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May, 2021

By the Pond

Thank you to Jim Dricker and Elaine Zitomer for stepping up to do the Friday night security - they are life savers!!

Also, a huge thank you to Ed Munday for offering to move the trailer from the auction site to the storage facility in Lawrenceville - it is very much appreciated.

And, thank you to everyone that stepped up to volunteer at the auction. The auction can't be done without a lot of help. There are still slots available if you can help. Here is the link: <https://www.signupgenius.com/go/4090445a5a629abf49-2021>

I'm sure that everyone is already aware, but just in case please note that auction is NOT at Coastal this year. We are at Furkids in Cumming, GA. More info follows

Two photos of our new auction location.
Furkids at 5235 Union Hill Road, Cumming



New Koi Auction Location

This May 15th, our Koi auction will be held at Furkids
FurKids is located at

5235 Union Hill Road, Cumming , GA 30040

For old-timers, this was once the Wahoola Water Garden. It had gone out of business several years ago, and now is the home of FurKids. Furkids is a rehab and medical center for cats. (It's funny to have a fish show at a cat center!) Furkids has done a good job at bringing back the old grandeur that once was.

It's about 11 miles north on 400 from Holcomb Bridge road Turn West at the McFarland exit and then right turn onto Union Hill Road (note that Union Hill road turns left after first stoplight from McFarland.) It's the old Wahoola water garden, now a cat sanctuary. It still has Koi in its ponds

VP's Report

BIG Upcoming Weekend Event (Saturday, May 15th) for our Atlanta Koi Club! May 15th is the annual AKC Auction which, as many of you know, was postponed and rescheduled due to inclement weather. If you have the ability and open schedule to volunteer, please, we're only asking for a few hours of your time to help to make this auction a success.

As I type this input, I must also apologize that I won't be able to assist during the rescheduled auction as our family will be traveling. We're hoping someone reading this will be able to step up and donate some time in our absence.

Even donating just a few hours of your time really goes a long way. If you haven't yet volunteered for any of the events and want to help, please volunteer via the following Sign Up Genius link:

<https://www.signupgenius.com/go/4090445a5a629abf49-2021>

For those wanting to sell fish, please register here (under seller registration) :

<https://atlantakoiclub.org/auctions>

Lastly, our previously scheduled club meeting for May has been cancelled to accommodate for the requirements and volunteer efforts needed for the AKC Auction. With that, we're planning our first in-person AKC meeting in June! Aside from the upcoming auction on May 15th, the upcoming June meeting will be the first official "in-person" AKC meeting in well over a year!

More details to follow in the coming weeks!

Stay safe and healthy,
Kevin
Your AKC VP

For Sale by Club Members

GC Tek Zapp Pure ZP-20 UV - \$300

Needs new bulb (\$199.99), ballast (\$169.95) and maybe quartz sleeve (\$144.95)- retails for \$1,559.95. Replace part costs are from GC Tek - you can get less expensive parts online....(contact Bob Chaffer for information)

Specs as follows:

High Intensity-70,000 microwatt output.

316 Stainless Steel- not 304 like most stainless units.

Longlife Electronic Ballasts.

Optional GFIC protector.

Long 12' cord or longer by special order.

2" inlet/outlet.

4" Diameter keeps the water close to the lamp for maximum kill in a single pass.

4" Diameter vessel is the perfect size for no restriction flow.

Quartz Sleeve LeakTite fitting is all stainless, including the lock down nut - not troublesome plastic like some units.

Lamp changing is easy - takes only minutes.

Adjustable pressure switch equipped for automatic easy on/off as flow demands. **If your pump fails this unit shuts off so you don't cook it.**

Pressure switch bypass button equipped for easy testing of lamp and ballast.

Can be mounted horizontal or vertical.

Polished inside and out for maximum effect- some stainless steel UV's are polished only on the outside.

ZAPP 20.....43 in. tall....for ponds up to 20,000 gal. with optimum flow rate of 6000 gph.

Draws only 86 watts

Contact Diane Giangrande @ dianewg@aol.com

Congratulations to Atlanta Koi Club Award Winners

Congratulations to Atlanta Koi Club members who won major awards at the ZNA Northern California koi show in San Jose.

Bonnie Glefke-Adult Champion, Sanke-Size 6

Margy McManus-Mature Champion B, Hikari Utsuri-Size 7

Chad Bishop-Show Chairman Award, Kawarigoi -Size 6

Chad Bishop-Euregio Koi Society-Kawarigoi-Size 6

Proud to have you all representing The Atlanta Koi Club!!!

Melanie Onushko

Springtime – Why Water Temperature Matters. Edward Broomfield

Koi Organisation International

It is springtime, a season of hope, and your excited about your pond is coming back to life. Springtime is also one of the most perilous times for Koi. This article will discuss what happens as water temperatures rise, what to lookout for, and how to prevent springtime problems.

First, we need to understand a Koi's environment. There are differences between the water environment and terrestrial world. As compared to the terrestrial environment a pond's ecosystem is low in dissolved oxygen, (14 mg/l vs 260 mg/l). This low dissolved oxygen necessitates most pond organisms to be ectotherms (cold blooded). Additionally, a pond is temperature stable. Temperature stability means that water temperature experiences a smaller diurnal effect than the terrestrial environment. Diurnal effect is the change of temperature from the daytime high to the nighttime low. For example, the terrestrial environment may experience a 30°F effect while your pond may only experience a 2°F difference. Diurnal effect is most significant in shallow ponds located in hot climates. This temperature stability has allowed for the evolution of larger cold-blooded (poikilothermic) species such as our beloved Koi.

A pond's environment is continuously in flux always striving to achieve equilibrium. Whenever one thing changes it affects the entire system. For example, when water temperature rises both pH and dissolved oxygen change. This brings us to water chemistry. pH is temperature dependent meaning that as water temperature changes, so does pH. As water temperature rises pH drops and then increases when temperatures recede. Dissolved oxygen levels are also temperature determined. As water temperature rises dissolved oxygen falls. At 45°F (7°C) dissolved oxygen will be 12 mg/l but will be only 8mg/l at 80°F (26°C). During winter, water temperature does not vary much. However, in spring, the water environment undergoes significant changes. These changes can have a profound effect on a Koi's health. In spring, temperatures start to rise and the pond experiences wider diurnal effects.

In summary, a pond water environment has the following characteristics.

- Ponds are low oxygen and temperature stable.
- pH is temperature dependent.
- As water temperature rises dissolve oxygen decreases.
- Most pond organisms will be cold blooded. Because Koi are cold blooded, their metabolism is directly dependent upon water temperature.

As temperatures drop a Koi's metabolism slows and certain functions, such as immune response will become ineffective by 47°F (8°C). When a Koi's immune system is compromised, it has limited ability to respond to stress. Changes in pH and dissolved oxygen are stressors for Koi. Springtime water parameter changes by themselves are not deadly but it challenges their already immune compromised body. Additionally, a Koi's digestive system utilizes bacteria which are also temperature reliant. Although aquaculture research suggests that some intestinal bacteria will stay active during cold periods. For all practical purposes, digestive bacteria have become mostly inactive by 50°F (8°C).

Key points about Koi metabolism:

- Koi metabolism is directly dependent upon water temperature
- A Koi Immune system begins declining at 61°F (16°C) degrees and is ineffective by 42°F (6°C)

- Their digestive system bacteria become mostly inactive by 50°F (10°C)

There are other life forms floating around in our ponds, some of them are beneficial for the Koi and other are not. We refer to these as critters and varmints. First are the critters know as nitrosomonas and nitrobacter (there are many, many different bacteria involved, but we will simplify by just discussing these two) which are considered oxidizing bacteria. They are everywhere in the pond and establish large colonies in our bioconverters. These bacteria perform a two-stage process converting ammonia into nitrate. As we reduce feeding in the fall, these bacteria go into dormancy by encapsulating, and will not recolonize until spring. The recolonizing begins when the water temperature warms, and we feed the Koi and ammonia is reintroduced into the pond as metabolism byproduct. Reestablishing a bioconverter colony takes up to 30- days. To avoid toxic ammonia levels, start feeding small amounts until the colonies reestablish.

Now for the varmints. These are all the viruses, bacteria and parasites which can harm your Koi. They come with many scary names; Aeromonas, Pseudomonas, Costia, gill flukes, white spot, etc. I left off viruses as they should be discussed in a separate article. Each of these species have different temperatures at which they become active. But it is safe to say that they are all becoming active by 50°F (10°C) and will continue to be so until water temperatures cool. The biggest risk to Koi is that these varmints become dangerous to Koi while their immune system is still compromised by cold water. Their immune system will not be fully functional until water temperatures reach 62°F (16°C). The best defense during this vulnerable period is to maintain pristine water quality, limit feeding and adhere to strict biosecurity standards. This is no time to be adding any plants or fish to your pond no matter what the Koi dealer tells you.

Here is a short list of things to remember about critters and varmints.

- The harmful organisms (bacteria, viruses, and parasites) become active at 50°F (10°C) and a Koi's immune system is not capable of fighting them off until 62°F (16°C).
- The good bacterial colonies of nitrosomonas and nitrobacter will encapsulate in cold water when feeding is stopped and will not resume until the water warms and we restart feeding our Koi.
- Nitrosomonas and nitrobacter colonies take approximately 30-days to establish.

Here is how to avoid springtime problems.

- Maintain pristine water quality.
- Thoroughly clean pond filtration. • Start feeding small amounts and slowly increase feedings over a 30-day period.
- Maintain strict biosecurity – Do not add anything to your pond during spring.
- Observe your Koi for unusual activity, inactivity, or injury.

Source Materials Spike Cover – K.O.I. 206 Koi Physiology Duncan Griffiths – K.O.I. 207 Diagnosis & Treatment Spike Cover – K.O.I. 208 Biosecurity, Quarantine & Record Keeping Syd Mitchell – K.O.I. 303 Advanced Koi Pond Filtration

How to Deter Herons

With permission by **The Pond Guy** www.thepondguy.com

The great blue heron is well known to many pond owners that stock their pond with fish. While they are easy to spot with their blue-gray plumage, black stripe over their eyes and a thick dagger like beak, they are not easy to keep away from your pond.

Breeding Season

These protected birds can be seen throughout the year here in North America mostly soaring through the air with their 6-foot wingspan and 4-foot long body. Great blue herons can be seen together during the mating season that ranges from the beginning of September and October with a return in Mid-March through June, however when it is time to find food they fly solo.

Hunting Techniques

A common hunting technique is to soar through the air looking for a quick bite to eat, usually in wetlands or ponds and lakes. They prefer to sit motionless along shorelines or in shallow waters and wait patiently for a snack to swim by. Another technique is to walk slowly flushing out any potential prey that may be hiding with their feet.

The great blue heron is an intelligent bird so you will need to get creative when it comes to encouraging them to hunt in a different location. Here are some tricks to try:

Decoy: The first line of defense should be when a heron has yet to discover your pond and should only be used after mating season. The theory is that herons often hunt alone and do not want to fight for their fishing spot so if they see a **heron decoy** near the pond, they will seek an alternative body of water. Remember herons are very intelligent and will catch on quickly if a decoy stays in one spot for too long so keep it moving to keep it guessing.

Add Movement: Adding an **aerator** or a beautiful **fountain display** can do more than adding oxygen to the water and setting a pretty scene. The added movement in the water can challenge the heron's sight when flying above.

Create an Illusion: Herons will typically fly over looking for shallow water to wade in and look for fish. Adding a little bit of **pond dye** can create an illusion that the pond is deeper and will make it harder for fish to be seen from a long distance.

Provide Hiding Places: Just in case a heron chooses your pond for its hunting grounds, give your fish a place to hide. **Fish habitat** like the Honey Hole Shrub or Fish Attractor Spheres can provide an added layer of protection.

Create Obstacles: Herons have the tendency to land around the perimeter of the pond and walk up to the water. Obstacles, like the **Heron Stop** make access difficult by creating an impassable barrier up to 40' of shoreline, without obstructing the view of your pond.

Scare Tactics: Startle herons and other predators to scare them away with a spray of water using a motion-activated sprinkler can protect an area up to 1200 square feet, connected to a garden hose and powered by a solar panel; motion sensors trigger the stream of water.

Cold Weather Relief: Herons are migratory birds, and they have no appreciation for cold weather. So if you're located in the cooler northern climes - particularly where ponds tend to freeze during the winter months - you'll usually notice their absence when temperatures start to drop. Like many of us would like to do during winter, herons that choose to migrate will head for Central America and northern South America to warm up and fill up on fish. If you live in warmer portions of the United States, however, you may see herons all year 'round, provided there's enough open water and food to keep them happy.

As you can see there are many tactics you can use to your advantage in protecting your fish from herons. We recommend using a variety of methods to discourage them from landing on your property because eventually, they will figure out they won't be harmed

Because of its importance, the following is a repeat from last month's Newsletter.....

The 2021 auction has been rescheduled to May 15th . Having missed the auction last year it's important for the club's financials that this year's auction is a success. As always, we need volunteers in order to make that happen. We are going to require that masks be worn and do what we can to social distance.

To volunteer, please use Sign Up Genius - <https://www.signupgenius.com/go/4090445a5a629abf49-2021>

For those wanting to sell fish, please register here: <https://atlantakoiclub.org/auctions> under seller registration.

If you want to sell fish at the auction, you will need to register. The link to register is: <https://form.jotform.com/70255302898157>

There is a 2 tank limit per member/household. Details can be found here: <https://atlantakoiclub.org/auctions>

For the 2022 auction (next year, not this year) there will be a change to the active vs non-active member classifications. The new rules are below.

Who can sell

Club members may sell koi, goldfish, plants or used pond or garden equipment. There is a limit of one seller per household. Active members are classified as those who: hold an elected or appointed position, host a meeting, or have volunteered for at least 6 hours at Club events. Events include the auction, show and pond tour in years we have it. Also, speaking/presenting at a meeting will count towards the 6 hours. Membership must be current and the Membership Chair will determine eligibility of members who wish to participate. Members who do not meet the above requirements will be considered non-active. Any exceptions will need Board approval. Non-active members will be able to auction fish, plants and equipment at a reduced percentage. Non-members will not be able to have fish auctioned or sold.

Percentage of Sales

All sales are divided into the following classifications. Active members will receive 75% of any sale with 25% of any sale going to the club. Non-active members will receive 50% of any sale with 50% of any sale going to the club.

If you have any questions or need help with the Sign Up Genius, please let me know.

Thanks to everyone that has already signed up to volunteer at the auction - it is very much appreciated! There are still slots available and we really need the help. You can find the Sign Up Genius here: <https://www.signupgenius.com/go/4090445a5a629abf49-2021>

Also, if you want to sell fish at the auction, and haven't already done so, please sign up for a tank (limit 2 per person) here: <https://atlantakoiclub.org/auctions>

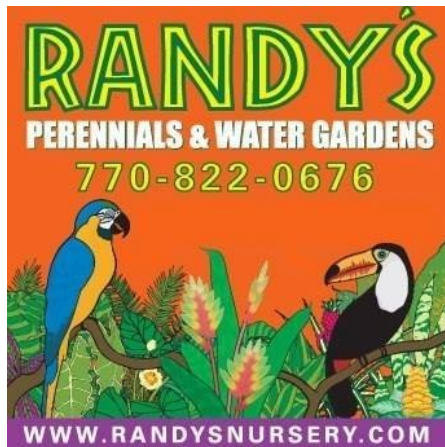
If you have plants or equipment to sell please make sure they are labeled with your name and selling price.

Thanks,

Diane

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(For our newer members who are unfamiliar with preparing your fish for transportation to the Fish Auction, following is a reprint of our article from a recent Newsletter.....)

Koi Transportation

(How to Move Koi from here to there)

by H. Gene Ewy, MD

Reprinted from the AKCA 17th Annual Seminar

(Reprint from an Atlanta Koi Newsletter of 1998)

Koi Isolation and Handling

When a koi hobbyist wishes to closely inspect or move koi from a pond, the specific koi must be isolated and guided to a specific container. A good quality koi net with knotless fine mesh and the circular frame totally covered is commended to minimize the risk of damage to the koi. The bay depth should be shallow. The koi net should be as large as possible (depending on the size of the koi) though large nets are more difficult to move through the pond water, particularly if the net has a telescopic handle and it is extended.

Take it easy, don't get the koi or yourself agitated. Don't agitate or stress the remaining koi. It's risky to approach the koi from the tail, as the caudal fin may be damaged while the koi responds vigorously to the net touching its tail. Minimize the net contact with the koi. Ideally approach the koi from the front, getting the net under its head and gently guiding it into a floating tub or tank.

One advantage of the koi net is that a single person can guide the koi into a floating tank. The rim of a large koi net (guiding a koi to the floating tank) is used to submerge an end of the floating tank. The koi is then guided into the floating tank. This maneuver is easier if a second person appropriately submerges the floating tub or tank. A single person can also bring the koi in the net adjacent to a floating tub or tank. The net is controlled by one hand which has been advanced on the pole to a position near the net. The floating tank or tub is submerged with the other hand and the koi is gently guided into the container. Don't lift the koi from the water with the net, particularly larger koi.

Koi can be collected from a smaller pond readily in the manner described with a koi net. A telescopic pole will allow the net to isolate koi in a larger pond. If this is not practical consider PTTN - patience, time and two nets. The second koi net handler gently guides the selected koi into the koi net of the primary handler, who guides the koi into the tub floating tank.

If your pond doesn't lend itself to any of the above methods, a seine may be used to partition the pond into areas from which the koi may be collected. The mesh of the seine should be knotless. The seine should be longer than the width of your pond. The width of your seine should be greater than the depth of your pond. The seine should have floats the top and weights at the bottom. Koi are not lifted with the seine.

Koi Handling - Short Distance Moves

The koi that have been isolated and guided to a container are ready to be moved. This can be accomplished in a number of ways. If the koi is in a tub in the pond with enough water in the tub to cover the koi, the tub containing the koi can be lifted from the pond. The tub or other container in which a koi is being carried should be covered. A mesh cover, a solid cover or plastic bags on the surface of the water can be used. The container with the koi can be carried by hand, placed on a cart and wheeled, or the container itself may be on wheels. The koi should be transferred promptly to the destination water isolation tank, show tank, etc.).

Koi sock nets are open ended fine mesh nets attached to a circular covered frame with a relatively short handle. The net is much longer than the diameter of the opening (42 inch sock net with an 11 inch diameter opening as an example). The koi is brought through the opening of the net head first by carefully advancing the net over the head of the koi or by manipulating the head of the koi into the net with your free hand. the koi is positioned in the body of the net, the end of the net is closed by one and of the holder, the other end of the net is folded over) retain the koi, the hands are held tightly tautly apart as the koi is lifted from the water and transferred for hopefully only a short distance. A head first exit of then koi from the sock is preferred to avoid unlikely, but perhaps possible, fin or scale damage. Some mucous may be lost from the skin. This is a safe method to distance move koi short distances.

I prefer to use plastic bags for most short moves. Double plastic bags (one bag inside another) should be considered particularly for larger koi for safety. Three mil and four mil bags are quite strong. Bag size depends upon the size of the koi. Fish should be carried horizontally. Small fish may be carried in the small end of the plastic bag with the bag held upright. Large koi may need to be carried with the bag horizontal and held tautly between both hands. The largest koi may need to be carried by two handlers.

The top edge of the plastic bags should be rolled over. This results in a large relatively fixed orifice which frees one hand that can be used to direct the koi head first into the bag. Some pond water should be in the bag when the koi is gently introduced. There should be enough water in the

bag to cover the gills of the koi as the bag is carried to its destination. A head-first exit from the bag is ideal but I think the smooth plastic surface allows a tail first exit with negligible risk if done carefully. If the opening into the bag is large enough the koi can be lifted out by hand. For a short move without adding transfer water to the destination tank consider transferring in a plastic bag with a corner cut out to drain the water.

I have noted from a UK publication (Koi Health Quarterly) an instance of torn plastic bag from the dorsal fin of a koi. From both a UK publication (Koi Kichi) and a Japanese publication (Rinko) recommendations are made to remove a palpable 'hook' on anal fins of larger koi which may tear a plastic bag. If this could happen it would be an added reason to double or triple bag larger koi.

Moving koi by hand is best reserved to transfer koi from one container to an immediately adjacent container. Koi have a slick slime coat, they may be quite active, and they can be dropped. Dropping koi is not recommended. The handler's hands should be thoroughly wet. No hand-held jewelry should be worn. The koi may resist movement in a direction that it is not going and become agitated.

If it is difficult to place your hands under a larger koi in the proper position for support of the koi during transfer, considering taking advantage of the temporary disorientation produced when rotated in a clockwise or counterclockwise direction for a few turns. If going clockwise, the handler should place his right hand across the left hand and shoulder area and support the under surface of the Koi just back of the head with his right hand when the Koi is facing at eleven or twelve o' clock. Continue the clockwise rotation with the right hand, place the left hand under the posterior aspect of the Koi when the head is at four to six o' clock. Lift the Koi from the water. Bring the head close to your body for control, move your hand with the Koi if it moves as you deliberately and promptly transfer the Koi into the adjacent container.

Preparing Koi for Transportation

Stress during Koi transportation should be minimized as much as possible. Stress may lessen the effectiveness of the Koi's immune system. The possibility of infection or other health related problems which could be transmitted to other Koi in your pond is enhanced.

Koi should not be fed at least three days and possibly seven days before transport. The production of ammonia during transport is reduced and the transport water is not polluted to the extent that it would if the Koi had been fed during the fasting period. Koi may be eating algae from the pond wall during the fasting period when they are not fed. If an iso-lation tank with an adequate water volume and an active biological filter is available the Koi could be in this tank at least during the last part of the fasting period.

Additives to the isolation tank water could be salt, mineral salt or various medications. Be accurate and do not over-medicate.

There will be less stress when the Koi is in a dark environment during transport. Transport water can be cooled to reduce metabolism. Mild sedation should be considered.

Long Distance Transport

In general, Koi may be transported for many hours safely in plastic bags or rigid containers. The development of the plastic bag had an immense impact allowing safe worldwide Koi transportation.

Transporting Koi in Plastic Bags

It's time to get physical again. We're going to put our Koi in plastic bags for transport. There is a wide choice bag size and thickness. The bag should be longer than the rectangular corrugated Koi box or any other container into which the bag will be placed. This allows secure closure of the bag, using most of the length of the box.

Double plastic bags should be used placing one bag inside the other. Large Koi transported long distances by airplane within the USA or from overseas may be within the inner bag of three to five bags. It is helpful to roll the mouth of the bag down before placing the Koi into the plastic bag.

This produces a relatively fixed opening and keeps water from going between the bags. Put some water from the pond, or water prepared specifically for the transport, into the bag.

The Koi is put into the bag by hand transfer or by using your free hand to direct the Koi into the bag. Usually one koi 18 to 20 inches in length is placed in a bag, perhaps two 5 to 18 inch Koi are placed in the same bag, etc. The gills should be covered with water, I prefer to add enough water so that the Koi can float, and not rest on the bottom of the box.

Some hobbyists and dealers put additives in the transport water. This includes such things as salt, mineral salt, antiparasitic medication, antibacterial medication, etc. If you choose to do so, do not overdose. Prepare the transport water accurately and add it to the bag. Transfer the fish into the bag by hand, sock net, or bag with a corner cut out to drain the pond water from the bag so that the mineral water will not be added to the transport water. The transport water will not be significantly diluted.

The bagged Koi is placed in a corrugated rectangular Koi box, Styrofoam box, polystyrene box, ice chest, etc. The length of the box is usually two times the width or height. The width and height are normally similar.

Newspapers are often placed in the bottom of the Koi box for insulation. I won't say that Japanese newspapers are best, but the Koi I have received directly from Japan have been calm and happy.

Look closely at the bagged Koi in the transportation box. If water needs to be added or removed, do so. Remove all air from the bag by carefully compressing the bag down to the water level. Pleat the plastic bag near the mouth of the bag so no air reenters the bag. Insert the hose from the regulator (attached to an oxygen cylinder) through the mouth of the bag. Slowly fill the bag with the pure oxygen to about three fourths full and withdraw the hose. Twist the neck of the bag closed so that no oxygen escapes. Fold the neck of the inner bag over and secure it with rubber bands tightly placed over the folded neck. Use two rubber bands for safety. Seal the outer bags in sequence in the same manner. Insulating material (usually newspapers) is placed over the bag in the box and the box is sealed.

If one wishes to gradually lower the water temperatures in the bag during transit, place frozen reusable freeze packs on top of the bags before the newspaper insulation, support the bottom of the cardboard box when it is being carried.

Place the transport box or other container holding the bagged Koi in transport vehicle sideways to the travel direction. Braking during transit would then move larger Koi sideways and would not bang their nose or tail against the end of the box.

Moving Koi in Transport Tanks

The other common method of moving Koi long distances is in transport tanks. Many varieties are used: 1) flexible liners such as vinyl coated industrial fabric liners in a rigid frame made from PVC, tubular steel or other material, 2) polyethylene tanks, 3) fiberglass tanks, etc. The tank must have a secure cover to retain water and the Koi. The zippered covers with vinyl tanks allow easy closure and access. The size of the tank is determined by the type of vehicle and the amount of weight that can be safely carried in the vehicle. Water weighs over eight pounds per gallon and there are seven and a half gallons in a cubic foot of water.

My transport tank for a station wagon measures 3 foot by 4 foot wide, and is just over 18 inches high. Usually we carry 10 inches of water, which is 75 gallons weighing 625 pounds. Obviously transport tanks in trucks can be much larger, carrying more water and fish. All tanks must be stabilized so they will not shift during transport.

The transport tank water should be oxygenated before Koi are added and the dissolved oxygen in the water should be maintained at about 8 parts per million, or over. Pure oxygen can be diffused into the water easily using an oxygen tank with a regulator through an air stone or a fine pore diffuser for pure oxygen. The advantage of a fine-pore oxygen diffuser would be a smaller bubble size (approximately 0.5 to 2 mm diameter) which would increase the total surface area per unit of oxygen. Oxygen saturation is maintained with a slow flow rate. This system is used worldwide with great success.

Air, which is 21% oxygen, can be introduced into the water through an air stone (approximately 1 to 3 mm diameter bubble size). The flow rate would have to be significantly higher than the flow rate of pure oxygen to maintain the same oxygen level in the water. The source of air could be from a 12 volt portable piston or diaphragm compressor operating from the car or truck battery during transit. An adapter from the cigarette lighter socket is used. If the tank is to be aerated for some time when the power source is not from the vehicle's 12 volt battery, a 12 volt marine or deep cycle battery (larger capacity) could be used as the power source.

Members of the Louisville Koi Club have developed and use a nice transport tank system utilizing a 12 volt submersible bilge pump which pumps about 500 gallons of tank water per hour through a spray bar through aeration. They have kindly shared this system with a number of Koi hobbyists.

Why and How We Should Quarantine

(From Atlanta Koi Club Newsletter– 1995)

Spring is in the air, birds are chirping, and the fishies are up. As every red blooded Koi Kichi person is contemplating, "What fish should I get next"? We have an Auction and Sale coming up very soon and there will be some keepers there for us to add to our collections.

Before you take that new Hi Utsuri home we need to talk about the Big Q. That's right Quarantine. Quarantine is the best known method to reduce disease introductions. You gotta do it. There are several reasons to quarantine "ALL" new fish. Here are a few for consideration:

The new fish "WILL BE STRESSED" and very susceptible to disease and parasite attack.

Second, you do not want to subject your collection to an outbreak of any kind that the new guy may bring to your pond.

Third, even though your pond is very clean of what you think are all those bugs you don't have, the new little fishie has not been subjected to whatever you have living there. On top of the stress of the auction, the ride home in a plastic critter receptacle, the new surroundings, and if you just float the bag and drop it in, utsuri will not be given the best chance for survival. We want the best chance to survive.

What is a Quarantine Tank?

Ideally, you want a tiny little version of your pond. You will need to have a pump, filtration, aeration, a net to cover the tank, a small aquarium heater, and do not forget to conduct water changes often, along with religious daily testing. Things you utilize for you Q tank "SHOULD NOT BE USED" in your regular pond. (Cross Contamination and stuff). What size tank you say. That depends on how many fish you buy at the auction and how big they are. In a pinch, a 50 gallon garbage can will do (cleaned and disinfected of course). Most feed and seed stores here in the south sell Rubbermaid 100 gal feed tanks fairly cheap (\$73). Larger containers of course are better depending on the size of your new fish. You can even put small fish into a 30 to 40 gallon aquarium. Whatever works. The Important thing is that you have near-perfect H2O conditions all the time.

What Kind of Filtration?

The filtration need not be sophisticated. Small filters can be obtained from most pond supply dealers. It should have a mechanical section to filter solids, and a biological section to clear ammonia, and convert nitrites and nitrates. The tricky and time consuming part is to have a cycled filter before your fish get home. Think about adding some filter medium from your existing pond. Many hobbyists run their Q tank all the time to keep the filter cycled just in case they just cannot live without that sanke in the window.

Adding a pond fish to the Q Tank.

It has been proven that a good practice is to place one or two small koi from your pond into your Q tank to help cycle the filter and to introduce your pond conditions to the new fish. Use one that you would not mind losing just in case.

How Do I Treat The New Fish?

Once you get home with your new additions, again do not get into a big hurry. Don't start throwing a lot of chemicals on top of your very stressed-out, new and expensive fish. When you get the fish home, float the bag for at least 30 to 45 minutes before you add to the tank. Do not dump the bag contents of ammonia, poop laden water into your pristine Q tank. Have a cover for the tank to protect from jumpers and you may even want to float a large piece of Styrofoam to give a hiding place for the fish. (It makes them feel warm and cozy)

LET THEM REST for a few days. Observation of the new arrivals is a very good practice. The tank should start out with a very light salt load if any. May be less than .1% and then over the next week or so push the salt up to .3%. If you plan to treat with Proform C, salt will need to be zero. Please don't dump the salt into the tank and risk burning your fish. If rock salt touches their skin it will burn. Dissolve the salt in a bucket and distribute around the tank very S-L-O-W-L-Y. Do not feed for the first two to three days. When a fish is under stress they will expel the food not utilize the food for nutrition. Let the fish adjust first, they won't starve.

If you do not have a microscope to check for parasites and treat specifically, we must assume they have everything. Doc Johnson has a "Shotgun Treatment" that he recommends that won't hurt the fish. This is his recommendation slightly modified.

(1) Temperature should be 72 to 78 degrees in quarantine. Warm the fish no faster than one degree per hour, up to the mid seventies, or if you want to combat Koi Herpes Virus, use the same "one degree per hour" heating from their ambient temperature up to 86°F for four days with seven days being better. Heating your fish to 86 degrees will also kill Ick and ends bacteria overgrowth. Make sure you have plenty of O₂ in warmer water.

(2) PH must be buffered. Small Q tanks are subject to PH crash. (Check Daily along with ammonia.)

(3) After two to three days and if you wish to treat with the broad spectrum Proform C, treat per instructions. 24 hours after the last Proform treatment then treat with salt.

(4) Salt to 0.3 to 0.6% over a period of several days.

(5) Feed Romet or Medikoi food. It will help control bacterial infections. (No longer sold- ed)

(6) The Q tank can be treated with Dimilin, even with salt, to handily control comparatively rare but large parasites like Anchor Worms and Fish Lice.

(7) Prizi or Prazi containing medications control of Flukes on Koi. A Formalin treatment on the way into the quarantine where the above will be applied will break the lifecycle of Costia and prevent it emerging in the quarantine tank.

(8) Small and numerous Water Changes are a definite requirement.... 10 to 15% every other day, maybe. (Don't forget to replace the % salt after the water change)

Finally, Quarantine should last for at least 14 to 21 day after you complete treatments, so long as with water changes the water quality can be properly supported. Watch your fish for signs of stress or disease during the process.

Quarantine is an essential part of our hobby. Enjoy!

Koisan Joe

Furkids

5235 Union Hill Road, Cumming , GA 30040

For old-timers, this was once the Wakoola Water Garden. It had gone out of business several years ago, and now is the home of FurKids. Furkids is a rehab and medical center for cats. (Strange to have a fish show at a cat center!) Furkids has done a good job at bringing back the old grandeur that once was.

Note that

It's next to a hiking trail. Furkids owns the trailhead overflow area (2 gravel lots),

which will accommodate about 50 cars, plus in front of the store, as well as the tanks.

It's about 11 miles north of Holcomb Bridge road (West on McFarland exit and then right turn onto Union Hill Road (note that Union Hill road turns left after first stoplight from McFarland.) It's the old Wakoola fish store, now a cat sanctuary.