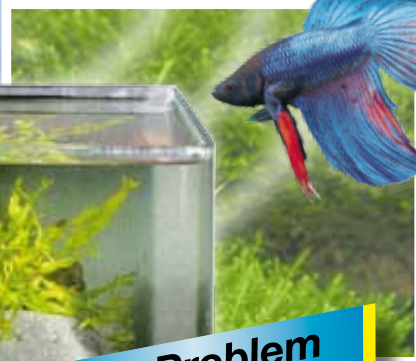


JBL

What - Why - How ?

Nano Keeping

Getting it right!



**With Problem
solving tips**



More and more people would love to have a small underwater world on their desk, the kitchen counter or in their living room. No space for a large aquarium ? – then a nano aquarium is the solution!

Easy to keep, only a small space is required and low operating costs – these are all reasons for the latest nano aquarium trend. We'll show you how it works!



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Contents:

The nano aquarium.....	4
Location	4
Energy needs	4
Amount of care	5
Setting up a nano aquarium – step by step.....	6-9
Professional aquatic plant care	10
Feeding	10
Special Sulawesi aquarium	11
Recommended animals for nano aquariums	
Shrimps	12
Crustaceans	13
Snails	14
Fish	15
Problem solving	
Fish diseases	16
White spot disease	16
Fungal infections	17
Bacterial infections	17
Algae growth	18-19



The Nano Aquarium:

These are now available from 10 to 60 litres and most are rectangular. The litre size depends on you and the amount of space you have. The same applies as for conventional aquariums: a bigger litre volume will forgive small mistakes better than a mini aquarium of only 10 litres. Always use a special aquarium mat under a glass aquarium to protect the glass against damage.

The location:

Place your aquarium where it is not exposed to direct sunlight. Sunlight combined with the nutrients present in the water promotes the growth of algae – and of course you don't want that.

Energy needs:

You will be connecting 3 appliances needing electricity: the light, the heater and the filter.



Of these, only the filter works without interruption 24 hours a day, but it has the lowest energy consumption, with only approx. 5 € / £ 4.5 per year. The light should be on for about 8-10 hours a day and will cost approx. 5 € / £ 4.5 per month. Of course the heating costs depend on the ambient temperature. Presuming your room is 22 °C and the water should be





24 °C, it only needs to be warmed by 2 °C and this would cost about 2-3 € / £ 2 - £ 3 per month.

With this small volume of water, the water costs are 1-3 € / £ 1 - £ 3 a year, practically negligible. So as you can see, drying your hair each day is more expensive than the energy costs on a nano aquarium.

Amount of care:

Don't panic! Hamsters make far more work than a nano aquarium. The amount of care an aquarium needs is always completely overestimated for some unknown reason. Looked at closely, there are few, if any, pets which need less work!

The filter should be cleaned once a month, which takes about 10 minutes.

Each week a partial water change is due, with 1/3 to 1/2 of the water volume siphoned off and replaced with fresh water. Instead of siphoning off only the clean water, you should use a nano gravel cleaner (**JBL AquaEx 10-35 Nano**), which acts like a

vacuum cleaner. With this you can "poke" piece by piece into the ground covering material and vacuum the dirt up, like vacuuming the carpet in your home. An integral sieve prevents you accidentally hoovering up the occupants. This will take about 10 minutes.

When required, the glass sides of the nano aquarium can be easily cleaned from the outside using a magnetic glass cleaner (**JBL Floaty Nano**).

And that's it. You can't count daily feeding as work, after all.

A complete clean and setting up again is only due if you don't like the current set-up any longer.



Setting up a nano aquarium – step by step:

Nutrient substrate, gravel, technical equipment, water, water conditioner, plants – wait – fish – finished. That's how simple it is if you follow just a few points.

As ground covering material we recommend , which not only looks attractive, but also significantly helps the

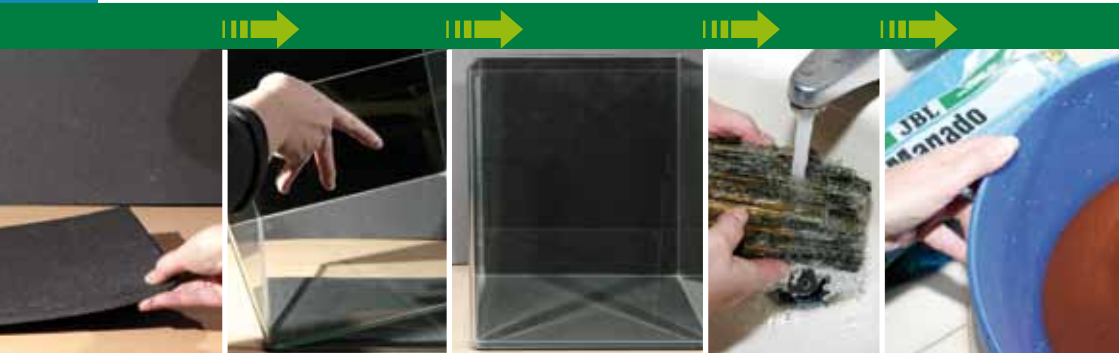


filter in its work and promotes plant growth. Rinse JBL Manado in warm water before adding the ground covering material so it is a few centimetres deep in your nano aquarium.



If you have chosen to use gravel or other ground covering material than JBL Manado, your plants will need an additional plant nutrient substrate (), which is put under the gravel. With JBL Manado, JBL NanoFlorapol can be used in addition (professional standard), but is not essential.

So that you have a natural-looking nano aquarium later and not an equipment-dominated one, it is advisable to conceal the technical equipment such as the filter, heater etc. Therefore bear in mind that in the following



step you can hide the aquarium equipment with decoration. However, the equipment should still remain accessible.

An underwater landscape looks even more natural if rocks and wood roots are used in addition to ground covering material and plants. Please only buy decorative material from specialist pet shops, as wood collected yourself will become mouldy in water and rocks may leak unwanted substances into the water. How you arrange the individual decorative items is a matter of taste.



Most shrimp can tolerate mains water if a good water conditioner () is used first. The water conditioner detoxifies any chemicals (e.g. chlorine) and absorbs heavy metals such as copper and lead. Copper is particularly harmful to shrimp, even small concentrations are toxic. For fish, is even more suitable as it includes a higher concentration of protection for the mucous membranes.



Biological water conditioning:

Beneficial strains of bacteria ensure that your aquarium continues to function over the long-term. Excess food (of course to be avoided wherever possible), plant residue and animal faeces are broken down into harmless substances by these bacteria. As these beneficial bacteria are not present in a new nano aquarium, they have to be added. contains millions of these beneficial bacteria and should be topped up after each change of water and after cleaning the filter.

For nano aquariums only plant species which are suitable for this type of aquarium should be selected. Mosses are very popu-

lar, not only with the observer, but also for the shrimps which utilize them; grazing on the growth and the small particles. Select the plants you prefer from the range available at your specialist pet shop. For the long-term care of plants and mosses it is important that a suitable fertiliser such as or is applied. Before planting, the "woolly material" around the root ball of the plants must be removed as it is soaked in concentrated fertiliser which encourages the growth of algae!

Once the aquarium has been decorated, the filter is running, the water has reached the temperature of approx.



24 °C and the plants have started to grow, patience is needed. Mini-fish species can be introduced after only 2 days when JBL NanoStart has been used. Shrimps are more sensitive and can only be introduced to their new home after waiting for at least one week.

TIP:

Planted wood:

plants such as *Riccia* and mosses can be attached to pieces of wood using fine thread. Simply place the plant on the wood and wind the thread around it several times.



TIP:

plants in an aquarium can be cut easily and professionally using the plant shears, **JBL AquaTerraTool S**, with no need to plunge your hands into the aquarium water.



Professional care of aquatic plants:

In addition to the liquid fertilisers mentioned above, plants need carbon dioxide, CO_2 . Red coloured plants and those forming carpets, in particular, have an increased CO_2 need. Using CO_2 fertilising systems, you can add this important gas to your aquarium (**JBL ProFlora CO_2 Systems**).



For your nano aquarium there is a small, neatly designed diffuser (**JBL Taifun P**), which dissolves CO_2 gas in the water with no loss of gas.

they should still not be given more food. Particularly for small fish which have scarcely any "fat on their bones", feeding several times a day is recommended.

Shrimp find some of their food in the aquarium and therefore only need supplementary food. They should be given **JBL NanoPrawn** food pearls every other day (one food pearl per shrimp). In order to meet their natural feeding habits, crustaceans with claws need harder food chips than shrimp (**JBL NanoCrabs**). **JBL NanoTabs** are additional treats which add variety to the diet.

If you are away for 2 days, this period of fasting is highly beneficial for the inhabitants of the aquarium as well as the functioning of your nano aquarium. Your neigh-

bours don't need to call out the animal protection agencies! After all, animals in the wild don't get their full food ration every day.

Feeding:

First things first: 90 % of aquarium owners overfeed their fish and this excess food pollutes the water, leading to algae problems. So, how much food is really needed?

The following rule applies to fish: Fish can be fed 2 - 3 times a day (**JBL NanoBel**, **JBL NanoMix**, **JBL NanoBetta**) and should have consumed all their food within 2 - 3 minutes. If fish are only fed 1 x a day,





By the way: once a food-packet has been opened, the amount of additional and natural vitamins gradually declines. Therefore vitamins in concentrated form should be added to the food twice a week (**JBL**

NanoVitol). If there is suspicion of disease, JBL NanoVitol also helps to increase the resistance of the occupants of your nano aquarium!



have only recently been introduced into aquarium keeping. The crustacean and shrimps origina-

te from southern Sulawesi where they live in very specific water

conditions. The water there is extremely soft (2 °KH), warm (28 °C), but yet has a high pH level (8)!

It is not difficult to replicate these water values, but it does require a bit more effort technically: using a reverse osmosis unit (**JBL Osmose 120**) you can convert tap water to very soft water. To this add 1/5 of the aquarium volume in tap water and set the filter so that the surface has a lot of movement. This strong current, e.g. from the **JBL CristalProfi i 40**, forces a lot of CO₂ out of the water, increasing the pH level. Then set the heater to 28 °C – and the perfect water is ready and waiting for the highlights from Sulawesi!



Special Sulawesi Aquarium:

If you have had some initial experience with bee shrimp and are looking for unusual and fastidious creatures for your nano aquarium, you will find these amongst the Sulawesi invertebrates. These are particularly beautiful and interesting animals which



Recommended animals for nano aquariums



Bee shrimp

Caridina cf. cantonensis

Size: 2 - 3 cm

Origin: South China

Temperature: 10 - 28 °C

Water values: No particular needs
(4 - 10 °GH, 6.5 - 7.5 pH)

Likes to live socially in small groups



Bumble bee shrimp

Caridina cf. brevata

Size: 1.5 - 3 cm

Origin: South China

Temperature: 14 - 26 °C

Water values: No particular needs
(4 - 15 °GH, 6.25 - 8.0 pH)

Likes to live socially in small groups



Red Fire/Red Cherry shrimp

Neocaridina heteropoda

Size: 2 - 3 cm

Origin: Southeast Asia, China and Hawaii

Temperature: 10 - 27 °C

Water values: No particular needs
(4 - 15 °GH, 6.25 - 8.0 pH)



White-nose shrimp

Caridina gracilirostris

Size: 3.5 - 4 cm

Origin: Japan, Indo-Pacific region,
West Africa

Temperature: 25 - 27 °C

Water values: No particular needs
(4 - 15 °GH, 6.5 - 7.5 pH)



Amano shrimp

Caridina multidentata

Size: up to 5 cm

Origin: Japan, Indo-Pacific region,
West Africa

Temperature: 25 - 27 °C

Water values: No particular needs
(4 - 20 °GH, 7.05 - 8.3 pH)



Sulawesi cardinal shrimp

Caridina dennerli

Size: 1.5 - 2 cm

Origin: South Sulawesi

Temperature: 28 °C

Water values: 2 - 4 °GH, 8.0 pH



Mexican orange dwarf crayfish or CPO

Cambarellus patzcuarensis "orange"

Size: 3 - 4 cm

Origin: Lake Patzcuaro / Mexico

Temperature: 10 - 30 °C

Water values: Hardness not important,
7.5 - 9 pH



Spike-topped apple snail

Pomacea bridgesi

Size: 5 cm

Origin: South and Central America

Temperature: 24 - 28 °C

Water values: Hardness not important,
6.5 - 8.5 pH



Asolene spixi

Size: 3.5 cm

Origin: Brazil

Temperature: 18 - 28 °C

Water values: Hardness not important,
6.5 - 8.5 pH



Zebra nerite snail

Neritina coromandeliana

Size: 2.5 cm

Origin: Indonesia

Temperature: 20 - 30 °C

Water values: From 5 °GH, 6 - 8.8 pH



Orange Poso snail

Tylomelania spec.

Size: 6 cm

Origin: South Sulawesi

Temperature: 28 °C

Water values: 2 - 4 °GH, 8.0 pH



Corydoras hastatus

Size: 2.5 - 3 cm

Origin: South America

Temperature: 20 - 28 °C

**Rasbora brigittina**

Boraras brigittae

Size: 2.5 cm

Origin: Borneo

Temperature: 24 - 27 °C

Water values: 4 - 12 °GH, 6 - 7.5 pH

**Dwarf rasbora**

Boraras maculatus

Size: 3 cm

Origin: Borneo

Temperature: 24 - 27 °C

Water values: 4 - 12 °GH, 6 - 7.5 pH

**Galaxy rasbora**

Danio margaritatus

Size: 2.5 cm

Origin: Myanmar

Temperature: 24 - 27 °C

Water values: 4 - 12 °GH, 6 - 7.5 pH

**Siamese fighting fish**

Betta splendens

Origin: Southeast Asia

Size: 6 cm

Temperature: 24 - 30 °C

Water values: 4 - 12 °GH, 6 - 7.5 pH

Problem solving:

Most fish diseases can be easily and quickly treated using easily available medication. Poor water quality and deficient diet (no variety, old food) often cause disease. If a partial change of water is regularly carried out and the fish are given a varied diet (different types of food in the morning and the evening for example), disease will not be a problem. The most common diseases are:



White spot disease

Ichthyophthirius multifiliis

Symptoms:

White spots on the skin and fins

Treatment:

50 % water change, then dose with **JBL Punktol ultra** on the 1st, 3rd and 5th days and increase water temperature by 3 °C. Finally increase the resistance of the fish to disease with additional vitamins (**JBL NanoVitol**).





Fungal infections

Achlya types

Symptoms:

Cotton wool-like growths on the skin and fins

Treatment:

Use **JBL Ektol bac**. At the end of treatment, dose with **JBL Acclimol** to protect the mucous membranes. Finally increase the resistance of the fish to disease with additional vitamins (**JBL Nano-Vitol**).



Bacterial infections

Cocci. Bacilli, Spirilla etc.

Symptoms:

Skin blemishes, ulcers, body cavities, mouth rot, fin rot

Treatment:

Add **JBL Ektol bac**. At the end of treatment 50 % water change and build up bacterial flora again with **JBL NanoStart**. Finally increase the resistance of the fish to disease with additional vitamins (**JBL NanoVitol**).



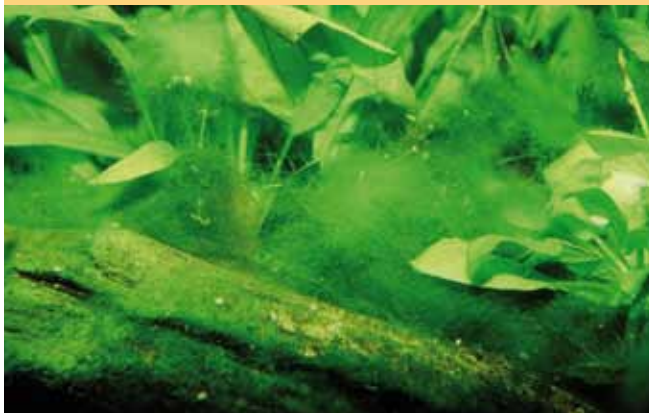


Algae growth:

Green water = floating algae

Treatment:

Reduce amount of light, add **JBL Algoi**. Then siphon out the clumped particles with a gravel cleaner (**JBL AquaEX Nano**).



Thread-like algae = Hair algae / filamentous algae

Treatment:

Limit excess nutrients (check amount of food and dose of fertilizer). Add **JBL Algoi**. Change 1/3 water regularly each week. Possibly check mains water for nitrates and phosphates and remove if necessary.

Use biocides safely. Always read the labelling and product information before use.



Unsatisfactory plant growth:

Intensify plant fertilising (**JBL NanoFerropol 24** / **JBL NanoFerropol 24 Moos**). Check whether plant-eating animals are present. Possibly insufficient levels of light or inadequate light spectrum. Some species of plants will not grow without additional CO_2 ! If so, install **JBL ProFlora CO_2 System**. Check whether plant-eating animals are present .



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