Danetta Mecikalski's House

January 23, 2011, 3:00.

4905 N Via Entrada
Tucson, AZ 85718
Address Service Requested

Please contact Brent VanKoevering at 780-3980 or Bob Panter if you are interested in hosting a meeting. We are looking for hosts for 2011.

SAKA, Inc Club Officers

President	Bob Panter sakabob@yahoo.com (520) 747-7278
Vice President	David Young koiman@mindspring.com (520) 682-7697
Secretary	Lynn Riley (520) 825-9066
Treasurer	Dan and Martha Cover mardan79@msn.com (520) 297-4071

Committees/Points of Contact

2010 Pond Tour	Jeanmarie Schiller Tucsonpondtour@yahoo.com (520) 299-1876
31st Koi Show Co-Chairperson(s)	Bob Panter and Jeanmarie Schiller
AKCA Representative	Debby Young debbyt@akca.org (520) 682-7697
Newsletter Editor	Brent VanKoevering bvankoevering@longrealty.com (520) 780-3980
Koi Health Advisor	Noel Shaw koidoc@noelshawdc.com (520) 400-0335
Membership Chairperson	Faye Hall (520) 297-1253
Raffle Chairpersons	Jeanmarie Schiller crankyjean@msn.com (520) 299-1876

Education Committee	Erin Riley elriley@aol.com (520) 818-6490
Librarian	Jeanmarie Schiller crankyjean@msn.com (520) 299-1876

Editor's Note: Articles published herein are intended for the enjoyment of all and come from a variety of sources. The articles are not intended to replace veterinary advice. Pond owners, and not the club, are responsible for the health of their koi, water changes, what to do, and how to treat their pond. Reasonable effort is made to review these articles for accuracy before including them in the newsletter.

Presidents Corner 12-6-10

Just think warm, warm, warm. Is it helping? Check your Koi do they like the thought?

I know your thinking I must be nuts. Wellllllll you might be right. Are we not all a little nuts every once in a while? Now just to be on the safe side check your water. Is it warm? I did not think so. So you see it does not work but only in our own minds. It is still winter and there will be many more cold nights. Your Koi are still in hibernation and will be there till about the middle to end of March. Please do not panic I will be all right.
A little nut's you say, I sure hope so. You have to have some fun sometimes.

I do hope all of you had a very Merry Christmas and a Blessed New Year.

Elections will be at our February meeting, and we need all committee budgets in this month. If there are any of you that would like to chair the Show Committee let me know ASAP. There are things that need to start happening with the show now. The show chair job is really not that bad. Try it you will like it.

Koi and our Youth today is a topic that needs to be discussed at our meeting. Along with that where are we going as the Southern Arizona Koi Association, Inc.? What would you like to see happen in our Association and how? What kind of Ideas do you have? Let us hear from you as Association members. Your voice counts and carries a lot of pull. Our Koi Association is a leader of Koi Associations, Clubs and Societies in the United Stated. We stand out from the rest. We are an Association that influences other organizations because we work as a team and enjoy what we do. Let us not loose sight of this and continue to be a leader. We are the Southern Arizona Koi Association, Inc. and proud of it. You all have made us what we are and I thank each and every one of you for all you have done and contributed to keep us that way.

For the love of Koi,

Bob Panter, President SAKA, Inc.

Important Notice: Going forward the newsletter will be distributed via e-mail only, unless requested otherwise. If you do not presently get the newsletter electronically, or if you wish to continue receiving it via snail mail, you must contact Brent VanKoevering at 780-3980 or bvankoevering@longrealty.com.

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Club Meetings

Hosting Meetings: For those wishing to host an upcoming business/education meeting, the club will reimburse the host up to $50 (with receipts) toward food/beverage for the meeting. **We would like to see your pond!** Please contact Bob Panter if you are interested in hosting a meeting.

Club Announcements

December Business Meeting Minutes

Minutes from the last meeting December 12, 2019 which was also the club's Christmas party.

Bob called the meeting to order at 3:30pm.
Quorum was present.
Correspondence for the prior month involved notice to the club that a former member had passed away. SAKA sent a condolence card.
Minutes from the last meeting were approved.
Koi Show report: Overall, the show was a success with a huge turnout by the public. SAKA wished to thank all the club members who were involved in the planning, set-up, judging, auction and take-down. The club needs new Show Committee for next year as Bob will not be chairperson.
Treasurer report: Koi Show was profitable for the club. Details as follows:
Total revenue from the show is $11,071.00

EXPENSES	
Advertising	220.00
Awards	1090.00
Banquet	1015.59
Fri Judges	272.23
Judges gifts	42.78
Hotel	535.66
Total Misc	1135.99
Sat lunch	262.50
Security	200.00
Site fees	90.00
Sun, Breakfast	98.67
Water	255.48
Total expenses	5218.90 for a profit of $5852.10

Checking account bal is $12,047.74

Pond Tour Committee report: Club calendar sales had a $126.96 profit; however, additional monies were collected during the Koi Show and were included in the overall income from that.
2011 Pond tour will be in May.

Other business:
Request was made for hosts for upcoming meetings. Interested members were instructed to contact Brent.
Request for budget proposals for all committees for 2011 to be submitted at January's meeting.
Announcement about upcoming elections for club VP and Secretary to be held in February. Any interested members should announce their candidacy by January's meeting.

The meeting was adjourned.
By Jeanmarie Schiller for
Lynn Riley
Secretary

Bubble Bead Filter

By Tom Graham Reprinted from akca.org

"Building an effective biomechanical filter is not tough, making one that is easy to maintain was the challenge."

What is the single most important element to a healthy koi pond? Filtration! What often represents the most work in owning a koi pond? Filtration! Where do many pond builders cut comers? Filtration!

It has been said over and over again. The single most important element of koi keeping is water quality, and water quality is a product of good waste treatment. Somehow we must remove the waste products produced in our ponds. I recently had the opportunity to visit Dr. Ron Malone, an Associate Professor in the Department of Civil and Environmental Engineering at Louisiana State University. in Baton Rouge Louisiana. Over the past 12 years, his team of researchers have invested over $750,000 in funding from the Louisiana Sea Grant College Program and the National Coastal Resources Research and Development Institute, studying biological filtration systems.

They have focused on the development of cost effective water treatment approaches for use with high density aquaculH ture production facilities. The result of this effort is a series of head filters ranging from aquarium size to a unit that can handle the largest whale exhibits.

Dr. Malone, who leads the project, spent the day with me and took me step by step through the development and operation of these new filters. He told me that when he began the prqject 12 years ago, they started working with flooded gravel beds, similar to what is used widely in our hobby. As they studied the workings of this type of filter, they saw that the surface area of the media was not efficiently being used, and that the systems were very difficult to clean.

In their research, they studied the entire gamut of filtration media and filter designs. (An interesting story in it's own right). The goal was to find a media that would provide a high specific surface area for biofilm development in a small amount of space (in cubic feet) and to develop a filter design that would be easy to clean and cost effective.

They found that a spherical plastic bead, approximately 1/8in diameter (half the size of a pencil eraser), was the media of choice. The beads they use are made from food grade low density polyethylene plastic and they float. The beads provide a great deal of surface area for bacteria growth - about 400 square feet of surface area for every cubic feet of beads. This compares to around 100 for typical pea gravel, and 125 for bio-balls. And, since they are very durable they never have to be replaced.

They discovered that a floating bead worked particularly well, since the beads would pack into a static bed at the top of a filter chamber, providing the pockets to trap particles and grow bactena, much like an under gravel filter in an aquarium.

Then, when the filter requires cleaning, they turn off the pump and agitate the beads to break free the solids. The solids are then flushed out the bottom of the filter. In their commercial designs, called prop wash systems, they used a large chamber capable of holding 6 to 200 cubic feet of beads. The units are cleaned by a powerful propeller system which intermittently agitates the beads within the filter, shearing off excessive biofloc (loose bacterial colonies) and releasing captured solids. When the propellers are stopped, the beads float to re-form the filtration bed while the solids settle in an internal settling cone forming a thick sludge. The sludge is removed

from a drain at the bottom of the cone. Only sludge is removed so the water loss associated with the cleaning process is negligible.

This system has proven to be quite effective in large commercial installations, where very heavy fish loads are being managed. The filters have been tested on systems holding food fish species (such as tilapia, catfish, striped bass, trout) along with a wide variety of specialized applications (including tropical fish, alligators and crayfish).

Once this system was perfected and in use, they switched their efforts to developing smaller, less expensive systems they call bubble bead filters. The new design features an hourglass shaped chamber where air bubbles are used to stir the beads, rather than a motor and prop.

The key element to the bubble bead filter is it's specially designed "washing throat". It is a constriction between the upper and lower chamber, which forces the beads to fluidized (disperse and flow like fluid) as they are gently scrubbed by bubbles which are literally sucked into the filter as the filter is drained. The bubbles move up from the lower chamber, while the water and beads flow down, causing the cleaning turbulence.The cleaning process is designed to remove captured solids without damaging the sensitive biofilms responsible for nitrification, and uses 10 - 15 gallons of water per cubic foot of beads.(A two cubic foot filter will use about 25 gallons).

These smaller systems use from 1 - 3 cubic feet of media, and stand about 4 feet tall. They are constructed entirely out of fiberglass and PVC fittings, with no moving parts whatsoever.

Deciding which system to use is determined by the maximum amount of feed (dry pellets) that is put in the pond on a daily basis. One cubic foot of beads can provide complete solids capture and nitrification for a feeding rate about 1 pound of dry pellets (35 percent protein) per day under production conditions.

For koi ponds, one cubic foot of beads can effectively process one half a pound of feed per day. At a 2 percent (of body weight) feeding rate, a cubic foot of beads will support 25 to 50 fifty pounds of koi food. Commercial food fish production facilities normally support 75 to 100 pounds of fish per cubic foot of beads, but this demands close daily management of the production system. If you compare that to even the most densely populated koi ponds, you can see these systems are extremely powerful.

Bead filters used to clean koi ponds are typically back- washed once or twice a week during the warm summer months and as little as once a month once feeding drops off in the winter. If filters are not washed they slowly clog, gradually shutting off the return flow to the pond. This decline in return flow is usually visually evident, providing a convenient reminder of the need for backwashing.

Flow rates for bead filters are dependent on the total ammonia-nitrogen excretion rates (TAN) and oxygen demand for the biofilters, which are controlled by the feed rate and pounds of fish in the system. A minimum rate of about 5-10 gallons per minute per 100 pounds of fish (or per 2 pounds of feed per day) is normally used to assure proper bio-filter operation. This means the system only requires a very low flow, low pressure pump, however, higher flow rates may be demanded for large ponds with few fish particularly when a UV light is being used for algae control. This does not present a problem for the filter since performance of the filters improves when the flow rates increase.

The bead filters are effective at removing suspended particles. as small as 10 microns, but cannot harvest the small 5-10 micron algae that often infest a pond. If this is a problem, a U.V. light sized to the ponds volume, (turning over the volume of the pond 4 times a day) will produce the desired results.

Since the small bubble bead systems proved to be well suited for ornamental fish ponds. particularly koi ponds, Dr. Malone engaged the assistance of Burt Nichols, of Water Garden Gems, in Marion Texas. Together they

have developed a new model designed specifically for backyard koi ponds.. The system uses 2 cubic feet of media and the bubble cleaning design. Burt is now manufacturing and distributing these filters., which are designed to handle up to a 4000 gallon pond packed with koi. The filter can be seen at his facility, and at Koi Unlimited, in Baltimore. Maryland. The larger prop wash filters are manufacturered by Armant Aquaculture (504)265-9216.

Many thanks to Dr. Malone and his associates, particularly Dr. Kelly A Rusch, Assistant Professor-Research, and Doug Drennan. Research Associate. for spending so much of their valuable time with me answering all my questions, and ferrying me all over Baton Rouge to get this story.

MATTRESS OR STONE FILTER MEDIA?

By Bob Bransfield, M.D. Reprinted from akca.org

Stone/rock filters have been the main filtration technique for most koi ponds for years. What is so good about stone? Most of the volume of the media is the bulky core of the stone which is biologically inert, resulting in a small amount of surface area. However, it does create an environment that is conducive to aerobic bacterial growth. My guess is the resistance created by the stone helps to equalize the pressure throughout the media, thereby preventing dead spots. Also water passing through the stone has an eddy current effect which creates an environment which helps bacterial growth. But how can we have the same effect in a more efficient, lighter media? The natural evolution is to consider mattress filters which have a larger surface area. Mattress, also called fiber matting, filters have been used successfully for many years, the most common being the air driven filters used for aquariums. All of the older types of mattress filters employ a solid piece of matting material with water flowing straight through it. All of these filters eventually channel and clog and become anaerobic if not cleaned regularly.

In Japan and England the checkerboard arrangement of matting material rather than a solid piece was found to be more efficient. This arrange ment seemed to create the eddy currents that are more conducive to bacterial growth. All the big koi breeders in Japan are now using this method. It is also the predominant method of filtration in England. In short, people with very expensive fish are using this system. Miyoshike, in Japan, and Peter Waddington of Infiltration Limited in England, have played a major role in developing this system. The King Koi, Pond America, and Nishikigoi Tancho filters employ this technique.

I have been experimenting with this material over the past six years with a combination of scientific and trial/error approach. I have had my share of frustration and dead fish to show for my efforts. The original use of this material was in containers designed for stone filters with heavy aeration under the matting. Although this works, it is energy inefficient. I like stone filters, upfow and down units can be used, but unlike stone filters, lateral flow can also be used. In general, the lateral flow units are easier to employ.

To build a lateral flow unit, the filter container should be a rectangular trench with a flat, or grooved bottom and one or two drain plugs. The container can be either fiberglass, plastic, or made from pressure treated wood with a liner on the inside. A waterfall entering and exiting the trench is preferable to aerate, or some other form of aeration can be used (i.e., a trickling filter or stream before water enters the trench filter). Air stones in the trench can also be used to increase the efficiency. The trench can be any length. The longen the better.

Since the mattress has very little resistance to water flow, the system should be designed to equalize the pressure throughout the media (i.e.. entry ports and exit ports should be equally distributed across the ends of the trench. A plate with holes can serve this purpose). Equalizing the water distribution entering and exiting these filters is the most difficult aspect of these units.

The media should be supported on a screen or grid slightly off the bottom. This allows sediment to be constantly purged. An even better design is grooves in the bottom of the container. The top of the media should be above the water level to prevent the water from channeling above the media. Mesh screens or bags can hold the media in place.

The media that I have been using is a polyester matting. The checkerboard design can be used but cutting this material into squares appears to be superior. Checkerboard units can be placed at either end to keep the squares in place, or egg crate grid could also be used for this purpose. Another design that is more effective is punching a series of holes in the matting in a large, small, large, small con-figuration in successive sheets, This increases the eddy current effect.

Mattress filters do best with a higher flow rate than stone. The optimal flow rate is probably about 10 gal./ minute/sq. ft., but I have seen considerably higher and slower flow rates be effective depending on the system. Lateral flow requires a more rapid flow than up or down flow. Often the filter is gravity fed before the pump, but it can also be after the pump. Up flow or down flow can he employed in rectangular or round containers, but round is prefeable.

To test the effectiveness of the unit, shake some of the media under water, especially near the bottom. If it turns cloudy, there is an inadequate flow rate in that area. If pepper flake-like particles shake off the media, and the water remains clean the flow rate in that area of the filter is adequate. Better the flow rate he too fast than too slow. The largest filter of this type I have built is 20 feet long, 4 feet wide, and 18 inches deep with a small waterfall in the center to aerate. The smallest I have built is 42 inches long.

These filters are the filters of the future and are more energy efficient and much more space efficient. Sooner or later we'll catch up with England and stop using gravel.

Kawarigoi Korner

If you have suggestions for the newsletter or items to be included in Karawagoi Corner or the Calendar,
Please contact Brent VanKoevering at 520.780.3980 or bvankoevering@longrealty.com.
Here is a note from Dennis and Kathy Leonard.
Could you list in the newsletter that we're taking out our pond. Naturally we'd like to first try to sell the fish . We have 24, 11 years old. Most are pretty nice. We'd also like to sell the equipment.
We have 2 -55gal.upflow ribbon media filters. 1-turbovortez solid eliminator. 1/3HP 2 speed motor. 1-UV light. 2-sand filters. We also have a brand new never used 1/3 HP Sequence pump.
We'd even consider selling the liner and bottom drain.
Kathy Leonard
913 Palomas Dr.
Willcox, Az. 85643
520 384-4162

Upcoming SAKA Education and Business Meetings

Date	Location
January 23, 2011	Danetta Mecikalski
February 27, 2011	Joay Atkinson
March 27, 2011	Casey Case
April 17, 2011	Dan and Martha Cover
May 22, 2011	Noel and Debbie Shaw

Shows, Pond Tours and Seminars

Event	Dates/Location/Links

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Would you like to host a meeting?
_____

Would you like to serve on a committee?

_____ If yes which one?

_____

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