



The Raleigh Aquarium Society

P.O. Box 31564, Raleigh, North Carolina 27612-1564
<http://www.raleighaquariumsociety.org>
raleighaquariumsociety@yahoo.com

March 5th, 2009

Next Meeting: Thursday @7:30pm April 2nd, 2009.

Meetings are held on the first Thursday of each month at the [North Carolina State University College of Veterinary Medicine](#) located at [4700 Hillsborough Street in Raleigh](#). Visitors are welcome! Snacks and light refreshments are provided. A raffle of fish and fish related items follow the meeting. Due to Security Issues, NCSU has required that the doors going into the downstairs lobby remain locked. Please be on time, as we will have a designated person standing by the door to let you in. If you are late, you may try knocking or call Linda Twaddle at 919-880-3782 or John Patterson at 919-264-4011.

Meeting Agenda

De-nitrification and calcification in the modern coral reef aquarium

Bill Gately of Reefkeepers in Clayton will entertain and educate us on two of the important physical/chemical processes in reef aquaria. De-nitrification occurs at a number of locations in the reef tank and, depending on the system style, may be a ticking time-bomb waiting to wipe out your tank. Learn how to avoid the pitfalls and keep your reef long long term. Most reef-keepers use a batch system to add kalkwasser (calcium) to their reefs. This forces the inhabitants to constantly adjust to new environments. Again, there ARE better ways! Come and learn.

Bagging Party

Just a reminder that the Raffle Bag Party will be on Tuesday night, March 3 at 7:00pm at Linda Twaddle's house. For directions contact her at Ltwaddle@yahoo.com

Hope to see you there - Todd's bringing the pizza so come hungry!

Workshop

In case you haven't been to a meeting lately, we wanted to remind you that our annual Workshop is going to be held on March 6-8, 2009 at the Wake County Commons Building, 4011 Cary Drive, Raleigh, NC, so mark your calendar!

Friday night we're having several demos and DIY presentations that I'm sure you will find very interesting and informative. On Saturday, we have a great line-up of speakers again this year that you won't want to miss! Check the club website for the full Workshop schedule and details on the speakers and their presentation topics and times:

<http://www.raleighaquariumsociety.org/workshop/index.html>

On Sunday we have our huge all day auction of fish, plants, corals, tanks, stands and other aquarium related items. Don't miss out!

Registration forms are on the website for your convenience.

If you plan on attending the Native Fish Collecting trip on Friday afternoon, please contact Gerald Pottern at Gbpottern@yahoo.com

If you have any questions please feel free to contact Linda Twaddle at: Ltwaddle@yahoo.com

Hope to see you at the Workshop!



Business Meeting

Business meetings are open to everyone who is interested in participating in Committees, general business of the club and the Workshop and Swap Meet planning. Business Meetings are held on the 3rd Thursday of the month at the NC State Vet School, upstairs in the lobby area as follows:

March 19, 2009

April - no meeting

May - no meeting

June - no meeting

July

August - no meeting

September - no meeting

October

November

December

January

February



ARTICLE INFORMATION:

Author: Robert M. Metelsky

Title: What is Kalkwasser? And how do I dose it?

Summary: Kalkwasser/limewater/calcium hydroxide should be used for water added to make up for evaporation losses. It must be administered with care.

Contact for editing purposes:

email: robert@simplifiedreefkeeping.com

Date first published: 2000

Publication: simplifiedreefkeeping.com

Reprinted from Aquarticles:

January 2004: *The Sea Star*, Wasatch Marine Aquarium Society

ARTICLE USE:

Internet publication (club or non-profit web site):

1. **Credit** author, original publication, and Aquarticles.
2. **Link** to <http://www.aquarticles.com> and original website if applicable.
3. **Advise Aquarticles**

Printed publication:

Mail one printed copy to each of:

Robert M. Metelsky,
Shoreline Resources,
POB 954,
Farmington.
CT 06034
U.S.A.

Aquarticles.com

#205 - 5525 West Boulevard
Vancouver, British Columbia
V6M 3W6
Canada

What is Kalkwasser? And how do I dose it?

By Robert M. Metelsky

*Author of the book Simplified Reefkeeping, 3rd ed. available at simplifiedreefkeeping.com
Aquarticles*

EVAPORATION MAKE-UP WATER & KALKWASSER

Because the tank is exposed to air, and strong pumps are circulating the water throughout the filtering system (overflow pipes, drip plate, prefilter, and protein skimmer), you will get a significant amount of evaporation. In fact, the better your skimmer and the stronger your water pump (both desirable features), the more evaporation you will get. You will need to replace the evaporated water regularly. An important reminder for the new hobbyist is that the water evaporates, not the salt. Do not add salt mix with the make-up water. The result will be a higher salinity than is desirable.

Adding make-up water provides a good opportunity to replenish much-needed calcium, which gets depleted rapidly in an enclosed reef system. This vital element is used by virtually all living creatures. Some of it also gets removed by protein skimming. In my opinion the best calcium additive is “Kalkwasser,” which is calcium hydroxide. It is added on a regular basis by mixing it with the purified water being added to compensate for evaporation. These regular additions of calcium hydroxide also keep the pH elevated to the desired 8.2 to 8.4 level.

Kalkwasser is a German word. Literally, it means “lime water.” Kalkwasser is a trade name for calcium hydroxide. The terms “Kalkwasser,” “limewater,” and “calcium hydroxide” all mean the same thing in this hobby.

The water you use to replace what has evaporated will be called “make-up water.” It is extremely important to use purified tap water mixed with calcium hydroxide (a.k.a. Kalkwasser, a.k.a. limewater) for the make-up water! Do not, I repeat, do not, use regular tap water or anything else for make-up water! This is asking for trouble.

As I have stated from the beginning, nothing will ensure your success more than the quality of your water. Once you have made the investment of a water purifying system and have started the reef with purified tap water, the reef will be accustomed to that quality of water. It would be extremely foolish to try to cut corners here. This is the last place to skimp. In fact, it would be inviting disaster by possibly introducing impurities (metals, silicates, phosphates, etc.) that are harmful and troublesome (hard to remove) into the pristine environment that we have tried so hard to create.

When to add make-up water:

Add the Kalkwasser within a day after you mix it; it gradually loses effectiveness after it is mixed. Watch the water in the sump! This is where you will see the change in water level. Once you have established the “working water level” in the sump, mark it on the side of the sump box, with a magic marker. This will give a quick visual reference as to the height of water that is normally in the system. As evaporation occurs, watch this mark. When the level goes down by 3 to 5 gallons, or gets close to the top of the outlet for the pump, you need to add make-up water. Mix the water no more than one day before you add it to the tank; it starts to lose effectiveness right after it has been mixed. It will have the highest concentration of available calcium just after the sediment settles out of the solution.

On a smaller tank (even a 55-gallon), 5 gallons of high-powered make-up water must be used with caution! Kalkwasser has an extremely high pH. Pay close attention to the drip/dosing flow of water, to be certain that it is administered very slowly. For a 55-gallon tank, you should take a 48-hour period to administer 5 gallons of make-up water. Make sure you test-run your drip method, to be sure that it introduces the desired amount of make-up water over the correct period of time. Adding Kalkwasser too fast will cause pH shock, which can be fatal or, at the least, unnecessarily stressful to the livestock. Take the recommended precautions and do not let this happen!

On larger tanks, 125 gallons and up, 5 gallons of make-up water will not have as much of an effect as it will in smaller tanks. For a 125-gallon tank, the Kalkwasser can be added at the rate of approximately 5 gallons in 8 to 12 hours. In a 200-gallon or larger tank, the 5 gallons can be added without any clamping system, allowing the airline tube to empty the 5-gallon bucket unrestricted. This will take less than 1 hour.

Time of day to add:

Another suggestion is to add the Kalkwasser mix when the tank lights go out, or (ideally) first thing in the morning. While the lights are off, the pH drops, reaching its lowest level the next day just before the lights come back on. If you add the Kalkwasser during this reef “night,” the effect of raising the pH will not be as significant as it would be during lighted hours.

There may be some questions and concerns about adding 5 gallons of Kalkwasser all at once. Yes, some critics may be correct that adding smaller amounts more frequently would be a less risky,

less stressful, and more natural approach. However, I have used my method on tanks from 55 to 200 gallons, with no adverse effects, and I have not lost one creature due to pH shock. You do have to be careful on smaller tanks, but once you get familiar with this system, I'm sure you will find it to be very practical: (1) you will add make-up water less frequently, and (2) on larger tanks (125 gallons and up), you can add 5 gallons of make-up water at a time, which is a significant, convenient, easily measurable amount of water to add.

Do not mix with an airstone; this will add carbon dioxide and oxygen, which will reduce the effectiveness of the calcium hydroxide and defeat its purpose!

Benefits of adding Kalkwasser:

You may be interested in why it is so important to add Kalkwasser. Some of the benefits are:

- * It adds calcium that is needed by most of the creatures in the reef.
- * It encourages the growth of pink and purple coralline algae.
- * It keeps the pH elevated. By adding Kalkwasser on a regular basis (make-up water) and doing water changes every 2 to 3 weeks, I have found my pH to be consistently between 8.2 and 8.4. Keeping the pH at this level makes it less likely that micro-algae will become a problem.
- * The reef just seems to love Kalkwasser.
- * There are many more scientific and chemical reactions that are beneficial. Take my word for it: adding Kalkwasser on a regular basis is one of the most beneficial procedures for maintaining a healthy reef and desirable water chemistry.



Trading Post



Monthly Web Links

[Raleigh Aquarium Society Forum](http://groups.yahoo.com/group/raleighaquariumsociety/) on Yahoo Groups
<http://groups.yahoo.com/group/raleighaquariumsociety/>

[Potomac Valley Aquarium Society](http://www.pvas.com/) in the Washington D.C. area <http://www.pvas.com/>

[Atlanta Area Aquarium Association](http://www.atlantaaquarium.com/) in Atlanta, Georgia
<http://www.atlantaaquarium.com/>

[Carolina Fish Talk](http://www.carolinafishtalk.com/) <http://www.carolinafishtalk.com/>

[Charlotte Area Aquarists Society](http://www.aquacharlotte.net) www.aquacharlotte.net

[Marine Aquarium Society of the Carolinas](http://masotc.net/) <http://masotc.net/>

[North Carolina Koi & Watergarden Society](http://www.nckws.com/) <http://www.nckws.com/>

[Carolina Aquatic Plant Enthusiasts](http://www.ncaquaticplants.org/) <http://www.ncaquaticplants.org/>

[Aquatic Gardeners Association](http://www.aquatic-gardeners.org/) <http://www.aquatic-gardeners.org/>

[KingFish Services](http://www.kingfishservices.net/) <http://www.kingfishservices.net/>



Club Sponsors

*(The following businesses give RAS members a discount on purchases)
You may be asked to show your RAS membership card*

[Aquatica](#) 5533 NC Hwy 42-West, A-16, Garner (10%) **919.661.7790**

[Critter Country Inc](#) 14 Technology Drive, Garner (10%) **919.772.3761**

[Down Under, Salt Water Fish & Corals](#) 1543 US Highway 70 East in Garner. (10%)
919.662.8820

[Fins, Furs & Feathers Pet Center](#) 303 S. Horner Boulevard, Sanford, NC 27330 (10% on everything except tanks) **919.718.0850**

[Fish Pros](#) 5655 Western Boulevard, Suite A, Raleigh 27606 (10%) **919.233.1122**

[Fish World](#) 2205 Westinghouse Blvd., Suite 109, Suite 109, Raleigh (10%) **919.872.1228**

[Pet Mania](#) 7901 Falls of Neuse Rd #125, Raleigh (10%) **919.676.3225**

[Pet Paradise](#) 9101-141 Leesville Road, Raleigh (10%) **919.848.8881**

[The Pet Pad](#) 1347 Kildaire Farm Road, Cary, (10%) **919.481.6614**

[Triangle Tropical Fish](#) 3600 N. Duke St. Suite #36 Durham (10% excluding aquariums and stands) **919.479.0088**

Please contact John Jankowski at raleighaquariumsociety@yahoo.com if you are an active member of the Raleigh Aquarium Society and do not have an up to date membership card. Membership cards can be picked up at any meeting.

The following companies support our club by generously donating goods through Kingfish Services. Please support them by using their products.

- MARS FISHCARE North America
- [Aquarian Flake Foods](#)
- [Aquarium Pharmaceuticals](#)
- Rena
- Pond Care
- [Aquarium Technology Inc](#)
- [Python Products Inc](#)

- [Finley Aquatic Books](#) - Lee Finley
- The Fish Factory - Mike & Robin Schadle
- [Cichlid News](#) - Magazines Subscriptions Available
- [Diskus Brief](#) - Past issues available
- [Discus Hans USA](#)
- [Swiss Tropicals - Poret Filter Foam](#)
- [Eastern Aquatic Blackworms](#) - Craig Shaubach
- [Blue Zoo Radio](#)



Raleigh Aquarium Society

Application for Membership

Membership privileges include:

- Ability to post items in trading post section of monthly newsletter
- A discount card good at participating local pet stores
- All club discounts on club functions
- Education from the most knowledgeable aquarium experts in NC
- Yearly Membership - \$15.00 (includes spouse and children)

(Membership dues run from March 1st each year. New members joining any other time will be pro-rated at \$3 + \$1 for each month remaining in the year.)

Name(s): _____

Date to begin membership: ____/____/____

Address: _____

City: _____ State: _____ Zip: _____

Phone: (____) _____ (2) (____) _____

Email Address: _____

New Membership

Renewal Membership

Mail to:

Raleigh Aquarium Society
PO Box 31564
Raleigh, NC 27612-1564