

*Michael and Carol Herndon
July 24
Education Starts at 3:00*



4905 N Via Entrada
Tucson, AZ 85718
Address Service Requested

Michael and Carol Herndon

2130 N Alvernon

Phone: (520)



Michael and Carol Herndon
400 Walnut Place, Oracle AZ 85623
July 24
Education Starts at 3:00

Take Oracle North and follow it as it turns into AZ 77. Turn Right on to W American Ave, Turn right on Calle Futura, Turn Left to stay on Calle Futura, which becomes Walnut Place.

SAKA, Inc Club Officers

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

Committees/Points of Contact

<i>2010 Pond Tour</i>	Jeanmarie Schiller Tucsonpondtour@yahoo.com (520) 299-1876
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31st Koi Show Co-Chairperson(s)	TBD
AKCA Representative	Debby Young debbyt@akca.org (520) 682-7697
Newsletter Editor	Brent VanKoeving bvankoeving@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	Wanda & Bruce Triebel wkt56@comcast.net (520) 572-0060
Education Committee	Erin Riley eriley@aol.com (520) 818-6490

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

7-15-11

The fire in Sierra Vista missed Curt and Lisa Ogren at Mountain View Koi, but it was a close call. Though they were forced to evacuate, they were able to keep all their fish and plants alive. It should be interesting when we go down there for our annual summer potluck next month.

The high temperatures are bound to have raised your water temperature. Have you checked your thermometer lately? How do your fish look?

If you have friends who think you are a little crazy about your koi hobby, invite them to come to one of our meetings or attend our show. After all, "aren't they just big goldfish?" I don't think so.

Our 32nd Annual Koi Show is rapidly approaching. Be sure to mark your calendars for the second weekend in November. Tell all your friends. We want our turnout to be huge and we want this to be our best show ever.

For the love of Koi,

Bob Panter, President SAKA, Inc.

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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

We need hosts for our September and November meetings. Please contact Brent VanKoevinger if you are interested. You must be a member in good standing to host a meeting.

Business Meeting Minutes

A small number of club members attended and the meeting was led by Dave Young.

The educational topic was "Pond Design for the new "Yume Japanese Garden" on Alvernon. We met the coordinator of the garden project, Patricia DeRidder, who asked for help in designing what will be a 16,000 gallon koi pond. The club surveyed the garden site and discussed what a pond of this size and nature would need to keep koi healthy and require the least amount of maintenace. A suggested plan will be drawn up for this purpose and given to Patricia.

The meeting was called to order by Dave Young at about 3:30pm.

-Jeanmarie reported that post-Pond Tour receipts were \$170 from Harlow's and \$15 from Mountain View Koi.

-Debbie reported that she has confirmed judges for this year's Koi Show as Jan Thompson and Tamara Skaggs (candidate judge). Also, that W. Lim will be donating something for the Raffle.

-AKCA Report: New Chair of AKCA Board is Christine Peterson.

The meeting was adjourned at 4pm.

Jeanmarie Schiller for

Lynn Riley
Secretary

Featured Articles

Flukes: An Update

by DR Eric Johnson D.V.M.

reprinted from AKCA.org

Commonly encountered Flukes belong to one of two classes, either Gyrodactylus or Dactylogyrus. They are distinguishable by virtue of the presence, number, or absence of eye spots, and whether they are oviparous or viviparous. They have been shown to live on the gill, or on the body, hence the names Gill and Body Flukes, but there is considerable overlap. Flukes have been regarded, at least by this author, as one of the easier parasites to diagnose, but harder to treat.

Medications, in order of preference include:

1. The organophosphates, which imply some risk to the fish being treated.
2. The formalin containing compounds, which are famed for their effectiveness, but also their ability to burn

fish and kill filters.

3. Mixtures of organophosphates and insecticides, a group most prominently represented by "Fluke Tabs". This compound contains carbonate insecticide.
4. Praziquantel, which is too expensive for use in ponds, but works nicely in tanks.
5. Last choice compounds would include potassium permanganate, copper, and maybe others. This last choice class is dangerous, to say the least and should be reserved for professional fisheries personnel.

Impediments to treatment with Organophosphates include:

1. The minimum dose is 0.25 PPM but this should be increased in harder water or water with a lot of carbonate alkalinity or a correspondingly higher pH. Organophosphates are bound by carbonates. Used in systems with a pH over 7.4, a hardness over 30 PPM or a total alkalinity over 80 PPM, the compounds need to be used at double and in some cases, based only on serial microscopy, quadrupled strength, to achieve a level that can influence the fluke population. Increases involve two different modifications of either amount or interval, including possible double or triple dosing at .5 PPM or .75 PPM or using the drug twice as frequently.
2. Cold water make organophosphates less safe because the fish do not metabolize the compounds as well as in warmer water. I have treated fish in 55F (springtime) water and seen them go corkscrewing. This is a reversible sign, simply by either changing out some of the water, warming the fish in a holding facility or simply suspending treatment and allowing the fish to revive.
3. Very warm water, over 80F permits the drug to be absorbed far too fast, and at regular dosing intervals, the fish become intoxicated as well.

The Formalin Compounds may Fail:

1. Formalin compounds sink in cooler water and are very hard to disperse for good effect.
2. Formalin is bound by organics so in dirty systems, levels of formalin may not remain high enough to kill adult flukes and intercept emerging larvae.
3. Oxygen consumption by the formalin compounds leaves caustic areas on the surface of the fish and destruction of precious filter bacteria are also hazards of its use.

Formalin is basically Formaldehyde in water. The most common is 37%. Unfortunately, most commonly available preparations contain some Methanol, which contributes heavily to the compound's toxicity to smaller fish. An important point to consider when using Formalin in fresh water systems is that the compound uses or binds free oxygen in systems and the following rule applies: for every 5mg/l (PPM) of Formaldehyde, 1 PPM free oxygen will be used. Formalin's primary use would be only in the treatment of Saprolegnia, (fungus) or Gill Flukes that had not responded to salt. The only other time to use Formalin is if the plants, which might be harmed by salt are more important than the fish. Formalin is used most effectively as a continuous treatment by adding 1cc per 10 gallons water, directly to the system. The most effective way to add it is to drop the water level to half of the pond's volume, then add the amount of Formalin that was calculated for the entire volume. Dump in the calculated amount, wait 2 hours and then top off the pond. You could do a 30 - 40% water change 2 days later and re-apply at full dose using the same drain, treat and top off method. Then repeat 2 - 3 days again, after a 30-40 % water change. A study done in 1976 suggests that Formalin will kill off a substantial portion of your nitrifying bacteria, causing water quality deterioration, in addition to the losses of Oxygen.

Fluke Tabs must be dosed high enough and long enough. Here again, in cool water, the parasites move through their life cycles slowly, so it is important to blanket the system and leave in medication long enough to intercept the emerging larvae. Praziquantel is expensive, but it is also effective.

Praziquantel (trade name - Droncit) is available in a cat and dog form from the Vet. You simply add 2 - 3 PPM to the tank you are deworming.

Understanding Pathogenic Bacteria

By Tom Holder

One of the most important things in keeping your pond and your fish healthy is understanding pathogenic bacteria. There are a wide variety of pathogenic bacteria that can infect your pond. By far the most common are *Aeromonas* and *Pseudomonas*. These two bacteria kill more koi each year than all the other pathogens combined. Understanding how these pathogens live, eat and attack your koi is vital to controlling them.

Aeromonas and *Pseudomonas* cause ulcers (also known as “hole in the side disease”), fin rot, mouth rot and tail rot. If left untreated the damage they inflict will eventually kill the fish. Many hobbyists believe that their ponds do not have either of these bacteria when their fish are not currently experiencing any of the above symptoms. This simply is not true. *Aeromonas* and/or *Pseudomonas* exist in almost every koi pond the world. You must understand that it is possible for koi to be around these bacteria and NOT be infected. Koi have a defense mechanism that helps protect them against these bacteria. This defense is made up of primarily their slime coat and their immune system. It is important not to have a false sense of security because all your fish appear healthy. This can change quickly. The big question is: How much *Aeromonas* and *Pseudomonas* can koi be exposed to without getting sick?

In 2000 when Koizyme was first introduced to the koi hobby, many hobbyists and dealers conducted their own tests to verify Koizyme did what it claimed. Most of these people were kind enough to share their test results, as well as information on the condition of their fish at the time of testing, with Koi Care Kennel. Conducting these tests were relatively simple. A sample of pond water prior to dosing with Koizyme was sent to a lab to determine how much *Aeromonas* and *Pseudomonas* was present. The pond was then treated with the five initial treatments of Koizyme. Once these treatments were completed, another pond water sample was sent to the lab for testing. A comparison of the ‘before’ and ‘after’ test results verified a significant reduction in *Aeromonas* and *Pseudomonas*. At Koi Care Kennel we reviewed test results from around the country and found some most interesting information. One pond that was tested had 22,000 C.F.U.’s (Colony Forming Unit) of *Aeromonas* prior to dosing with Koizyme. Most of the fish were experiencing various degrees of ulcers or fin rot. In this particular pond 22,000 C.F.U.’s of *Aeromonas* were enough to cause problems in the majority of the fish. Another pond tested had 86,000 C.F.U.’s of *Aeromonas* prior to dosing with Koizyme. All the fish in this pond were healthy with no signs of ulcers of any kind. From this example, it can be seen that there is no set level of *Aeromonas* that will cause ulcers. Other factors can enter in to the picture here, such as the virility of different strains of bacteria, etc., however for the sake of simplicity, what is most important to remember from this discussion is that the overall health of the koi plays a huge role in how much pathogenic bacteria a fish can be exposed to and not get sick.

In an effort to help you manage *Aeromonas* and *Pseudomonas* in your pond, I have come up with some terminology that will hopefully help you to visualize the relationship between pathogenic bacteria and koi health. Let me emphasize that this is NOT some scientific theory based on mounds of research, but a simple explanation meant to help the hobbyist understand some basics.

If you had your pond tested for *Aeromonas* and *Pseudomonas*, you would get back from the lab a C.F.U. count telling you how much pathogenic bacteria was in your pond. Imagine this number as a RED LINE representing the pathogenic bacteria level in the pond posing a threat to the fish. As mentioned earlier, fish have a defense mechanism against pathogens. Each fish has its own individual tolerance level to the RED LINE based on the condition of its slime coat and the strength of its immune system. Now take a number of C.F.U.s that represents the *highest* level of pathogenic bacteria that an individual fish can be exposed to *without* getting sick. Imagine this number as a BLUE LINE. To have a totally healthy pond with no sick fish, each individual koi would have a BLUE LINE higher than the RED LINE of the pond. For example, if an individual koi had a BLUE LINE of 25,000 C.F.U.s (the highest level of pathogenic bacteria he could withstand without exhibiting symptoms) and the pond’s RED LINE was 18,000 C.F.U.s, the fish would remain healthy and safe. On the other hand, if this individual koi’s BLUE LINE was 15,000 C.F.U.s, it would be sick because it could not tolerate the 18,000 C.F.U.s in the pond.

Let me give you a classic example of how this relationship works. This example may also help some koi dealers and hobbyists the next time a dealer is blamed for selling a “sick” fish. A hobbyist we’ll call “John” has had his pond for some time and for the past three years all his fish have been healthy with no infections or problems. John decides it is time to finally go out and buy that special show quality koi he has always wanted. He visits his friendly koi dealer, looks around and sees nothing but healthy, beautiful fish. He feels confident in spending the money for the koi he has always wanted. He buys it, takes it home, and quarantines it for three weeks. Lets say he even treats it for parasites and flukes during the quarantine period. At last, he puts it in his pond and it gets sick with ulcers and fin rot. How many times have you heard John say it was the dealer’s fault. John’s collection has been healthy for the past three years. His pond is not the problem, just look at his healthy fish.

Lets take a look at what could have happened:

John's pond had a RED LINE of 40,000 C.F.U.s. All his fish were healthy. They had BLUE LINES of lets say, 45,000 C.F.U.s.

Now, lets look at the dealers pond. He works hard to keep his ponds clean and healthy. When tested, that show tank had a RED LINE of 10,000 C.F.U.s. The fish John bought had a BLUE LINE of 20,000 C.F.U.s. It was healthy in that show tank when it was sold. But what happens when that fish with a BLUE LINE of 20,000 C.F.U.s is put in a pond with a RED LINE of 40,000 C.F.U.s? It gets sick because it cannot tolerate that level of bacteria.

Obviously, this scenario does not pertain to sick fish being bought and sold. But it is easy to see what can happen with the red line and blue line when moving fish from one pond to another without knowing what the RED LINE value is in each of the two ponds. Even if you did know the pathogenic bacteria levels in the two ponds, it how do you determine the BLUE LINE of the fish being moved. What can you do?

Fighting the battle on two fronts

Keeping your koi healthy and your pond healthy is a battle. And it is a battle you want to fight on two fronts. On the first front you want to work on lowering the RED LINE in your pond. That is, you want the pathogenic bacteria level as low as possible. You do this by focusing on good mechanical filtration to remove the koi waste as quickly and as thoroughly as possible. Use Koizyme to combat the proliferation of Aeromonas and Pseudomonas. At the same time you want to work on the second front, raising the BLUE LINES - the ability of the fish to tolerate pathogenic bacteria. This means raising the overall health of your fish, and strengthening their immune system. To accomplish this, water quality must be kept as high as possible. Check ammonia, nitrite and nitrate levels keeping them within acceptable limits. Do periodic major water changes. Diet is very important to the overall health of the fish. They are what they eat. Feed a quality staple food, and vary their diet. Feed collard greens, kale, romaine lettuce, citrus fruit, watermelon, and defrosted frozen peas. Adding a paste food as a way to get extra vitamins and fatty acids in your kois diet is always a good idea. See our website for a paste food recipe that the fish love! (www.Koizyme.com)

Another factor that can dramatically affect the relationship between the RED LINE and the BLUE LINE is parasites. In fact, it throws the red line/blue line relationship right out the window. Parasites can bore through the protective slime coat of the fish allowing any existing opportunistic pathogenic bacteria to cause ulcers regardless of the BLUE LINE. Even with an extremely low RED LINE in your pond, the moment parasites are introduced, secondary infections from the existing pathogenic bacteria, no matter how few, can occur. Keeping your pond parasite free is critical to maintaining healthy fish.

It is easy to assume that when ulcers develop, an Aeromonas problem exists. However, if the pond is well maintained and the fish are well cared for, parasites could very well be the problem. A microscope is needed to confirm the presence of parasites. If you don't yet have a microscope, you really ought to get one. It is a necessary tool in the koi hobby. Check with your local koi club to see if you can get a member with a microscope to help you take a scraping of your koi. If you don't have access to a microscope, then it may be a good idea to treat for parasites anyway. Use a safe and effective parasitic treatment such as PROFORM-C. This product can be used in water temperatures as low as 50 degrees (F).

Ultimately, the main goal is to get the RED LINE as low as possible and the BLUE LINE as high as possible. Good mechanical filtration to remove koi waste and the use of Koizyme is the most effective way to lower the RED LINE in your pond. Raising the BLUE LINE of the fish is achieved by giving attention to providing a healthy diet and insuring the best water quality possible. Keep in mind stress will lower the BLUE LINE of a koi quickly, and remember that as the seasons change and water temperatures fluctuate, the koi's immune system is affected, thereby lowering the BLUE LINE of the fish as well. The bigger the margin between the RED LINE and the BLUE LINE the better the chances the fish have of staying healthy.

You can win the battle against pathogenic bacteria if you fight the battle on BOTH fronts .

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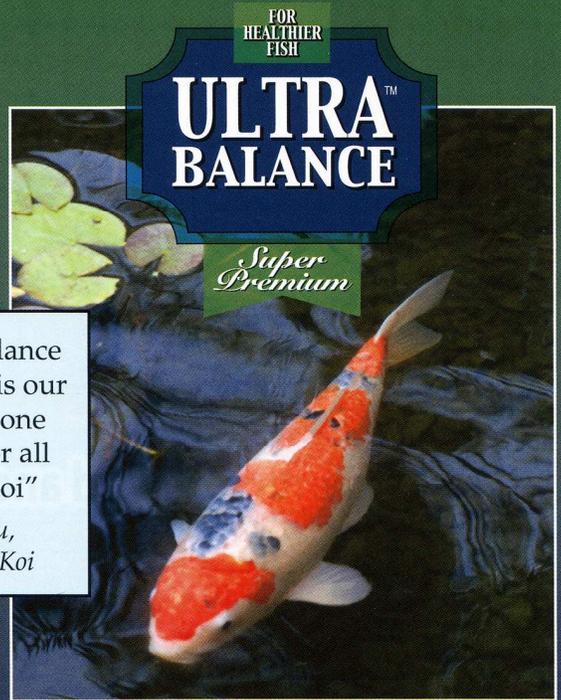
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If you have suggestions for the newsletter or items to be included in Karawagoi Corner or the Calendar, Please contact Brent VanKoevering at 520.780.3980 or bvankoevering@longrealty.com.

Upcoming SAKA Education and Business Meetings

Date	Location
July 24, 2011	Michael and Carol Herndon
August 28, 2011	Curt and Lisa Ogren. Mountain View Koi.
September 25, 2011	
October 23, 2011	
November	No Meeting. See you at the Show.
December	Brent VanKoevering

[Shows, Pond Tours and Seminars](#)

Event	Dates/Location/Links
November 11-13, 2011	Annual SAKA Koi Show Sam Lena Park



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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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