

test

BY MICHAEL D. COX



With such a critical role in a pond's lifecycle, consumers need to know which type of koi clay is the highest performing and most cost effective.

Consumer Report: Koi Clay Mysteries Revealed

KOI Nations puts seven companies to the test to get to the facts, not the claims

THE FIRST-EVER *KOI NATIONS* consumer report focuses on the importance of koi clays. With such an critical role in a pond's lifecycle, consumers need to know which type of koi clay is the highest performing and most cost effective. To find out, *KOI Nations* commissioned an objective special consumer test to find out the results of these questions, and more.

With the help of Vicki Vaughan at the University Of Georgia's Koi Lab, we sent eight samples to the University to conduct our test. It is important here to point out that our test was conducted in a wet state. Dry powder was not tested because this was the only way to see what the clay does when it is in a wet state in your pond.

The surprising result was *KOI Nations* did not end up with one clear frontrunner in all categories. Depending on your budget and water parameters, you may be surprised to find out which clay works best in your pond.

The procedures for the test went as follows: We purchased eight one-gallon jugs of Sodium-Free drinking water from Wal-Mart. This water was selected to keep any unwanted minerals out of the water to be tested

Each gallon of water was loaded with one tablespoon of koi clay and measured on a digital scale to ensure the accuracy of each dose. Interestingly enough, the dosages weighed differently depending on what brand they were. After mixing the clay and water, the mix was poured into vials provided by the University of Georgia. From there, they were packaged and sent to the Koi Lab where they were analyzed for various elements.

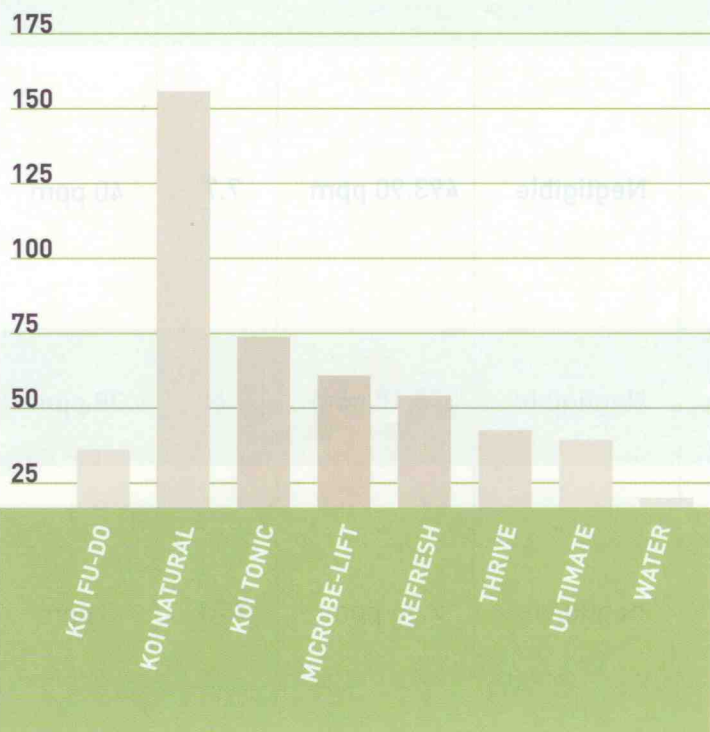
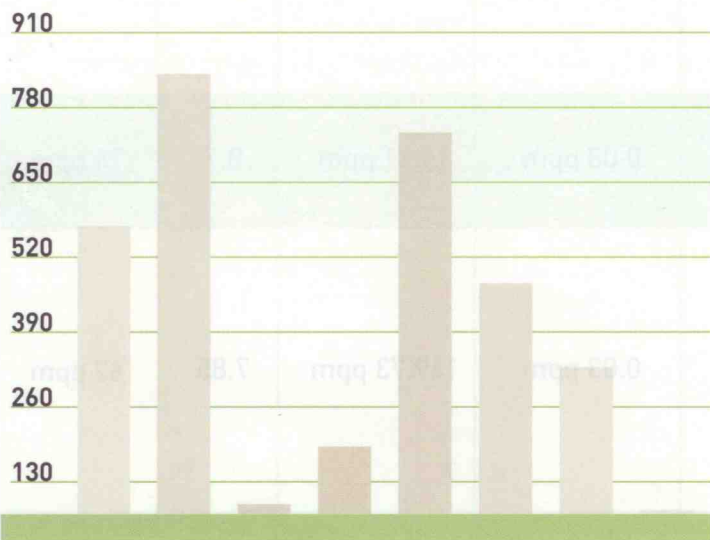
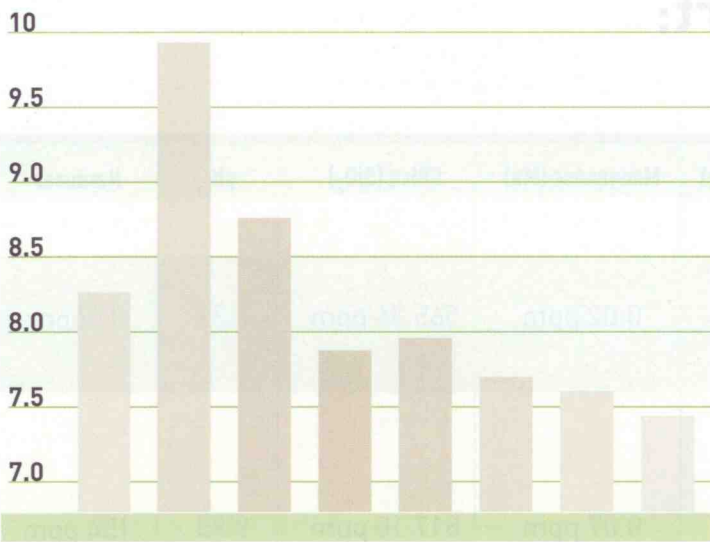
Here you will find the results of each individual test and our findings and recommendations.



KOI Nation's Consumer Report:

Koi Clay

	Calcium (Ca)	Iron (Fe)	Magnesium (Mg)	Manganese (Mn)	Silica (SiO ₂)	pH	Hardness
KOI FU-DO 	4.0 ppm	1.70 ppm	5.1 ppm	0.02 ppm	565.34 ppm	8.32	31 ppm
KOI NATURAL 	17.5 ppm	58.52 ppm	26.9 ppm	0.07 ppm	817.10 ppm	9.95	154 ppm
KOI TONIC 	23.7 ppm	10.77 ppm	3.6 ppm	0.08 ppm	15.91 ppm	8.7	74 ppm
MICROBE-LIFT CMC 	11.9 ppm	6.04 ppm	7.8 ppm	0.03 ppm	169.73 ppm	7.85	62 ppm
REFRESH 	9.0 ppm	4.21 ppm	7.8 ppm	0.14 ppm	754.85 ppm	7.96	55 ppm
THRIVE 	9.3 ppm	2.60 ppm	4.2 ppm	Negligible	493.90 ppm	7.7	40 ppm
ULTIMATE KOI CLAY 	8.5 ppm	2.62 ppm	4.0 ppm	Negligible	338.18 ppm	7.65	38 ppm
SAMPLE WATER 	0.9 ppm	0.01 ppm	0.3 ppm	negligible	2.76 ppm	7.41	3 ppm



pH

It is desirable to keep **pH** levels at a range close to the blood pH of your fish, which on average is 7.4. With that in mind, a good pH would be between 7.4 to 8.5 in your pond.

Looking at our graph you can see that all of the clays are within these ranges. However, the **Koi Natural** brand tested at a pH of 9.95. This is a good time to point out that pH levels above 10 will cause your fish to become extremely stressed at best and most likely die from it.

This is something to take note of if you already have high pH levels or you get severe algae blooms. As a side note, ammonia also becomes much more toxic at higher pH levels. These things in conjunction with this clay may have an adverse effect on your koi.

On the flip side if you have a low pH problem that you are always chasing this may be a cure for what ails you.

SILICA

Silica is a very important line to look at since one of the reasons for adding the clay in the first place is to remove impurities from the water. The finer the clay, the higher your silica ppm number will be and the better it will work to help grab impurities from the water.

Koi Tonic is very dense not near as fine as the others and as you can see from one of the photos it turns your water red.

The clear winner here was **Koi Natural** with 817.10 ppm, but you need to take into consideration the high pH of 9.95. If you have a low pH, then this might be the clay for you.

If the high pH is a concern for you, then you will want to go with **Refresh**, which has a reading of 754.85 ppm.

WATER HARDNESS

Water Hardness is very important in our hobby. Calcium and magnesium are divalent ions that are in our water. Besides being the most common sources of water hardness, calcium and magnesium are essential to the biological process of bone and scale growth, blood clotting and other metabolic reactions.

Calcium also helps to reduce the loss of other minerals such as sodium and potassium from the fishes blood. Sodium and potassium are vital in helping with normal function of the heart, nerve and muscle functions.

100 to 250 ppm of calcium hardness is desirable and a reading of 75 to 200 ppm for alkalinity is desired.

A measure of 250 ppm matches the calcium concentration of fish blood. Heavy metals such as copper and zinc are toxic to our fish. High concentrations of calcium and magnesium block the damaging effects of these metals.

Based entirely on calcium addition **Koi Natural** beat them all for the top spot with **Koi Tonic** close behind.

Please remember we are looking for the big picture though.

KOI NATION'S BOTTOM LINE

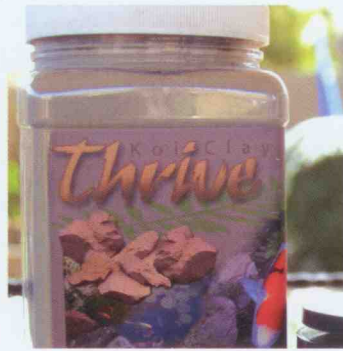
KEEPING IN MIND that finding the perfect sample is difficult. The fact is there are a lot of variables that need to be processed before you make a final decision. The fact is the best clay for you and your pond is not always what everyone else is using or because the company of brand X has a great marketing campaign.

Here are the top three brands based on their overall performance in this test.



1. REFRESH

Not the highest Calcium count but still solid. Has good Magnesium. A great Silica number at 754.85 ppm. **Refresh** also has Manganese at 0.14 ppm, which is said to help promote growth in our koi. The downside about Refresh is its price tag at about \$88.99 for 5 kg/11 lbs. but, if money is no object you can't go wrong.



2. THRIVE

Thrive has good Calcium, Magnesium and Silica counts. Thrive is also priced well at \$24.99 for 8 lbs., which makes Thrive the best all around value for the money clay.



3. ULTIMATE KOI CLAY

Ultimate Koi Clay has respectable numbers and is the lowest priced clay of the three at just under \$18.00 for a 6 lb. box.

WANT TO KNOW MORE?

The complete and detailed test results are available via PDF on our Web site at www.KOINATIONS.com. Reference materials and consultation were provided to us by Dr. Roddy Conrad. Reference material: Southern Regional Aquaculture Center Publication No. 464

FIND COMPANIES ONLINE

KOIFU-DO

www.koifu-do.com

KOI NATURAL ENHANCER

www.ebay.com

KOI TONIC

www.koitonics.com

MICROBELIFT

www.microbelift.com

REFRESH

www.google.com

THRIVE

www.pondclay.com

ULTIMATE KOI CLAY

www.koiclay.com



Michael D. Cox lives in Phoenix, Arizona. He is the publisher of *KOI Nations* and an avid koi collector and former United States Marine.

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