

Shinsuke Co., LTD. English Summary

Shinsuke Co., LTD. BRAND

BRAND CONCEPT

Shinsuke Co., LTD was established to develop products to enhance the environment that Japanese Nishikigoi are kept in.

Our concept is “*Making koi more beautiful with the ideal surrounding.*”

Nishikigoi quality can be affected by their environment therefore we explore nature and the original beauty of Nishikigoi, to promote more natural water.

I have visited many koi shows as a judge and have also had the opportunity to deal with the koi business world, and in my opinion Nishikigoi will always be more beautiful if the water quality is the same as nature.

First, I thought about the factors involved in causing Koi to lose colour and brightness, which are ultraviolet rays, bad water, chemical medicines, minerals, and the condition of the koi.

Today we live with much stress and koi are the same. Therefore we need to consider reducing the stress of koi in order to keep them in good condition.

Our ideal environment for Nishikigoi is the water of the mud pond. To make water in a concrete pond the same quality as in the mud pond, we believe the following are required as minimum rules to produce ideal water for koi:

1. Ammonia and Nitrite levels close to zero.
2. Levels of Nitrite always below 100mg/l.
3. Clear water to allow penetration of sunshine and ultraviolet.
4. Consistent pH levels.
5. Sufficient mineral levels within the water.

In these conditions we can breed high quality koi that have beautiful bright skin and also grow well.

Shinsuke Co., LTD. English Summary

When considering how to provide the optimum environment for koi, the Shinsuke Co., LTD. recommends “*The Bio film theory*”.

What is Bio film?

Bio film is formed by microbes and examples of this are dental plaque, the slime on a stone in the liver, the gel film in a week-old vase of flowers, etc.

We can find many variations of Bio film in nature, where there is water and a source of bacteria.

It is true to say that almost all bacteria on the planet (over 99%) lives on Bio film, rather than floating in the air, and sewage treatment plants depend on Bio film for bacteria to make water clean.

Shinsuke Co., LTD. has developed products using Bio film theory to provide a high quality environment for making koi more beautiful, and these are:

1. Filter sand
2. Bio sponge

Filter Sand

Filter Sand is revolutionary and keep pH stable.

It does this by taking out Nitrogen when there is Oxygen in the water.

Normally organic matter is decomposed as following;

Organic matter* → Protein → Ammonia → Nitrite → Nitrate

(*microorganism and phytoplankton corpses, koi food, koi mucosa etc)

Filter sand includes facultative anaerobic bacteria which reduce nitrate to nitrite and change nitrite to nitrogen gas.

The activity rate of Filter Sand goes up after 3-5 days from start of use, dependent on water quality and temperature.

If the water quality is initially poor, then the activity rate will drop until the water improves. If this occurs we recommend that the same amount of Sand Filter is added after one or two weeks.

Our experiments show that both of ammonia and nitrite start to decrease a week after adding Filter Sand.

Algae levels also decrease, which is better looking and better for koi.

There are over ten kinds of Aerobic bacterium in Filter Sand;

Heterotrophic bacteria: Decomposing organic matter into inorganic matter.

They decompose protein, carbohydrate and fat into inorganic matter.

Autotrophic bacteria: Decomposing inorganic matter into smaller matter.

They decompose ammonia into nitrous acid, nitrate, and nitrogen gas.

Bacterial work

As the bacteria act they generate energy, as well as making vitamins and antibiotics (effective into mould) as by-products.

Some of the bacteria within Filter Sand also produce an enzyme which forms structures to promote bacterial growth. In addition this is used by other living things, helping the formation of an effective ecosystem.

Filter sand includes anaerobic bacteria, (which can act on nitrogen removal without

Shinsuke Co., LTD. English Summary

oxygen being present), facultative anaerobic bacteria (which can act on nitrogen removal with oxygen), aerobic bacteria, and another 10 kinds of bacteria. Each bacteria is compounded from 10,000 to 10,000,000 pcs /g.

Amount used of Filter Sand

Amount	Water amount
10kg	1,000 ton
1kg	100 ton
500g	50 ton
100g	10 ton
10g	1 ton

Shower Filter Sand on filter material in water directly.

Filter sand is a natural mineral, and you may see white 'sand' in water; this is not a problem.

- Add air into filter for bacteria activation.
- Add Filter Sand into filter once a month periodically.
(It is more effective for bacteria to put Filter Sand division.)

There is a big difference between the natural mud pond and the enclosed house pond. In the natural mud pond there are less stocking levels and the natural filter system of mud and sand.

In the house pond stocking levels are higher, causing the filters to have to work harder. The activity of the bacteria is the most important area for keeping good water in closed ponds.

House ponds are also prone to sudden changing of water quality, which may harm the filter bacteria.

So it is very important for keeping good water to add 5g/ton of Filter Sand once a month.

All medicine breaks pond quality.

Medicines used to prevent koi from diseases affects all bacteria, including those in the filter, which means that after use the water quality becomes worse and the fish have more diseases.

“ Bacteria” are key for keeping good water.

Shinsuke Co., LTD. English Summary

Classification	Variety	Action
Aerobic bacteria	<u>Strictly aerobic bacteria</u>	Need oxygen for growth. Higher density of oxygen than air is harmful for them.
	Slight aerobic bacteria	Lower density of oxygen than air is enough for growth. They cannot grow in high density of oxygen.
Anaerobic bacteria	<u>Strictly anaerobic bacteria</u>	They cannot use oxygen to grow, and oxygen is harmful to them.
	<u>Facultative anaerobic bacteria</u>	They can use oxygen, but grow without oxygen.
	Resistant anaerobic bacteria	They cannot use oxygen to grow, but oxygen is not harmful to them.

Shinsuke Co., LTD. English Summary

Bio Sponge

We are pleased to announce the best filter material for decomposing organic matter – the Bio Sponge.

Other filters are able to clear away any waste and excrement, but cannot remove other organic material, such as mucous membranes, koi urine, zooplankton carcass, phytoplankton and other microscopic organisms, as well as protein from food. Only bacteria can remove all of these.

The important feature of Bio Sponge, which separates it from other filter material, is its ability to form BIO FILM, and it is within this BIO FILM that these important bacteria are present.

The material of BIO SPONGE is a particular sponge-like material, specifically invented and designed for forming BIO FILM. As such, Bio Sponge has a high retention ratio for bacteria, which is hard to reduce, even when located under water or by exposure to ultraviolet rays.

In my opinion, the most important factor for breeding high quality koi is water quality, and the best combination to control water quality is Bio Sponge and Filter Sand.

When considering previous practices, filter mat and brushes have been used for years in the koi-breeding world, however they are only efficient at collecting rubbish/waste, which can then turn into sludge. Therefore, it is not too much to say that the combination of filter mat and brushes, is a way of producing sludge in a filter.

Sludge is bad organic matter and is a main cause for deterioration of water quality as it causes the pH to drop. Also, sludge produces germs and increases the risk of disease and illness in the koi pond.

So in summary, filter mat and brushes can contain and collect waste, but cannot clean water.

It's important to point out that there are two types of filtration. First there is the physical filtration, that means rubbish is collected, this may be by filter mat and brushes. Second, there is the biological filter, which is where the waste is resolved into inorganic matter. We can say that filtration only works efficiently with both of them. There are many filtration systems where the biological element is not as efficient as it should be. It is not

Shinsuke Co., LTD. English Summary

to say the filtration is without bacteria, but we can easily differentiate between bacteria working well and not well. One example of this is where there is white froth on the surface of pond; this means the bacteria are not working as well as they need to be, and this could cause diseases for koi.

Outbreak of diseases

Sudden environmental changes, and keeping koi in poor water, are amongst the reasons for koi to fall subject to diseases.

They say that *Aeromonas* is an infectious disease, but is it true?

In my opinion, *Aeromonas* and *Cytophaga columnaris* are normal bacterial flora in a koi pond. It is only if the balance of the koi pond ecosystem is upset, or koi have a weakened immune system, that *Aeromonas* and *Cytophaga columnaris* can run riot.

Many outbreaks of diseases happen when there are multiple stressors, all at once, in the koi pond; with the result that the baby koi, and those with little strength, end up dying.

The causes of common diseases are:

1. The water quality is not good for koi.
2. Wrong keeping by immature koi keeper.
3. A sudden change of water quality (PH shock), for example, moving from mud pond to concrete pond.
4. Damage to the koi's mucus, for example, caused by nets.

The ways of preventing these common causes are:

- 1, Keeping good quality water for koi, with active bacteria.
- 2, Keeping koi in enough space, with a good filter system, and less water changes, (for as long as possible).

Ammonia and Nitrite are poison for koi, so let's change places for a moment - koi with human. How would these conditions affect humans if we were kept in a dirty pond with Ammonia and Nitrite?

I give you this story for explanation.

I visited Alaska with my four friends by car. The temperature was -20 degrees and if we opened a window, we would be frozen immediately. The driver and his friend were sitting up front, and both were heavy smokers, and they abruptly started to smoke once the car left for Alaska. Soon the air in the car turned smoky and the two of us sitting on the backseat felt stuffy, and tried to open a window, but the window was frozen and would not move. Over time, the car became the same as the smoking room at Tokyo station or

Shinsuke Co., LTD. English Summary

airport. In such a situation, we had to stop regularly, causing the journey to take much longer. As you can see, in this situation, it would be easy for us to get sick.

We regards to clean and good water for koi, there is the current compulsion to have drum filters on our ponds. Most definitely the water looks clean, but from the koi's point of view, "What choking water!"

The water looks very good quality, however, in fact there is a lot of Ammonia and Nitrite in the water, the same as smoke in the car.

Koi will want to run away from these ponds right now, and they are losing their appetite.

Koi cannot live without bacteria. We cannot breed koi without bacteria.

HOW TO USE Bio Sponge

No need to wash.

Use at a ratio of one bag of Bio Sponge for one ton of water.

Bio Sponge includes many kinds of natural minerals, which dissolve into the water, little by little.

HOW TO SET UP Bio Sponge

Place the Bio Sponge into a Resin net; I advise using a tartan net with a big pattern. Where a small pattern net is used, the water flow will be slowed, causing the Bio Sponge to be less effective

Fix the nets of Bio Sponge onto a frame, and make the frame fit to your filter length and width.

You can put one or two stages of BIO SPONGE into each Resin net.

We call "ONE UNIT" like this picture.



Shinsuke Co., LTD. English Summary



Fix Bio sponge tight.



We put two stages of Bio Sponge in this picture.

Shinsuke Co., LTD. English Summary

Mineral plus

Mineral Plus is our new product, developed on our Shinsuke Co., LTD. concept, “*Making koi more beautiful with the ideal surrounding.*”

It is based on the question of how to bring out a koi's potential beauty as much as possible?

The answer is that it depends on water quality - we need the water in the pond to be the same quality as mud pond water.

With this in mind, we succeeded at making “Japanese mud pond water” with a special material composed of Japanese minerals.

This is Mineral plus.

Koi are moved from house ponds into mud ponds from the beginning of May each year.

Why are they moved?

- 1, To promote koi growth in such a vast surrounding.
- 2, Avoiding heating too much during summer.
- 3, Keeping the koi in water that includes many minerals so that the koi skin will be bright.

There are other reasons but we aimed at those above and started to develop new products based on them.

We believe that koi feed on zooplankton and phytoplankton, and that plankton naturally contains minerals.

One of the strong points of keeping koi in mud ponds is that mud pond water includes plankton, which has plenty of minerals, making it the best environment for koi.

What's more, the minerals from the mud itself, are also very important for koi.

On the basis of the above, we aimed to add minerals into pond water, to make pond water the same quality as mud pond water.

We experimented with our Mineral plus at five koi farms and results were excellent. After four to six weeks the SUMI on both Showa and Shiro varieties improved.

This was even though we developed Mineral plus not for SUMI, but for it to produce the best environment by improving water quality.

In fact, the skin of many of the koi turned out to be brighter and polished once the koi breeder added Mineral Plus into their ponds.

We would love for you to use our Mineral plus for making your koi more beautiful.

Shinsuke Co., LTD. English Summary

I give you one story.

1993, Cairns in Australia, I received a lecture on coral and learned the importance of minerals at coral school. I found that both humans and fish can live by virtue of harmonious mineral.

The lecturer told us that they used artificial seawater for coral culture.

Seawater is comprised of salt, calcium, magnesium, potassium, iron, molybdenum, to name just a few components. That is to say, seawater is made of salt, and a lot of minerals. When even just one of them is lacking from seawater, then the coral cannot grow well.

Humans and koi were born from seawater (all livings have roots in the sea) and we need to know that minerals are very important for all.

After all, why are organic vegetables better for us? Once you consider this, you begin to observe that we need minerals to breed beautiful koi.

From the lecture I could understand how humans and all living beings were born from the sea, and I learned that once we unbalance the minerals, we would get sick easily and find it hard to keep healthy.

Today we see many advertisements on TV for beer and drinking water which emphasize "MINERAL". I also heard at the lecture that amniotic fluid in mothers and the fluid in our tears, is the same as seawater quality.

From this experience I developed Mineral.

As you know, after koi harvest, the koi are more beautiful and bright! So why is it difficult to make koi beautiful and bright in concrete ponds, the same as koi from mud ponds? It is due to the amount and varieties of minerals present in the water.

Fish have an ultimobranchial body that secretes calcitonin. They say the internal organs can take in oxygen directly.

We consider this and produced a product that uses an organic acid that occurs in concrete pond for ionizing minerals that are easy for koi to assimilate. Koi cannot make minerals in their body.

The minerals work on mitochondria, improving the immune strength of the koi. This helps koi to stay healthy and prevents any diseases.

Ionized minerals are taken into the koi from mouth and gill and pulsed blood. Blood including these minerals is sent throughout the body. Each cell has a mouth and vent and cells take minerals and oxygen into the mouth and discharge waste from vent. If a koi has a lack of minerals, it would be weak and get sick easily. Once there are enough minerals in water, the koi's mucus cell and pigment cell would be active, resulting in bright and beautiful colors. The koi are able to keep in this better condition for longer.

Shinsuke Co., LTD. English Summary

Our new product acts very much like a medicine.

Sometimes koi might have a poorly balanced diet, affecting the color of the skin. Mineral plus includes minerals that make melanocytes active.

Mineral plus also contains a special element from the mud, and it is our top secret, very special element.

We are proud of our revolutionary Mineral plus.

The powder mineral of Mineral plus is dissolved by an organic acid that occurs in pond water.

An organic acid occurs when waste decomposes into an inorganic substance. Once an organic acid occurs, the pH falls. There is no pond water that is increasing pH naturally. Many people put oyster shells into the pond or filter to prevent a pH drop. Once we use them, the pH goes up but the water hardness goes up too. They make the water hard. Hard water tears mucous membrane from a koi's skin and the koi's skin is worn to rags.

The best materials to maintain pH levels are Bio Sponge and Filter Sand!!

Direction

- 1: please put 5-10g of Mineral plus into 1 ton of water, once every one or two weeks.
Once the temperature starts to warm, algae will grow and this will make the water clean and you can use less Mineral plus.
- 2: Add a little water and make a ball with the Mineral plus. Please put the ball into the final stage of the filter.
- 3: Please put some Mineral plus into a bag and hang it in the final filter and shake it once a week.

Note: If you have something wrong in your pond, please stop using Mineral plus straight away.

Water quality is different in each area so please adjust the quantities as needed.

Healthy Up (White color become clear!)

Healthy Up is a *function koi food** made from fermented shell crabs, blended with chitosan, chitin, chitosan oligosaccharide and natural carotenoid.

* We call foods that have antibacterial, immuno-reactivity and other properties "*Function koi food*".

Healthy Up is blended to contain many kinds of vitamins to keep your koi healthy!

There are many effects of Healthy Up, one of which is the improvement in blood circulation. With koi having such a significant volume of small capillary vessels, their blood needs to be smooth to send minerals throughout the body. The benefit of this is that cells can then efficiently excrete waste and endotoxins, resulting in a healthy metabolism and overall better conditioning. This also helps prevent the koi from being susceptible to disease.

For example, the cause of yellow tinted skin is endotoxins, so improving their removal reduces the unwanted tint.

Healthy Up works on the koi's mucous cells, pigment cells, as well as the internal organs; this means the skin become clear and blight, resulting in a healthy complexion.

The skin definitely becomes cleaner!

The gloss is also better!

Do you want evidence?

In June 2014, Sakai koi farm started to use our products for koi feeding on colour food. Before, their Sanke had yellow skin, but this became clear white and bright after using Healthy Up and Mineral Plus.

Healthy Up made the koi's blood flow smoothly so that it could send enough minerals (provided by Mineral Plus) to all cells. At the same time, the koi were able to excrete unwanted matter more efficiently.

Mr. Kentaro Sakai said that it was the first time his koi had such clear skin when feeding colour food in high temperatures.

Shinsuke Co., LTD. English Summary

As previously mentioned, the cause of the yellow tint is body waste (endotoxins). The sending of Mineral Plus and oxygen to each cell causes them to revitalize and excrete yellow body wastes.

However, koi do not have big blood vessels, mainly small capillary vessels. As such, smooth blood is very important for koi to help mucous and pigment cells function efficiently.

One final consideration is about bright and excellent skin, which we are all interested in for koi.

To begin, it is important to acknowledge that there is a difference between good and bad mucus.

If the water quality is bad or lacking of minerals, then the koi will exhaust their energy reserves and the mucus layer will decrease, resulting in mucus unevenness.

In addition, the remaining mucus would be poor in quality, watery and not bright.

Also important, is that without the mucus barrier, the koi becomes more prone to infection from virus. Healthy mucus layer produces lectin which hardens virus, and lysozyme which dissolve virus.

Benefits to Koi

- To combine minerals (- ion) each other. → Improves capacity for koi to take minerals into the body
- Replacement of safety antibiotic (it makes pH stable and advance growth; same effect as antibiotic).
- To adjust the function of the intestines (reduce harmful bacteria and increase useful bacteria).
- Higher resistance to virus, an anti-inflammatory action and reduction of stress.
- Strengthen the immune system and protecting mucosa, resulting in Whitening effect (*Healthy Up make mucous cell revitalize, resulting in excellent and bright skin).
- Vitamin A prevents virus from coming into the body.
- Stops increase of bacteria and virus (bacteria removal, antimicrobial).
- Colours are up
- Ageing prevention with hard anti-oxidant action.
- Spawn eggs increasing.
- Higher percentage of hatch.
- It has been confirmed that function of koi's brain, liver, muscle and egg cell are better.

Shinsuke Co., LTD. English Summary

Effect mechanism

When microbes infect live animals, the protein called lectin on the surface of the microbe combines with carbohydrate on the surface of the host cell. Therefore preventing this is a good way of stopping the growth of pathogenic bacteria.

Chitin and chitosan also have a strong bonding power with the protein that is on the surface of intestinal epithelial cells, which means their presence can reduce the potential for pathogenic bacterial growth.

Effective microorganism such as lactic acid bacteria and lactobacillus bifidus grow up with chitin, chitosan and chitosan oligosaccharide.

And chitin, chitosa and chitosan or oligosaccharide make effective microorganism from intestinal microorganism.

Direction

- 1: feed koi food alongside Health Up.
- 2: Moisten koi food and dust with Health Up.
- 3: Mix water and honey, sprinkle this onto koi food, followed by Healthy Up. Mix this all together and then feed.

Note: single use - please use up once the seal is broken.

Shinsuke Co., LTD. English Summary

Progress of pH with Filter Sand and Bio Sponge

We carried out an experiment on the pH levels of the water at a koi farm, before and after using Filter Sand and Bio Sponge.

From 7th to 9th January 2013, we placed Bio Sponge and put Filter Sand in the Up and Down filters, immediately after washed filter mat.

In the past we had used calcium carbonate in the pond when the pH dropped, but calcium ions enter the water, and the water hardness increases, which is not good for koi skin.

Oyster shell is the same as calcium carbonate.

After using Filter Sand and Bio Sponge, the pH of the water remained stable. As a result the koi had very good appetites and their skin became bright and high quality.

On seeing this, the koi farmer was impressed by Filter Sand and Bio Sponge, and they now add Filter Sand every 2 or 4 weeks.

Following data is 5 points of house pond.

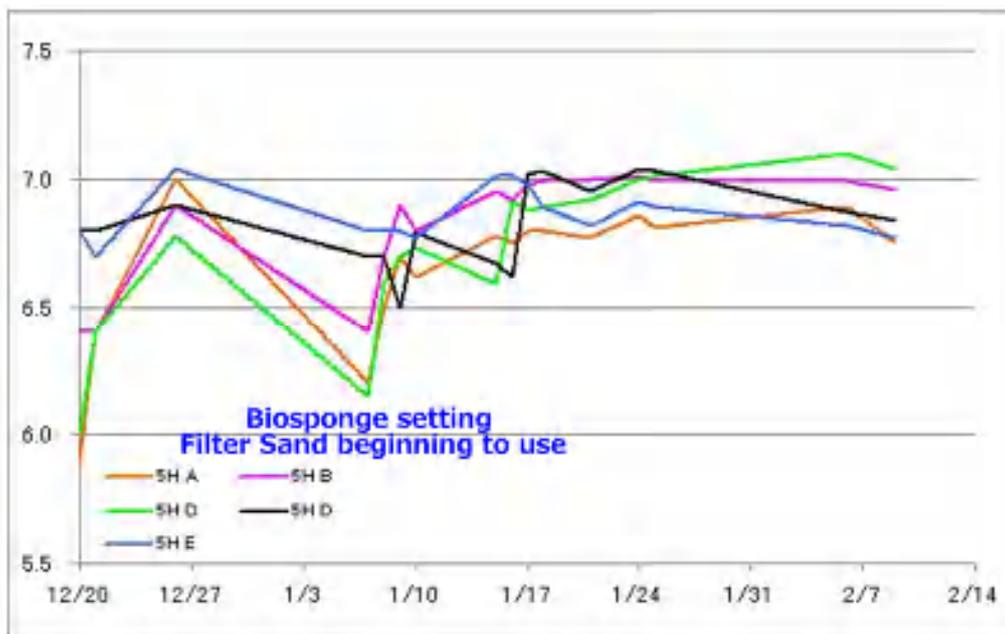
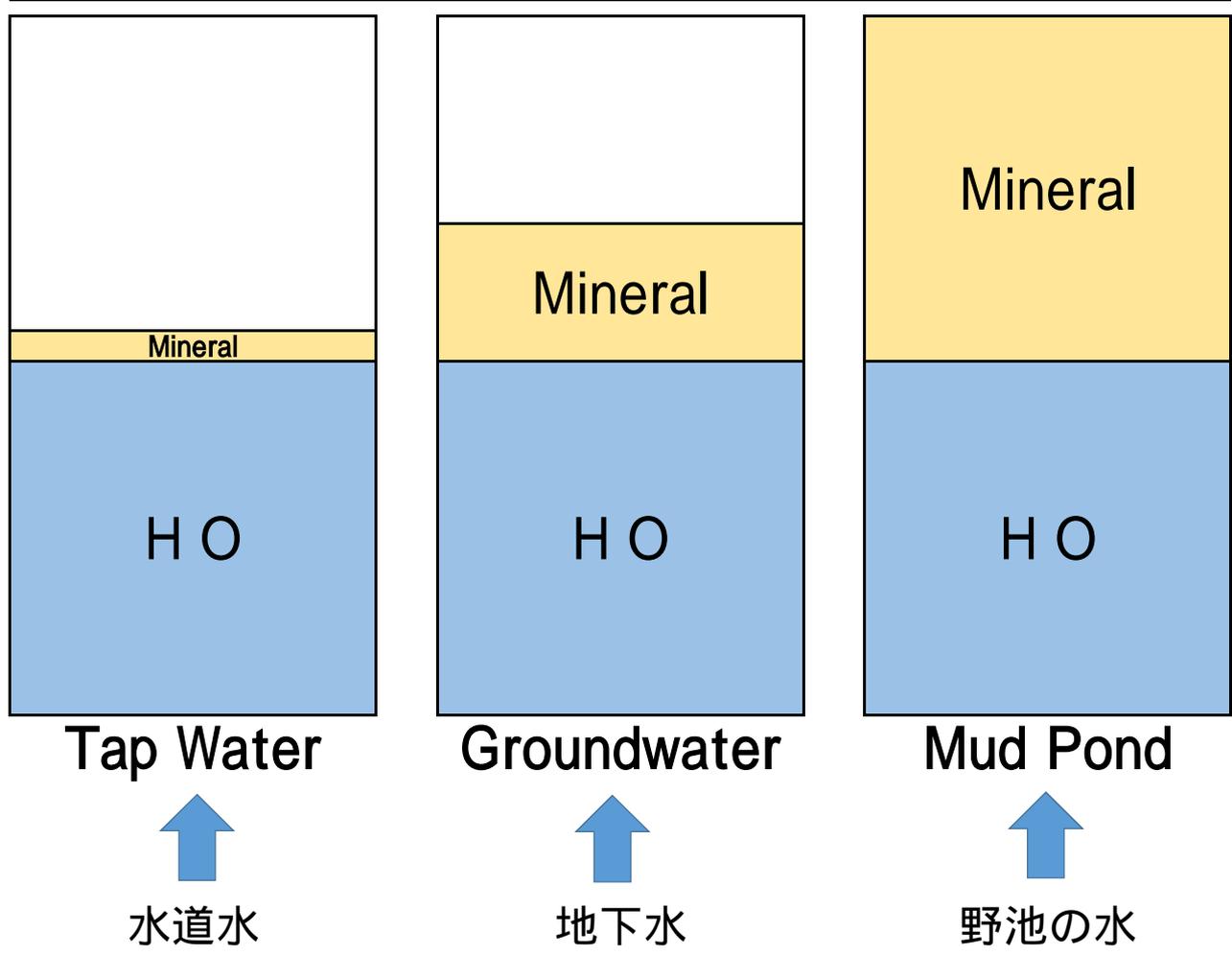


Image of the mineral ingredient content included in each water



Which environment will the carp choose?

<p>Good environment</p> <p>There are few disease-causing germs</p> <p>Bacteria are active lively</p> <p>PH stability</p> <p>The growth is early, too, and the complexion is good, too</p>	<p>Because bacteria break down all organic matter by only an appropriate number being active normally, there is very little sludge. Therefore, there is little number of disease-causing germs (the density of disease-causing germs is light)</p> <p>Because I break down all organic matter, pH is stable.</p> <p>PH is the most stable in its numerical value between 6.8-7.2.</p> <p>When bacteria are active much normally, I produce vitamins, an enzyme.</p> <p>I reduce disease-causing germs (position collecting of bacteria and disease-causing germs.) Which can hold superiority?)</p> <p>It is a premise to install a biosponge using Filter Sand</p>
<p>Bad environment</p> <p>There are many disease-causing germs</p> <p>The activity of bacteria is weak</p> <p>PH instability (named pH 4 and the crab which are easy to be oxidized)</p>	<p>Appearance is low in the bubble that is white on the surface of the water because there is less number of bacteria than organic matter.</p> <p>Because there is very much quantity of the sludge, disease-causing germs spread (as for the sludge the manufacturing facility of disease-causing germs)</p> <p>You should increase oxygen content of water to let you do the activity of bacteria, but must choose the most suitable filtration materials that bacteria are easy to propagate.</p> <p>When pH falls, the activity of bacteria becomes dull, and many bacteria perish (including pH 4) Most disease-causing germs live even if they use sterilization.</p>