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August, 2021

By the Pond

Hello Koi and goldfish friends- Greetings from the southeast fire oven.

Well, you didn't choose to live in Georgia because "gosh", the sweltering heat is just so glorious", or "wow, this 50-lb humidity-infused sweater feels so comfortable...and actually fits me perfectly!".

Nevertheless, we're all here and I hope that this flaming vapor-greeting finds all of you well and safe.

A special thank-you to our AKC president and owner of a truly beautiful koi pond, Diane Giangrande. Although no cannonball surprises were noted, the food, atmosphere, and slightly overcast day made for a really nice afternoon (ed: actually, it drizzled for those who were sitting outside, but Kevin was in the kitchen). Diane, thank you for hosting the July social. My envy for such a spectacular and clear pond...not to mention your beautiful koi, will not fade soon.

OK folks, our next AKC meeting is as follows:

When: Saturday, August 14th @ 4 PM

**Where: Randy's Nursery (Randy's Perennials & Water Gardens)
523 W. Crogan St., Lawrenceville, GA**

Randy's Perennials & Water Gardens will be discussing many aspects of their multi-tiered premium plants, aquatics and supplies business! They offer a premium plant selection including thousands of perennials, numerous annuals and the largest selection of aquatic plants in Georgia!

They also offer a choice selection of woodland natives, hardy palms & cacti, unique shrubs and hardy bamboo!

Prepare to ask their staff questions about plants, water gardens, ponds, goldfish and koi!

Thank you Randy's Nursery for being a valued sponsor of our AKC!

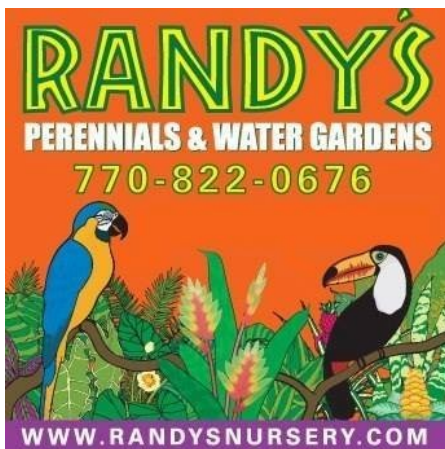
Hope to see all of you Saturday, August 14th at Randy's Nursery!

Stay safe and healthy,

Kevin

Please remember our Sponsors:

Randy's Perennials, Koi Koi Pondscapes, Coastal Pond Supply, T&T Uniforms, The Koi Store, and Paradise Ponds



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Our July social

Many thanks for the hospitality shown by Diane Giangrande for offering her new pond as our summer's social. Besides the scenery and discussions, nobody went hungry, what with all that food offered!



For sale by Club Members

Lovely decorative bird bath in excellent condition. This was recently a door prize at a recent AKC meeting. The pedestal and bath are separate, and heavy enough to withstand the blast from a F-4 tornado. The price is right (free). Contact Bob Chaffer at rchaffer@comcast.net to be first in line to obtain this wondrous creation. (Note...I can bring this to the next meeting for the lucky recipient.)



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<https://koiorganisationinternational.org/koi-101>

Mechanical Filtration and Bioconverters: Both Needed

by Nancy Moore, CKK, KHA, from Washington Koi & Water Garden Society



Some people, enthralled by beautiful fish, think that to have a Koi pond you just need a big hole, some liner, a little waterfall filter, and a bunch of fish. Then they can sit back and enjoy. Well, that works for a while.

After having seen numerous ponds that are overloaded with fish and have filter systems the size of a shoe box, I thought it might be useful to discuss what it is that filters do. First of all, there are filters and then there are biofilters or bioconverters. A "filter" removes solids (fish poop, leaves, cedar bubs, gnats, dust, pollen, flowers, algae clumps) from the pond. This is referred to as **mechanical filtration**. A **biofilter/bioconverter** hosts the beneficial bacteria needed to convert ammonia and nitrite to nitrate.

The bioconverter, as noted Koi expert Chris Neaves says, "is the place in the pond/filter system where we provide a media for the nitrifying bacteria to grow on."

If the shoe box filter has Japanese matting or bioballs or other media, it will work unless it is so clogged there isn't enough oxygen to keep the good bacteria (those that convert) alive and well. In the long run, it may not be big enough to handle the fish load, but it works for a while on some level. However, if it is brand new and not "seasoned," it won't be able to convert the chemicals, and the pondeer will see ammonia when he/she tests the pond water. Or nitrite. If the biofilter is sized to the actual pond and number of inhabitants, it will be more effective and healthier as it recycles the water back into the pond.

The **mechanical filter** removes solids (commonly called crud at my pond) so they aren't recirculated back into the pond. The solids are trapped, and eventually removed from the filter. So when I backwash my bead filter, or drain and rinse my Japanese matting tanks, the water that shoots out at first is brown and smelly, the now liquid solids that have been trapped.

On the other hand, the **bioconverter** involves converting one toxic chemical to another toxic chemical to a much less toxic chemical. Remember the Nitrogen Cycle? Ammonia from the gills and urine from the fish (primarily gills) changes into nitrite by certain bacteria. Then other bacteria in the bioconverter transform the nitrite into the less harmful nitrate, which can be removed via water changes (or in some hybrid ponds, taken up by plants). These bacteria need oxygen to thrive, and oxygen is in the water, and ponds get additional oxygen from the splashing of a waterfall or air domes or air stones. As Chris Neaves says, "These beneficial bacteria do a vital job in nature and in the pond of chemically changing toxic fish waste to less toxic substances."

All of this depends upon having oxygen in the pond and filters. This requires circulation. The nitrifying bacteria occur naturally from a combination of fish waste and oxygen, and exist on pond walls and floors as well as in bioconverters. When starting a filter, it usually takes about 6 weeks naturally, or about 6 weeks if you buy alleged nitrifying bacteria. (There is a way to shorten this time by using ammonium chloride prior to adding fish to the pond, but that's another article.)

Organic waste, trapped by mechanical filtration, has to be removed on a regular basis, i.e. water changes, backwashing filters, rinsing media, rinsing sieves, etc. If waste is not removed from the pond, we basically have our fish swimming in a toilet that never is flushed. Think about that. Imagine having other animals confined to a relatively small space, and never removing feces or urine. The crowded cats or dogs would die, over time, from stress and disease, just as will the fish.

Years ago, I visited a local pond that was having major ammonia problems, a new symptom in an older pond. It turns out that the pondee seldom did water changes anymore, and his filtration system consisted of two barrels, one acting as a mechanical filter, and the other, theoretically as a bioconverter. The sludge in the matting prevented 99.9 % (my guess) of the bacteria from doing their jobs. When the matting was rolled out on the lawn, it looked like a very long chocolate brownie. With regular water changes, additional air, and a bioconverters that had space for bacteria, chemical conversion started taking place again, and it wasn't long before the pond was functioning. It did take CloramX to reduce the ammonia toxicity until the bioconverter could handle the ammonia load. Koi keeping requires regular maintenance, as this pondee re-discovered.

And fish do grow. We saw from the chart that Karen Pattist produced in a recent Zoom meeting just how much waste is produced by larger and growing Koi, both solid waste and chemical waste. Fish waste must be removed faster than it is added. And that is why we need to pay attention to how we handle the filtration, both mechanical and bioconversion, in our ponds.

And that is also why we recommend bottom drains, or faux bottom drains, as otherwise, the crud stays on the bottom of the pond and only is removed by a pond vacuum. People tend to vacuum once or twice a year, as opposed to flushing out a filter fed by a bottom drain every week. Which, do you think, has healthier water? As I said earlier, Koi keeping requires regular maintenance in order to have healthy filters, healthy water, and healthy fish.

A detailed and lengthy article on filtration (several, actually), can be read in the Archive section of www.koiorganisationinternational.org, authored by Chris Neaves, Koi keeper in South Africa and a regular contributor to K.O.I. And thanks to him for inspiring this.

General recommendations based upon experiences years ago

The following article is taken from our October, 1993 issue. It contains a lot of interesting recommendations and observations. Bear in mind, though, that this was the state of the art 30 years ago, and contains some recommendations substituting for future equipment that had not yet been available.

Bob Spindola has been a koi hobbyist for over 17 years with lots of koi experience: Chairman of the Associated Koi Clubs of America (AKCA) and five times president of the Nishiki Koi Club; chairman of Nishiki Koi Club annual shows seven times; long-time member of the Zen Nippon Airinkai (ZNA) Southern California Koi Club. Bob presented a lot of really good information which I will "outline" for easier reading/reference.

PONDS. Bob told us he bought a house with a koi pond--24 feet long, 7-1/2 feet wide, 1 foot deep, with no filter and no shade. He recounted many of the mistakes he'd made on his first pond and subsequent reconstructions and gave the following tips:

SHAPE OF POND. Round or square encourage koi to sit on the bottom and not move around very much or just move around in a circle. Build rectangular to encourage swimming.

SIDES. Don't slope in or you'll get an area at the top where the koi won't go and where a lot of excrement will lie.

BOTTOM. Don't have a flat bottom - slope toward the drain. Otherwise the waste cannot get to the drain.

DRAIN. A drain is very important. If you don't have one, all the gases and excrement will settle at the bottom, which is not healthy for the fish. Be sure to put a cover over it (can be made by pouring concrete into a garbage can lid and cementing in legs). If you have just a grate, leaves and other debris will collect and you'll continually have to clean it out. One drain is better than two because you'll get more pull from one drain unless you have a pump for each drain with plumbing on top which goes to the filter. It works like a regular drain for those ponds which don't have one.

DEPTH. Recommend three- to five-foot depth for the pond. Predators can easily get into a shallow pond; it's harder for them in a deep pond. Also, when koi exercise, they go up and down as well as around the pond. A shallow pond goes through more temperature changes; a deep pond will stay at about the same temperature. If you can't go down to get depth, consider building up the side walls to make the pond deeper. Have a nice separation from the ground to the top of the water. Block off the pond so that bad ground water can't get into the pond.

SETTLING TANK. Highly recommended. Dig down about two-thirds the depth of the pond. It should be about four feet in diameter in a cone shape with a 45-degree angle and an outlet at the bottom. The intake should be in the bottom third of the pond. The water should go into the tank sideways which will cause it to go around. Every day, open the drain and turn on the motor to drain the heavy sludge. The top one-third of the water goes into a pipe that goes to the filter. And the filter is smiling because it doesn't have to work so hard. Placing a sponge over the intake will take away some more of the debris. Clean the sponge about once a week. If you're on vacation, the tank can go up to a week without being drained.

FILTERS. Many kinds--barrel, downflow, upflow, multichambered, suspended with Bio Balls. Gravel tends to channel. Recommend not more than 16-18 inches of filter material, although some members recommend 6" to 8" of filter material.

Build the filter so it's easy to clean. Filter should be shaded. With no sun, the good bacteria have trouble growing, but too much sun is not good. Recommend dual-chamber filter, one up-flow and one down-flow, both with a drain. Looks like a rectangle, but there is a wall between the two chambers. The water from both join in a pipe at the top. With two chambers, you can clean them one at a time. Clean the filter every four to six months. If it's channeling, clean more often.

ADDING WATER. Drain only the amount of water you need so that you're not adding too much new water.

SKIMMER. Takes away leaves and debris on the top of the pond. Water from the skimmer should go into the settling tank and be circulated from there.

WATERFALL. The higher, the better; want a nice big drop. The water penetrates the pond, putting oxygen into the water.

JETS. Move the water at the bottom of the pond and take the waste down to the drain. Make the koi swim. In a still pond, the koi tend to just sit. If you have movement in the pond, the koi swim.

FEEDING. When it's warmer, feed more; when it's cooler, feed less.

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

Atlanta Koi Club
Financial Statement
As of June 30, 2021

BEGINNING CHECKING ACCOUNT BALANCE: **\$39,931.86**

INCOME STATEMENT

Income

2700 Membership		
2730 Member Dues	\$20.00	
2720 Name Badges	\$40.00	
2745 Sponsorships	\$100.00	
2500 Misc. Income		
2545 Raffle	Jun-21	\$100.00

Total Income **\$260.00**

Deposit Petty Cash back into Checking Account **\$136.00**

Expenses

200 Club Store Expenses		
240 Equipment	deposit on trailer	\$1,108.11
600 Koi Auction Expenses		
620 Paid to Fish Seller		\$14,158.50
652 Postage		\$55.00
670 Water Expense		\$500.00
670 Water Expense	Refund from Forsyth County	(\$458.58)
1400 Bank Charges		
1466 PayPal 1466 PayPal Charges		\$3.15
1465 Credit Card Charges		
1100 Rent Expense		
1101 Rent @ Coastal		(\$110.96)
* 1110 Storage Building		\$1,100.00
700 Misc. Expenses		
Monthly Club		
740 Meetings	June 2021 food expense	\$200.00

Total Expenses **\$16,555.22**

Month Net Income/(Loss) **(\$16,159.22)**

ENDING CHECKING ACCOUNT BALANCE: **5/28/2021** **\$23,772.64**

* NOTE: Storage Building Expense is high this month because it reflects the expense reimbursement for 3 months plus the payment for both May and June are on this statement. 9