



The Raleigh Aquarium Society

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June 2023 Newsletter

The Raleigh Aquarium Society (RAS) was founded in 1981 to "encourage and enhance the education, knowledge, and enjoyment of Society members at all levels of experience about the many aspects of the home aquatics hobby". We welcome participants at all levels of experience (including none - we all started that way!). Details can be found at: www.raleighaquariumsociety.org

June Calendar of Events

Thursday June the 1st @ 7:30 PM: RAS Meeting. Gerry Hoffman will speak on a range of selected topics and experiences covering a 30 year old well-planted and established tank, its leaks, attempts at sealing the leaks from the outside and then letting the tank evaporate with crypts changing to emersed form. He will also speak on breeding and feeding Corydoras and Loricaria fry. Live, In Person, and at the [NC Vet School](#). (Click link for Google Directions)

Saturday & Sunday June 10-11th: The Aquatic Expo – Discount code available from Thomas Narten

Sunday June 18th @ 7:30 PM: Zoom Social Hour - Now taking place the 3rd Sunday every month (hosted by Caroline Morgan).

Thursday June 15th @ 7:30 PM: Board Meeting (open to all). Contact ras-board@ras.groups.io for info.

Next Meeting is Thursday July 6th @ 7:30 PM. Culturing Live Foods with Todd Wentzel

Save The Date:

- **FALL AUCTION** – Sunday, September 24th the Ramada Inn. Please reach out to the RAS Board if you want to help organize this.
- **AGA Convention** – April 2024 – More to come in the next newsletter!

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Letter from the President (Thomas Narten)

Welcome to the June edition of the RAS Newsletter. June's regular monthly meeting will take place on Thursday, June 1 at the Vet School. Our meeting will feature Gerry Hoffman from the Potomac Valley Aquarium Society (PVAS) speaking. Gerry is a long-time fishkeeper and hobbyist and is well-known to many in our community (he came down for our recent CAW event).

Note also that going forward our monthly Zoom social hour is moving from Thursdays to the 3rd Sunday of the month. The new Sunday time coincides better with (host) Caroline Morgan's work schedule. Join if you are interested. Topics tend to run all over the place depending on what is on people's minds.

Our May meeting was essentially a social hour, with tables organized by topics. People could go from table to table to speak or ask questions on topics of interest. The funny thing was, much of the conversation had little to do with the assigned topics! What I observed was a great vibe in the room with lots of chatting and people pursuing their interests. I think the meeting was a great reminder that socializing with like-minded hobbyists is a really valued component of what we do.

One final note, we had originally planned on having a Saturday meeting on July 8th. That is not going to happen as our regular Vet School meeting room is not available to us on that date. Stay tuned as we find an alternate date for our next Saturday meeting.

Speaker Info: Gerry Hoffman

This week we have Gerry Hoffman from the Potomac Valley Aquarium Society (PVAS) speaking. Gerry is a long-time fishkeeper and hobbyist and is well-known to many in our community (he came down for our recent CAW event).

Gerry has been a member of the Potomac Valley Aquarium Society in Northern Virginia for over 47 years, and during that time has held almost all of the positions on the club's Board of Directors at one time or another. He has a small fishroom with about 20 tanks, over 400 gallons of water and numerous jars of cultures, plus about 400 gallons of outside tubs for summertime spawning, and raising daphnia and mosquitoes. Yes, he lives out in the country with lots of woods all around and a small stream flowing through the back part of his 20 acres. He grows the plants that live in his well water, and loves the smaller fish, the tetras, corys, South American dwarf cichlids, African riverine krib type cichlids, but has never kept the Rift Lake cichlids or Mbuna, or even larger tank-buster fish. He enjoys trying to spawn the fish he maintains, being a generalized hobbyist with many fish that interest him.

May Auction Report (Thomas Narten)

The May auction featured 32 items. Items came from 7 sellers and went home via 14 buyers. Total revenue for all sales was \$219 with an average selling price of \$6.84 per item. Out of the total revenue, RAS netted \$145 while sellers took home \$74.

Keep those items coming! Even if you think nobody would want your stuff, I consider it a win to have unwanted or extra items go to fellow club members rather than the compost or as fish food!

Remember also that we have a 'freebie' table at monthly meetings, where you can bring unwanted items that you don't need and may not be worth auctioning, but that someone else can use.

BAP Program

The 2023 BAP annual season runs from November 16, 2022 to November 15, 2023.

Hi BAPers,

BAP points awarded this month:

- David Campbell *Neolebias ansorgii*
- Matt DeGroot *Hyphessobrycon amandae*
- Neil Frank *Xenotoca doadrioi* 'San Marcos'
- Dan Koenig *Tanichthys micagemmae*

All BAP program information can be found at: <https://www.raleighaquariumsociety.org/bap>

Interested in the BAP? Please contact Matt DeGroot at: raleighaquariumsociety+BAP@gmail.com

The ras-bap email list is available at groups.io for sharing breeding-specific information and asking questions of the RAS BAP breeder community.

<https://groups.io/g/ras-bap>

Upcoming Group Buys

Julie Hays is sponsoring a Group Buy from Brine Shrimp Direct.

Sponsors will send an email to our ras@ras.groups.io email. You can sign up online at <https://groups.io/>

If you are interested in initiating a group buy, follow these steps:

Confirm board approval of your buy and your shipping budget by emailing your plan for the group buy to “ras-board@groups.io”

Announce your proposed buy to the RAS email list “ras@ras.groups.io”

Include coordinator contact information and instructions for the buy.

Allow interested members a minimum of 5 days to send their order to the coordinator before the group buy order is placed with the vendor.

Remember: RAS sponsored group buys means that the RAS pays for the taxes and the shipping costs, allowing all **RAS members (Yes, You!)** to purchase fish, food, and other aquarium supplies at reduced cost. [Group Buys](#) provide access to unusual or hard-to-find fish, plants and foods that generally are not available at local fish stores (LFS). Group Buys are open to all current RAS members, and are organized by individual RAS members, **(Yes, You!)** with the approval of the RAS board. Each group buy has a "sponsor", and participants work directly with the sponsor to work out details of a specific purchase. RAS is open to proposals for additional group buys from all members. [Details here.](#)

Thank you to all our Group Buy Sponsors!

The Aquatic Expo 2023

THE Aquatic EXPO

ECOLOGY OF THE PLANTED AQUARIUM

AUTHOR BOOK SIGNING!

DIANA WALSTAD

WWW.THEAQUATICEXPO.COM
JUNE 10TH - 11TH 2023

The Aquatic Expo 2023 is a two-day showcase for the aquarium hobby. This event is a Sustainable Reef production focused on educating the population on the benefits of sustainable practices within the aquarium, and other related industries.

The Aquatic Expo differs slightly from the Carolina Aquarium Workshop, as it is more focused on vendors and manufacturers. TAE hosts over 80 exhibitors, bringing some of the finest livestock and dry goods that the aquarium hobby has to offer. Our hand-picked selection of vendors is curated to provide the attendees with a diverse and unique sample of what the aquarium hobby has to offer, and we have taken great care in ensuring that our vendors use best sustainable practices when sourcing and caring for their livestock.

The Aquatic Expo is a culmination of nearly 20 years of shows in the NC area. Over the years, we have decidedly put the Carolinas on the map as a destination for hobbyists worldwide. With the hosting of the North American International Shrimp Contest, as well as our own Freshwater and

Saltwater Aquascaping Contests, TAE 2023 is an event that is drawing attendance from over 20 states and 5 countries! The Aquatic Expo is the next big thing in the aquarium hobby, and we are happy to be in a central location for the Carolinas and the entire east coast!

TAE 2023 speakers include the saltwater expert, Dana Riddle, speaking on the ever-evolving wildlife collection situation in Hawaii, freshwater aquarium trailblazer, Lucas Bretz, speaking on keeping aquariums natural and simple, and the reptile wrangler, Myke Clarkson, speaking on fully aquatic snakes! These topics have been chosen specifically to educate and entertain our guests, so that we can all learn more about how our hobby affects the world around us.

There will also be special appearance by industry celebrities like Andrew Sandler of Polo Reef, John and Lisa Hudson from KG Tropicals, and our very own Diana Walstad, who will be signing and selling the latest edition of her book, "Ecology of the Planted Aquarium."

Don't forget the RAFFLE! Who doesn't like a little fun and games? When it comes to raffling, Sustainable Reef has always provided great prizes! This year will be no different. With over \$20k in giveaways and raffle prizes, The Aquatic Expo 2023 attendees will leave with their bags full of swag, merch, and samples! Follow us on social media to see some of the amazing prizes being offered at TAE 2023!

I could go on and on about how excited we are to have The Aquatic Expo 2023 in NC, but the best way for you to learn about it is to come out and join us! Tickets are only \$20 for a single day, \$35 for the weekend, or \$99 for a VIP all-access weekend pass! RAS members get 20% off any general admission, so be sure to reach out to your club president if you are a paid member and get your discount code!

Your support means the world to us, and it allows Sustainable Reef to continue providing events like these in an area!

The Aquatic Expo Team

(Article) Regarding the Shelf Life of Fish Foods by *Todd Wenzel*

At the May 2022 meeting, our guest speaker, Dr. Ashley Emanuele, made statements about the longevity of fish foods that I didn't entirely agree with. At issue was the nutritional value (or lack there of) of feed that aquarists had in their possession. I disagreed with Dr. Emanuele when she indicated that stored feed had only minimal value left and should probably be discarded. In my defense, I've run an aquaculture research facility and an aquarium shop, I have a masters degree in fish immunology, and I've spawned approximately 150 species of fish. In practice, I buy food in bulk and freeze everything except quantities that I can use in 2-4 weeks. I collect and index aquarium and aquaculture publications and came across the following article that agreed more closely with my opinions about the nutritional value and shelf-life of foods. I also forwarded this article to Dr. Greg Lewbart of the NC State College of Veterinary Medicine for his comments.

Hey Dr. Lewbart, what do you think?... Greg's response: "I think in general feed should be stored carefully and is probably good for at least 6 months from the date of purchase. Especially if you're buying feeds

from a reputable source. I think food stored in the refrigerator or freezer may last longer. I encourage clients to discard any food that's over a year old. I had a Betta fish owner who's most recent food was four years out of date."

Article reprinted from "Valley of the Sun Koi Club" Apr. 2006 edition

SHELF LIFE OF KOI FEEDS

Dr. David Salmon, Mazuri® Koi Feeds, Purina Mills, Inc.

In an ideal world you could store your koi feed indefinitely and it would be just as nutritious and wholesome as the day it was manufactured. But feed is made from natural ingredients, and like all natural things will eventually show the effects of time. So how long can you store your koi feed? Perhaps the best way to approach this questions is to look at the specific things that go wrong with feed as it ages.

MOLD

Molds produce mycotoxins (the most well known being aflatoxin and vomitoxin) and while the mold itself is deactivated by heat or other sterilization, the toxins it leaves behind are not. Sensitivity to mycotoxins varies from animal species to species, and the exact susceptibility of koi is not known, but at some level of mycotoxin contamination your fish will get sick or die. Luckily, mold can easily be detected by smell (watch out for that mildewed sock smell), and by visual inspection (watch out for clumpy, discolored feed). Mold spores are everywhere but can only grow in a wet environment with lots of nutrients. Dry feed is a poor place for mold to grow, but wet feed is perfect.

So how long can you store feed before mold becomes a concern? The simple answer is: until your feed picks up enough moisture so that mold can grow in it. For koi feeds packed in vapor barrier packaging (usually poly lined or mylar bags), mold will probably not be a problem for a long time so long as the bag is not opened or compromised in some other way. Once the bag is opened and air gets in, how long it takes for the feed to mold depends upon the temperature and humidity of the ambient air. In a very dry climate (say Nevada) the feed will probably not mold unless it is wet by rain or standing water. In a very hot and humid climate (say Mississippi in the Summer) feed exposed to the air will probably start molding in a couple of weeks.

Refrigeration machinery removes water from the air, so storing your feed in an air conditioned or refrigerated place will help protect feed in an opened bag from moisture pickup.

Summing up: (a.) So long as the bag will keep ambient air out, don't worry. Assuming it was packaged properly other bad things will happen to your feed before mold becomes a problem. (b.) Once you open the bag, in dry cool climates you probably don't need to be concerned so long as the feed doesn't become wet. (c.) In very humid climates either use the feed within a short time after opening the bag or else store it in a cool (less than 65°F) place. Above all, examine your feed and if you see or smell mold or mildew do not use that feed.

Freezing is a good way to extend the shelf life of feed so long as you are careful about how you thaw it out. Depending on ambient temperature and humidity, as the product warms up moisture may be drawn out of the feed and condense as liquid water on the inside of the container, in effect "raining" inside the bag. This water can then wet the feed particles next to the bag wall and cause local molding where the feed touches the bag. The way to prevent this is to open the bag to let it breath when you bring it out of the freezer and, as always, smell the feed before you use it.

VITAMIN C

Like primates and guinea pigs, koi need vitamin C in their diet or they will get scurvy. The most widely recognized symptom of Vit. C deficiency in fish is scoliosis and/or lordosis, although many times these symptoms are manifestations of other problems other than vitamin C (genetics, injury during development).

Also, vitamin C appears to have the following beneficial effects in several kinds of fish: prevents skeletal deformities, promotes normal growth, prevents negative effects of environmental stress, aids in wound healing, lessens toxicity due to environmental contaminants, enhances the natural immunological defense mechanisms against bacterial infection. In short, koi need vitamin C to survive and all indications are that they are significantly helped by vitamin C in high doses when undergoing stress.

The problem is that vitamin C is the most unstable of vitamins and degrades quickly over time; the higher the temperature the faster it degrades. Complicating the issue is that there are many forms of vitamin C, common (unstabilized) ascorbic acid being the cheapest, most common and least stable form. There are more stable forms of vitamin C but these are also more expensive. Purina Mills uses the L-ascorbyl-2-polyphosphate form of vitamin C in our Mazuri® Koi Diets, and warrants sufficient vitamin C for nine (9) months after production if the feed is stored at room temperature (72°F) or lower.

Be aware, though, that the shelf life of other brands of feed may be much less than this. The shelf life of vitamin C in your koi feed will depend upon (a.) How much vitamin C was initially formulated into your diet, (b.) The form of vitamin C in your diet, and (c.) Storage temperature. Your feed company should provide the answer to the first two of these questions and clearly note the date of production on each bag.

VITAMIN A

Vitamin A is also unstable and is generally considered the bellwether nutrient for feed shelf life when vitamin C is not an issue. Even so, vitamin C degrades so much more quickly than vitamin A that it will be critical well before low vitamin A becomes a problem. On the other hand, if you use a feed with no added vitamin C and are relying on some other form of supplementation, vitamin A may become the critical nutrient to consider.

As with vitamin C, Purina Mills warrants sufficient vitamin A for nine (9) months after production if the feed is stored at room temperature (72°F) or lower.

FAT RANCIDITY

Koi require moderate levels of fat in their diets (3% in the case of Mazuri® Platinum Koi Diet) and this fat will eventually oxidize, or go rancid, as it is exposed to oxygen. Besides making the feed much less palatable and giving off unpleasant odors, oxidation destroys fat-soluble vitamins (A,D,E,K), reduces the energy and nutritional value of added fats and oils, and reduces the protein value of animal by-products such as fish meal. Long term, the process of oxidizing fat creates free radicals in the feed, which have been linked to problems such as increased incidence of cancer and immunodeficiency. Most feed manufacturers, including Purina Mills, use anti-oxidants in their feed formulation to slow down the fat oxidation process.

Since high temperatures increase the speed of fat oxidation, you should store your feed in a cool place (72° or less) whenever possible, and at all costs avoid prolonged storage at very high temperatures (say 95°F plus). Fat oxidation virtually ceases when feed is frozen. Luckily, rancid feed has a characteristic off odor, and so can be detected and discarded.

SUMMING UP - GUIDELINES

In all climates, keep your feed dry and regularly examine it by sight and smell to detect the presence of mold. In hot humid climates use your feed within a few weeks after opening the bag or else store it under air conditioned or refrigerated conditions.

Do not store your feed at high temperatures, and regularly smell it to detect the presence of excessive fat oxidation.

The shelf life of Mazuri® Koi Feeds is nine months from the date of manufacture when stored in dry conditions at room temperature (72°F) or less. For other brands of feed please check with the manufacturer for the amount

of vitamin A and the form and amount of vitamin C in the diet. Know when your feed was manufactured before feeding it to your fish.

If you run across interesting articles and/or video's, please send a pointer to the article to newsletter@ras.groups.io

More Info About RAS

Shop RAS merchandise online at <https://raleighaquariumsociety.qbstores.com/>.

Raleigh Aquarium Society Code of Conduct - We expect persons participating in any and all RAS activities to act maturely, to behave professionally, to respect the rights and dignity of others, and to treat everyone equally and without discrimination on the grounds of age, gender, disability, race, ethnic origin, nationality, color, parental or marital status, religious belief, class or social background, sexual orientation or political belief. Anyone experiencing or witnessing a potential violation of the Code of Conduct should contact any RAS board member or reach the board at ras-board@groups.io.

More information can be found online here: <https://www.raleighaquariumsociety.org/code-of-conduct>

Information about **RAS**, its Facebook and email list links, membership purchase, current board members, etc. can be found on our web site: www.raleighaquariumsociety.org