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June, 2021

By the Pond

Hello everyone!

A special salute and thank you: To all of you who contributed to the recent auction - and for so many of you who went "way beyond", putting in double and triple the amount of work/time needed to make this event possible; Thank you so much.

In-person meetings are finally here! When: June 13th @ 2PM Where: Furkids, 5235 Union Hill Rd, Cumming GA 30040

Discussion: Emergency Power Solutions PLUS How to Measure Pond Volume!

We will have two presentations by Cynthia Landon during this meeting, so come ready to learn as well as meet and mingle with other koi keepers!

****SPECIAL GROW-OUT OFFERING (by The Koi Store) after the presentation!**: After the presentation, Carl Forss (with The Koi Store) will be offering AKC members a special grow-out of some beautiful koi. By attending this meeting, you'll not only walk away with some new knowledge but also have a wonderful opportunity to score some beautiful koi.

Hope to see you at Furkids! Stay safe and healthy, Kevin *Your* AKC VP

Grand Champion Winners by Melanie Onushko

Congratulations to Atlanta Koi Club members Steve and Sandy Zimmerman for winning Grand Champion at The Louisville Koi Show. This 6 year old koi from the breeder Torazo is 37" long!



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Emergency Power Solutions: At some point we will all find ourselves in a no-power situation. For ourselves this can certainly be an inconvenience, but for our precious wet pets it becomes an emergency (and potentially deadly situation) quite quickly! There are many different options for emergency power set ups and some are actually fairly inexpensive. Cynthia will bring part of her set up to the meeting to demonstrate the options she's chosen along with information on some alternatives as well. Your next power outage doesn't have to be a fish emergency!

<u>How to Measure Pond Volume:</u> Many koi pond owners do not know their pond volume, especially if the pond was built before they owned the house. Having your pond metered the first time it is filled is superb but if you weren't around to do that, you still need to know your pond volume! It is particularly important when administering medications or other chemicals. If you don't know your pond volume this could jeopardize the health of your fish... or even kill your fish. There is a way to get a good estimate of your pond size using salt, and we will teach you how! The truth is that almost everyone over-estimates the number of gallons in their pond, and that can lead to deadly overdoses of medication. Don't let that be you! Get to the bottom of your true pond volume, with salt!

Atlanta Koi Club's Annual Fish Auction May 16, 2021

The weather was perfect, and so was our annual koi auction. Many, many thanks for Furkids for allowing us to have our auction at their location. Especially, many, many thanks to each of our members who contributed their efforts to make this one of the best we've had. We couldn't have done it without you!!!!

























By Mike Anger KOI Organisation International

"Water, never touch the stuff, heard Koi spawn in it..." (this is a family web site).

When we examine the health of our Koi, almost without fail predating whatever illness we diagnose is a problem with water quality. We all know this, but all too often we are lulled into a false sense of security because of the clarity of our water and the findings of a normal pH and temperature. Is that all we should be monitoring? Why is it that we spend hundreds or even thousands of dollars on fish, yet we sometimes skip the ten or twenty dollar purchase of an ammonia or nitrite test? Remember that even a crystal clear pond might contain toxic levels of chemicals potentially lethal to your fish, while an algae bloom might look terrible (and make it difficult or impossible to see your fish) but actually might be beneficial to your fish.

Our ponds are artificial self contained ecosystems. Koi are *ammonotelic*, that is the majority of their nitrogenous waste is excreted by diffusion (the movement of a substance from an area of higher concentration to one of lower concentration attempting to achieve equilibrium) via the gills into the water as ammonia. Ammonia is excreted in two forms: NH3 the toxic form, and NH4+ the ionized and non-toxic form. The relationship between these two forms is greatly pH and temperature dependent. The higher (more alkaline) the pH, the greater the amount of (toxic) NH3, while the lower (more acidic) the pH, the greater the amount of (non-toxic) NH4+. The colder the water, the more NH3, the warmer, the more NH4+. Because of Koi's body temperature and blood pH, most excreted ammonia is in the form of NH4+; this can change quickly depending upon the pond environment. Our biofilters become populated with families of bacteria that convert ammonia to nitrite. Nitrite is also a very toxic substance. Unlike ammonia, it does not come directly from Koi, but is formed almost solely in the filter or source of that family of bacteria. Because nitrite does not come from the Koi, when it contacts the Koi's gills it enters the fish by diffusion (again from the area of higher concentration, the pond, into the lower concentration of the Koi blood) binding hemoglobin in blood rendering it unable to carry oxygen. A second population of bacteria grow in our biofilters to convert nitrite to nitrate, fairly harmless to Koi but usable by algae and plants. As the Koi eat the algae and plants, this cycle begins all over again. The bacteria that convert nitrite to nitrate are the most susceptible to aberrations in water quality and are therefore the first to decrease in number.

Causes of excess ammonia and/or nitrite may include overstocking, overfeeding, low oxygen saturation, an undersized biofilter, an immature filter (the bacterial colonies have not increased to a sufficient number yet such as in the spring), a dirty filter, a filter too aggressively or frequently cleaned (especially if tap water is used), or chemical treatments that may harm the bacteria.

Symptoms of high ammonia may include lethargy and red streaking. Symptoms of high nitrite may also include lethargy (sometimes lying on the pond bottom, though swimming up for food before going down again) and flashing.

There are two types of test kits for ammonia, Nessler and Salicylate. The former uses one drop or tablet and the color goes from clear to shades of yellow and red. The latter uses two steps of drops or tablets and goes from yellow to shades of yellow to blue or green. The problem with the Nessler test is that if you are using treatments in the water that bind ammonia it still reads ammonia being present while the salicylate will not. Just use a Salicylate type Ammonia test kit to avoid false readings. Nitrite tests usually will change from clear to purple.

Treatment for high ammonia may include water changes to dilute it, and binders such as ChlorAm-X or Ultimate which change ammonia from it's toxic form to it's non-toxic form. In it's non-toxic form, the ammonia is still present and will feed the filter, but it is not toxic to the Koi. That is why Koi shows use ChlorAm-X or Ultimate plus aeration, rather than a filter. Neither ChlorAm-X or Ultimate can be over-dosed (Koi can live in pure Ultimate!), and an excess just stays in the water, waiting to instantly convert any passing ammonia molecule. These 2 products have been tested and are safe for Koi, while substitutions have been known to cause numerous problems.

Treatment of high nitrite includes water changes, suspend feeding, salt to 0.1% and increased oxygenation. In all cases try to address the underlying cause, especially checking your filter. In the spring check these water parameters with your test kits daily until your bacterial colonies are populated, then weekly, and when stable one each month. These simple precautions may prevent a small problem from evolving into a disaster!

Do you have any special news to share with or our newsletter?

Do you have any surplus equipment to sell? Is there a pressing question to ask of our members? How about some photos of your special project? Are there some critters that visit your pond nightly to snack on a fish dinner?

Please consider sharing your thoughts in our newsletter. Our editor is growing tired of copying and pasting articles from our 1993-1997 issues.

Much honor and glory will be yours if you send an article to editor@atlantakoiclub.org

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Selecting a Good Kohaku...

by Dr. Arthur Lembke (Mid Atlantic Koi Club, 1993 Issue)

Many people have asked me to choose koi for them that I think will become a show winner. For this reason, I am writing a series of articles on what I think people should look for in small koi if they plan showing them someday.

I wanted to write on the kohaku first, because I believe that is the most important fish if you are looking for a grand champion someday. When looking at a large batch of kohakus, perhaps hundreds at a time, the first thing I look for is a white tip at the front and back of the fish. It is very important to have the red on the head of a kohaku to only go down about as far as the nostrils. Do not pick a kohaku that has red all the way to the mouth. Also the head must have red on it. Don't pick a kohaku with an all white head. Kuchibeni (red on lips) is allowed if the spot is small and the other red on the head only comes down to the forehead. Red over the eyes of the koi used to be looked down upon, but in modern times it may come down over the eye. However, the red should only come down over one eye, not both eyes the same time.

The head is generally one of the most important parts in an early koi.Now that I have found several koi with acceptable head patterns. **Many orange-red young kohakus turn a pretty red as they grow.** I look at the rest of the body. As I said earlier, I also look to see if there is a white patch right before the tail. If at all possible, I would like one there, but if all the rest of the koi has positive characteristics, this is not as important as the head.

For the body, I look for red that is balanced side to side and covers about 70-80% of the body. This is so that as the koi grows up, and the white spreads faster than the red, there is still adequate red on the body. I prefer this red on the body to either be in a zig-zag pattern (inazuma), or a three or four step pattern having white creeping up the sides in several areas. These are signs that the red will break up to form steps. If the red is straight with no signs of breaking, the pattern may be just dull as the koi grows.

I also look for koi that are broad at the shoulders and have relatively large pectoral fins. This generally means the koi will grow larger to compete in shows.

When buying young kohakus, don't worry so much about the color. The white should preferably be snow white but may also be pink if it was color fed before shipping. Avoid kohakus with a dirty grayish-white. As for the red, it may be either bright red or orange- red. Many orange-red young kohakus turn a pretty red as they grow.

Next, make sure there are no red or black marks on any of the fins. Also, make sure there are no black marks on the body. All red on the body should also be in sizable patches, not in single scale areas (i.e., small red spots).

Last but not least, take the koi out in a show tub and check for any body defects or any signs of disease. If these exist, do not buy the fish no matter how nice it looks. I hope this information can give you some help in selecting kohakus. Who knows, in 7 years you may have a grand champion.

Minimalism in "Ponditure"...or "A Koi Pond for under \$500"

by Dan Jacob...Santa Clara Valley Koi Club (1993)

During a pond preview for the open houses, I was asked to write a short article about my pond system. The implication was that my pond was probably the least expensive pond one could build which can support up to 7 or 8 large koi. I never really summarized the expense involved in building the pond, so writing this article will be a revelation for me too. My pond system consists of:

1. A pear-shaped hole in the ground, about 13' long & 7' wide, 18" deep at the center with a 9" X 9" step all around the hole for the purpose of holding planters. The pond volume is about 800 gallons.

2H The hole is lined with a 20mil PVC liner. Underneath the liner I spread a 1/2" layer of wet newspapers to protect the liner from sharp objects in the ground.

3. A chain of flat, smooth stones surrounds the pond & covers the edges of the PVC liner.

4. For the pump I used a 1 /614P Little Giant submersible pump which rests on the 9" step & pumps the pond water to the biological filter.

The pump is located at the end of the pond farthest away from the filter. The pump outlet is fitted with a 1" diameter PVC pipe which is led around the 9" ledge in the pond towards the filter.

5. The biological filter is an upflow fitter made from a 100 gallon Rubbermaid tank. The filter media is unique: Vs made of four roils of 10' X 25' 4mil polyethelene sheet cut up into 1" wide strips. More still to be said about this later. The filter outlet is 11/2" PVC pipe gravity fed to the pond.

Let's see what this cost so far

Pond liner	135.00
Stones	100.00
Tank for filter	100.00
Pump	70.00
PVC pipe & fittings	35.00
Plastic sheets for filter media	25.00
Grating to hold media	5.00
Total	\$ 470.00

Did I spend any more than the total so far? Yes, I did, and unnecessarily. I spent quite a bit on water plants, for example. A water lily costs about \$25, & I bought 2. I spent \$30 on snails! A silly thing to do.

Now I have a million little snails (they're all tiny & don't bother anything) & I'm trying to give away most of my divided water lilies. So there's a hint on how to stock up on water plants...join a garden or Koi club & hang around for a while, & you'll be sure to end up with enough free water plants. Every spring I have to throw away a bunch of overgrown aquatic plants.

But let me tell you just a bit more about expenditure: you must be ready to expend a lot of "shoulder grease" (otherwise called "energy"), and tolerate a good dose of frustration once in a while. But even those who spent monetarily 10 times the amount I did have the same kinds of problems: pea-soup water, little mishaps like pump failure, overflows, leakages, filter blockages, cracks in the pond walls. etc....

A few words about the filter media briefly mentioned above. I first got the idea about using strips of polyethylene for filter media while browsing through the fish section of a pet store. On the shelf there were bags of what looked like cut-up strips of thin plastic selling for lots of bucks. If I remember correctly, it must have been around \$40 per bag, each bag being about a gallon. It dawned on me that anyone could cut up their own strips of plastic, and I did exactly that! Each roll of 10' X 25' of polyethylene amounts to 500 sq. feet of bacterial real estate. The 100 gallon tank needed 4 such rolls - total real estate for bacteria = 2,000 sq. feet! After cutting up the rolls into strips (here's where shoulder grease comes in), I ruffled up all the strips so there wouldn't be any strips clinging to one another. It turns out that there is no channeling in this type of media! The media is so light that it actually floats in water, so I have to weigh down the media with stones. The media thus is in suspension in the water which lets it remain loose without compacting. Furthermore, it is quite easy to clean the filter; the media can be taken out quite easily, and the interior of the filter is totally accessible. Of course, I don't wash down my media because it contains all the precious bacteria costing about \$.0000000001 each.

All in all I enjoy my pond immensely. Every morning, while I'm putting on my shirt in the upstairs bedroom, I gaze with awe at my aquatic friends which somehow seem to be magnified, viewing them from up there!