Shiro Matsuba. There are also Doitsu versions of all of the above.



September 2004

## Show Pin



This is the official show pin designed by Norm Call. The show pins will sell for \$7 and you will be able to order them on your show registration form. We are only going to make 100 of the pins.

## 25<sup>th</sup> SAKA Koi Show T-shirt

*Have you thought about getting a club t-shirt for show. Well Noel Shaw is going to make some up. At the September meeting at his house he will have the information on the shirts and the price. It should look great.*



**SAKA NEWS**

*Do you know these guys? They will be in next month issues of our newsletter? Why I don't know?*



**Kawarigo Kōron**

**Special Events  
Coming UP**

**September 26, 2004**  
Noel & Debbie Shaw

**October 3, 2004**  
Show Committee Meeting  
Kino Sport Park  
3:00pm

**October 24, 2004**  
Tom Ayers



**November 12-14, 2004**  
25<sup>th</sup> SAKA Koi Show & Auction  
Kino Sport Park

**December 11, 2004**  
Sharon Faulk

**January 30, 2005**



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

**September 2004**

February 20, 2005

March 5-6, 2005

Koi Club of San Diego Koi Show

March 13, 2005?

April 24, 2005

May 22, 2005  
Faye & Winton Hall

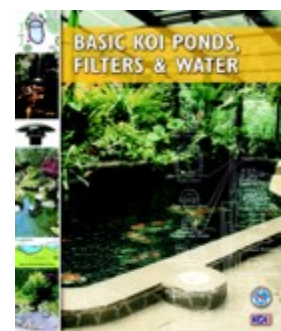
June 17, 2005



24th Annual AKCA Seminar  
Tulsa Oklahoma  
June 23 -26, 2005

26<sup>th</sup> Annual AKCA Seminar  
Arizona  
June, 2007  
Hosted by SAKA & VSKC

We are looking for members to host the open dates. (Contact Tom Ayers) It is a great chance to show off your pond and everybody would like to see it no matter what the size is, big or small.



Both Books are in!!! "Judging and Buying Koi" & Basic Koi

## SAKA NEWS

Ponds, Filters & Water. Please pick them up if you ordered one at the January or February meeting. There are a few books left.

### Club Web site!!!

Come visit it and make your comments. It is your site and I need your help. Go to

<http://sakoia.org>  
Have Fun Surfing it.



Have you got a 25<sup>th</sup> Show pin yet? There are only 100 being made and once they are sold they will be gone. They are only \$7. Get them will you can from one of the show chairs or in your registration packet.

Are you ready for the show?



## Our New Logo



## For Sale

(2) 1/3 horse 4.2 amp Wave II pumps. \$250.00 each, please call David or Debby Young @ (520) 682-7697

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September 2004



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