

PRO JBL NOVO®

The new food
for your aquarium

UNIQUELY SPECIES APPROPRIATE

Species concept:
The best food
for every fish



With insects
and shrimps



Researched
in native
habitats



Prebiotic for
a healthy
digestion



No artificial
colouring



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AHEAD THROUGH RESEARCH



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Another new food?

Yes, but what a food! It is developed to follow the latest scientific evidence, underwater observations on JBL research expeditions and an innovative species concept. These were weighty reasons for completely revising the previous JBL Novo concept and so the new JBL PRONOVO food concept was born!

Why is it important to feed fish in a species-appropriate way?

Just like humans, animals can also survive on little food. Both humans and fish can survive difficult situations (sad, but true). But we aquarium enthusiasts have the welfare of our animals as our main goal and want not only perfectly developed colours and healthy fish, but also offspring so that fewer animals are taken from the wild. Removals from the wild do not (demonstrably) pose a threat to the fish species, but it is of course nicer if the number of captive-bred species increases.





Sustainability – more topical than ever before

Aquarists in particular are often very environmentally conscious. The sometimes sensitive aquarium ecosystem shows us what effects even a small amount of water pollution can have, and we hear terrible news about environmental destruction from the countries of origin of our fish.

In the meantime, many fish species are ONLY kept in aquariums – unfortunately, they are already extinct in nature. Aquaristics is therefore the protection of species in practice. So it is not a huge leap to think about sustainability when it comes to packaging as well.

To always have fresh food, purchase a smaller portion for small aquariums. JBL has discontinued the small "nano tubs" and replaced them with resealable pouches, which only require a fraction of the raw material used in a nano food tub!

The owners of many types of fish will find there is an environmentally friendly refill pack made of very thin plastic that can be inserted into the empty litre tub.



Sustainability actually starts much earlier: JBL only uses fish that comes from European waters. This means that the transport routes are short and thus environmentally friendly. By using fillet edges from fish fillet production for humans, not a single fish has to be caught for JBL food. And these outer fillet parts are very high quality and much better than using cheap fish meal made from fish remains.

The new PRONOVO tubs have been made of an optimised PP plastic, which is thinner and yet protects the food better against air and light. The sealing foil and the labels are also made of PP. This means that the entire tub is made of ONE material and can be recycled without the need for extensive material separation! 80 % of the electricity used for the manufacturing process at the JBL factory in Neuhausen comes from the company's own photovoltaic system on the roofs of the 5,000 m² JBL factory buildings. JBL won't stop thinking how to be environmentally friendly in the future too... you have our word!



Fish anatomy – for a better understanding of our finned friends

We can tell an incredible amount about a fish species from its body structure, mouth position and shape, as well as its fins, without ever having observed it in the wild. This, in turn, helps us to set up the aquarium correctly, to socialise the fish properly and to feed them appropriately. Because, as with humans, nutrition plays a very decisive role in health and, in the case of fish, also in colour formation.



The fins and body shape indicate the way they live



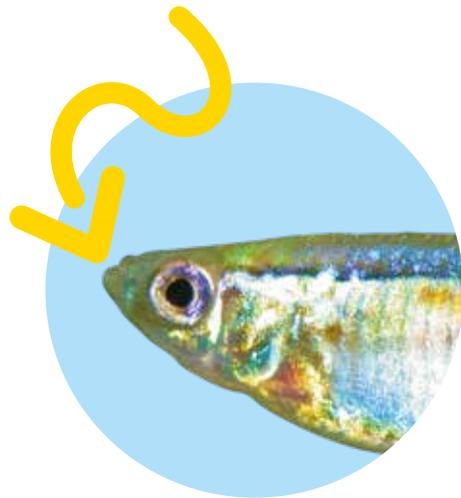
Hillstream loaches with pectoral and pelvic fins adapted to strong currents



Mouth position: **Superior mouth**

The upward position of the mouth suggests that these fish eat at the surface. In the course of evolution, they have adapted to snatch insects that, say, fall on the water surface. However, this food source is never sufficient in the wild, and so fish with this type of mouth can also pick up food in front of them or below them. Only for the surface are they specialised and superior to other fish species.

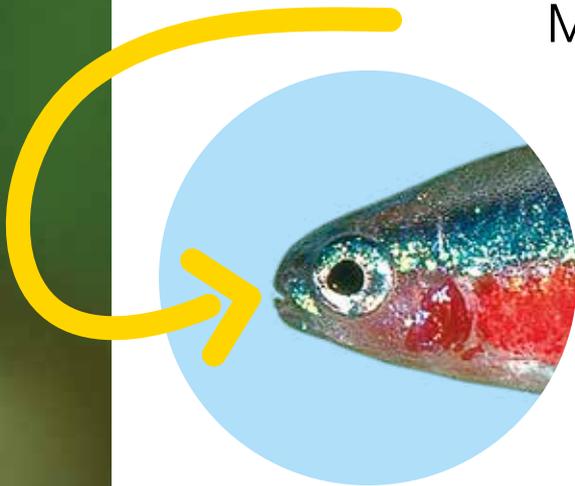
Suitable food:
floating JBL flakes, sticks & treats



Mouth position: **Terminal mouth**

This mouth position is the most versatile and suggests that the fish eats food from the open water (e.g. plankton or small fish). However, it can also feed at the bottom or on the surface. For fish species, the availability of food varies depending on whether it is the rainy or dry season. During the rainy season, many fish even eat fruits, which are then accessible to the fish!

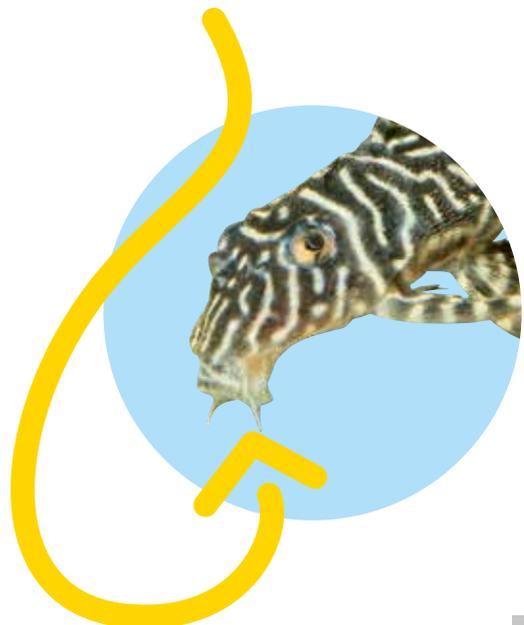
Suitable food:
sinking (i.e. moving) JBL granulates



Mouth position: **Inferior mouth**

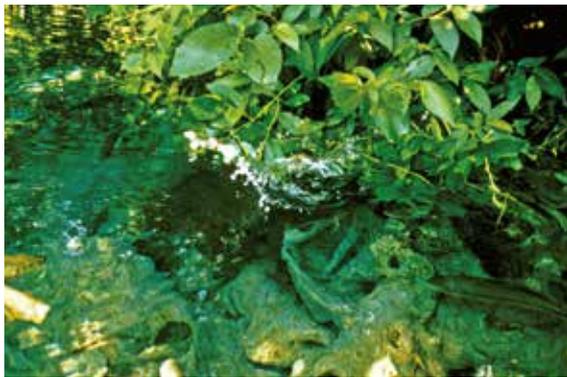
If the mouth is on the underside of the body, it is obvious that these fish eat on the ground. In the case of armored catfish and loaches, the fish also have barbels with which they can feel for food at the bottom. Sucking catfish use their inferior mouths to scrape off food, but also to hold themselves in place, as they often live in water with a lot of current. In display aquariums, you can often see rays even picking up food from the surface by turning onto their backs. Fish are actually quite ingenious!

Suitable food for bottom dwellers:
JBL food tablets & wafers





Plants or fish? What do our ornamental fish eat?



Herbivores

Among the fish species we keep in aquariums, there are very few pure herbivores. Perhaps this is because in many natural waters there are no plants to be found at all.

Incidentally, the JBL expedition team in the South American Pantanal was able to observe how herbivorous characin species prefer to jump out of the water to eat the overwater leaves of the bushes instead of the underwater plants. Fish definitely have a sense of taste! Besides, most aquarists like to have plants in the aquarium and herbivores are then less welcome.

Some aquarium fish are moderate herbivores that only occasionally pick at the plants. Other species, and you will find them on pages 46 and 47, can cause significant damage to our aquarium plants.



Algae eaters

Now algae also count as plants and there are quite a few fish species that specialise in algae food. In the aquarium we like to make use of this characteristic and keep, for example, sucking catfish to fight the algae.

In the case of live-bearing toothcarps (guppies, platies, ray-finned fish, etc.), it is not only nice to observe how they eat algae in the wild, but you can also tell from their digestive system that they are algae eaters: Their gastrointestinal tract is very special, like that of a cow, and about 15 times as long as their body (of the fish - not the cow :-)).

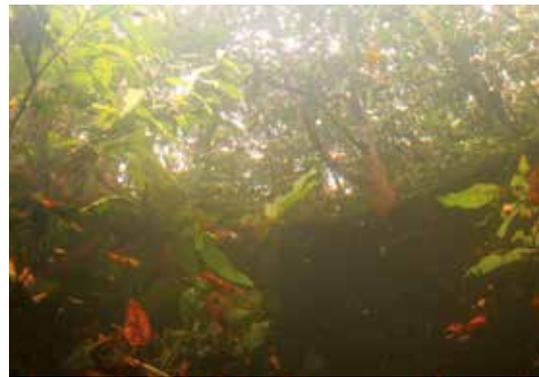




Predators

There are quite a few pure carnivores among the fish: We call them predators and the piranha certainly comes to mind first. The piranha is one of the very few fish species that can actually eat and digest warm-blooded meat (e.g. beef) in the wild. Other predatory fish prefer to eat other fish and invertebrates such as shrimps. However, since their prey also contains greens (e.g. algae) in their stomach, they not only eat animal proteins but also plant proteins. Their digestive system is very short and therefore only able to digest plant food to a limited extent.

Strictly speaking, even cardinal tetras are predators, as they eat animal plankton. To have a distinction from "fish predators", such species are called planktivorous.



Omnivores

Most fish species are opportunists: they adapt to the conditions and eat what is available at the moment. This varies in nature, depending on whether it is the dry or rainy season. In the dry season, water levels drop until the waters have almost dried up (in some regions they dry up completely!) and then animals such as piranhas attack everyone and everything in the water.

In the rainy season, on the other hand, there is enough food and we can relax and snorkel with piranhas in the river or lake. In the rainy season, the water level in the Rio Negro, as an example, rises by nine metres. Then fish can also reach fruits hanging in the trees. The food spectrum of most fish is thus enormous, and "omnivorous" does NOT just mean that these species CAN eat anything – but MUST eat everything! Variety and diversity is therefore absolutely the right way to feed our fish healthily so that they keep well, have offspring, show beautiful colours and we get a lot of pleasure from them.



How modern ornamental fish food is produced at JBL

The JBL plant in Neuhofen/Pfalz has one of the most modern and sustainable fish food production facilities in the world. We would like to give you an idea of how the manufacturing process works.

The ideal composition for a particular food is determined by specialists for the respective fish species and draws upon specialist literature, Internet research, first hand experience with the species in the JBL Research Department aquariums and observations made on JBL expeditions.

In this formula the ingredients are mixed together to form a "paste" and passed on to the production line to make flakes or extrudates (granulates, wafers & sticks). The production plant is located in Neuhofen in a 3,500 sqm large and 17 m high hall.

For flakes, the food paste is applied to a 15,000 kg flaker roll, rolled flat and "scraped

off" in one giant flake. This is crushed and mixed with other flake types until the right flake mixture and size is achieved.

The flake mixture is filled into tubs by computer, labelled, weighed, sealed, checked and shrink-wrapped. It is then ready for dispatch.

For extrudates, the food paste is pressed through a (sieve-like) die with the help of "screw conveyors" and then cut off. The size of the holes in the sieve determines the diameter of the granulate, stick or wafer. The length of a stick or granule is determined by the timing of the cutting.

The vitamins have already been added to the food in the paste and are able to withstand the subsequent processing.

After that, extrudates move on to drying. Here, an in-house development is used to dry all extrudates very gently and quickly on an air bed.

Only now are the extrudates ready to be packaged. The process is then the same as for flake food.

Feed tablets are mechanically pressed together into small moulds from pure food, without glue or binding agents. They are then dried, deburred and weighed. Then they go



Aquarium facility JBL Laboratory



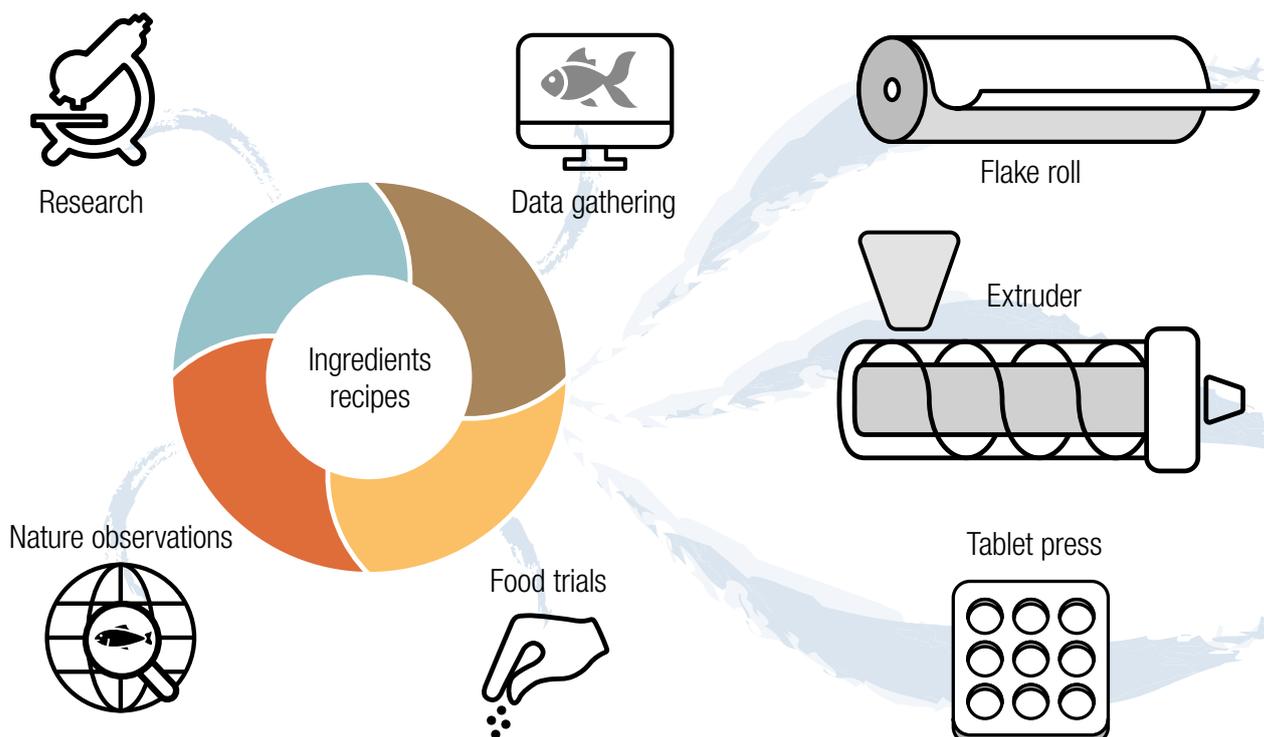
JBL Expedition



Vitamin adding coating



Flake roll



to the filling line to be filled into tubs.

During production and filling, samples are taken every hour to check the composition, moisture and weight in the JBL laboratory. Packaged tubs may only be dispatched after they have been approved by JBL Quality Control.

In addition, a certain quantity of tubs from each production batch is placed in climate cabinets which simulate the climatic conditions of different countries. This means that even months later it is possible to check whether everything is OK when stored at 50 °C in desert countries or in tropical countries with 90 % humidity.



Open extruder



Tablet production



Labelling



Quality control



FLAKES

Drying



Filling



GRANO / STICKS / WAFER



TAB



Probiotic or prebiotic – which is better?

Probiotic foods, such as some types of yoghurt, contain live bacterial cultures which are supposed to promote health, but only when consumed in large quantities. Such foods, including probiotic fish food, can easily spoil and then have the opposite effect. Not everyone agrees that probiotic food has health benefits.

Prebiotics are "substrates that are selectively used by host microorganisms and confer health benefits." Scientists are agreed on this that they promote digestion and thus health. In the case of our fish, there is another essential aspect: With better digestion, less is excreted and the water is thus less polluted, keeping it cleaner and causing fewer algae problems. JBL adds selected yeasts to the PRONOVO foods which have been proven to stimulate the intestinal flora and thus have a prebiotic effect. It doesn't get any healthier than this!

Flakes or granulated food?

To be honest, it's absolutely up to you! There are only a few arguments for or against each food type.

If you use an automatic feeder like the JBL AutoFood, you MUST choose granulated food, as almost all automatic feeders are only suitable for granulates. If you're introducing a feeder for your next holiday, get your fish used to the granulated food in GOOD TIME.

Some fish actually find it a bit difficult to switch from granulated food to flakes or vice versa. Imagine that you have always eaten soft cornflakes and are now having wholemeal cereal for the first time. Many professional aquarists prefer to get their fish used to both types of food. This way you can easily switch to granulate during the holidays.



Where do the different colours of the food come from?

JBL does not use any artificial colouring for the complete PRONOVO food range. Nevertheless, the food is not colourless. As we only use natural ingredients, it is these which give the food (granulate, flake, stick or tablet) quite deep colouring at times.

In the JBL PRONOVO range, the food colours come from their natural raw ingredients: Even using different flour types can influence the colour of the food. Spirulina, green meal, Mediterranean herbs, pea, spinach and alfalfa create a green colour; red is created from gammarus, krill, shrimps, beetroot and paprika; brown tones come from salmon, trout meat and fish protein in general. Black colouring comes from sepia (cuttlefish) and yellow is created by adding turmeric.



What is so special about the JBL PRONOVO ornamental fish food?

The annual JBL expeditions to South America, Africa, Asia and Australia resulted in so many observations - some of which contradicted previous expert statements - that the JBL research and development department were led to rethink the entire JBL food range. They evaluated all the observations and the results of stomach examinations on fish and developed new foods on the basis of this - and thus the JBL species concept was born.

All our food recipes have been revised and adapted: For fish species that also eat insects or their larvae, we have added insects as a raw ingredient. But not all fish species eat insects. Fish that are very choosy have been given special ingredients such as garlic or shrimps as acceptance enhancers in the food, so that they simply won't be able to resist it. The protein/fat ratio, which is very important for the organism, has been optimised to make it ideal for the physiology of the fish. The fat content of very cheap food in particular is often too high, resulting in fatty degeneration in the animals' organs. This cannot happen with JBL PRONOVO food!

An important innovation is the prebiotic orientation of the JBL PRONOVO food, which improves its digestibility. As soon as a food is digested better, there are two significant benefits: More energy is produced from the food for the organism, as less is excreted. And due to the reduced excretion, the aquarium water is less polluted - it remains cleaner. This in turn prevents algae growth.

Improvements have also been made to the tubs: all tubs now contain a dosing aid in the lid. It is either a click dispenser that ejects the correct amount of food for five fish when a button is pressed (this is, of course, only possible with granulates), or the lid contains three compartments on the inside for flakes, sticks and food tablets to make food dosing much easier.



Observations in the native tropical biotopes

If you observe sucking catfish in the wild, you will notice that many species not only scrape the algae growth off the wood, but also eat the wood itself. In the course of evolution, their digestive system has adapted to this diet and it is essential that they also consume wood fibres with their food.

However, not all aquarium keepers have wood in their aquariums and some perhaps have wood species that do not offer the right wood fibres, such as African savannah woods Opuwa or Mopani. JBL has therefore directly incorporated wood fibres into the food chips (JBL PRONOVO PLECO) so that the sucking

catfish are fed in a species-appropriate way and remain healthy. Catfish specialists can tell which feeding type a sucking catfish is by its teeth.

Underwater observations of shrimps have also led to new findings: Many shrimp species, such as bee shrimps, are actively on the move in search of food. If you scatter food granulate in the aquarium and it does not land directly in front of the shrimp, it will still find it quickly via its sense of smell.

Other shrimp species, such as some species from Sulawesi, behave quite differently.

They sit in their shelter and crawl a few centimetres forward to then graze the algal turf there. When there is danger, they crawl these few centimetres backwards again. They do not actively roam around looking for food. Here, you need to make sure to feed at the right place.

Our JBL research team observed how cardinal tetras in the blackwater of the Amazonian lowland rainforest "pick" miniplankton out of the water or how altum angelfish briefly shoot out from the cover

JBL Expedition in Malawi Lake





of branches that have fallen into the water to eat micro-organisms or careless small fish. This has led to completely new thoughts on the subject of food shapes and sizes.

In Lake Malawi, the team was somewhat surprised to find that the grazing cichlids (mbunas) did not graze the green algal turf in the uppermost water layer (0-50 cm), but only ate the algae below 50 cm down to a depth of about 8 m, where it consisted mainly of diatoms.

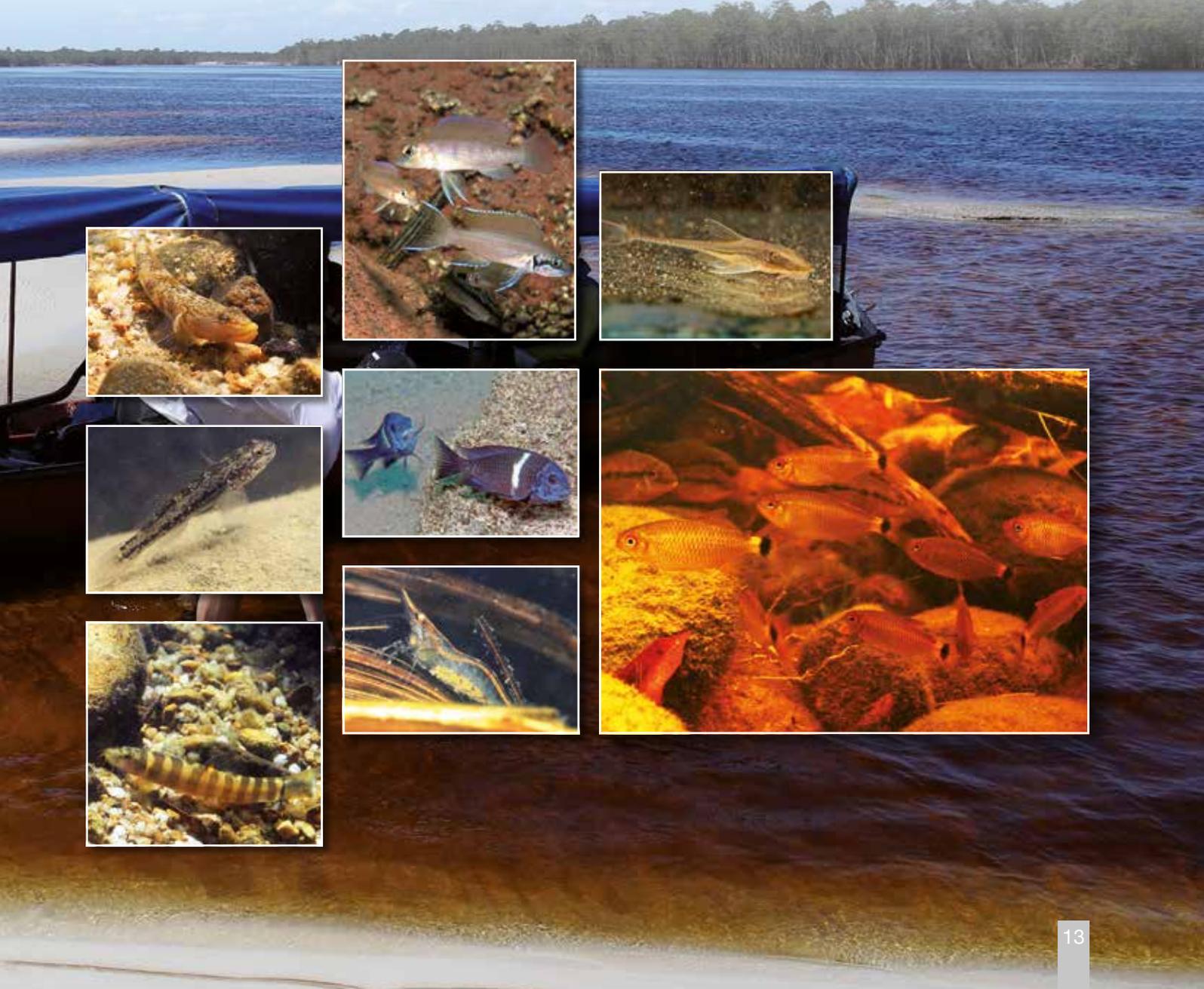
In the cenotes of Mexico we made an

interesting observation about livebearers: sailfin mollies were grazing in the abundant filamentous algae beds that were present in some (but not all) cenotes. When we looked very closely, we could see that they did not always pluck algae, they also picked out small plankton animals from among the filamentous algae. So they were eating algae AND plankton!

There is no substitute for underwater observations! A funny example of this: For many years, scientists believed that the long teeth of a cichlid from Lake Tanganyika were used for hunting. It was only many years later that snorkellers observed that the fish (Tanganicodus) use the long teeth like a rake to fish plankton animals out of algae. That's how wrong you can be!

By the way: why not come along with our research team! JBL advertises the expeditions on the JBL homepage openly for all nature enthusiasts. All you need to do is be fit and enthusiastic about tropical nature 24 hours a day. The expeditions are research, experience and adventure with like-minded people all in one.

You can find information about the next JBL expedition on the JBL homepage at Expeditions



What is the main food (complete food) in a species aquarium?

If, for example, you only keep smaller barbels and danionins, the barbel food JBL PRONOVO DANIO GRANO would be the basic food, which can be supplemented with other types of food - but it doesn't have to be! Any other food that fits in terms of size is suitable for a supplement or treat. If, for example, you keep small characins like neons AND small danionins together (there's nothing wrong with that!), you could feed the two types of food alternately: first PRONOVO NEON and then JBL PRONOVO DANIO GRANO. Again, this CAN be supplemented with other small foods such as JBL PlanktonPur Small as a treat. For larger fish species, the choice of supplementary foods is much greater, only for the smallest fish species is the choice somewhat limited. It is also possible to grind up supplementary flake foods a little until you have the right size for the small mouths.



How do bottom-dwellers in a community aquarium get their food?

You'll have seen this: Someone throws a food tablet into the aquarium for their bottom-dwelling armored catfish, but the fish in the other water zones grab the food tablet and the catfish go empty-handed! The other variant: The armored catfish are supposed to get some of the other fish's food. This, however, often involves feeding enough food to sustain both the armored catfish and the algae! The armored catfish do not reach the food that ends up, say, in the decoration. This can spoil and quickly lead to algae problems.

It works better that way: First feed the fish in the upper water layers and while they are busy feeding, throw in one or two food tablets for the bottom dwellers. If this doesn't work, try this tip: Take a see-through plastic tube and put the tablet inside it. The upper fish won't notice the tablet going down, but the bottom dwellers will quickly learn to look for their food in this tube.



The right amount of food

It's fair to claim that while no fish has ever died of starvation, many have been overfed! It is in the nature of humans to offer their pets too much food rather than too little - especially as fish are ALWAYS hungry.

They really are: A predatory fish may still have its prey peeking out of its mouth, but would eat the next fish if its mouth wasn't full of the current one! Thus the following rule applies to almost all aquarium fish: Feed only as much as the fish will eat in a few minutes (3-5 minutes - please not 30!). If food remains uneaten on the aquarium floor, it was too much! And as already described, bottom-dwelling fish should not be used as "hoovers". If they only eat a few scraps of food, everything is OK. Otherwise give them their own food in the form of sinking tablets or chips.



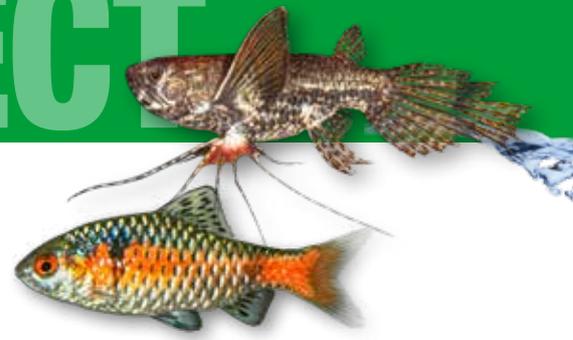
The JBL PRONOVO species concept

As already mentioned, you can feed your fish species food even if you keep different species together or have a community aquarium.

By feeding species food you are ensuring that no deficiency symptoms occur and by feeding other types of food you are expanding the fish's diet.

Feeding the fish with "incorrect/dangerous" food only happens in exceptional cases: Tropheus and other cichlids from Lake Tanganyika and Lake Malawi should never be fed red blood worms! They'll eat the blood worms and die from them! With other fish species it is only important that they get all the ingredients they need. This is what the JBL species concept is, supplemented by other PRONOVO food for community aquariums, 100% assurance.





Insects as a treat or to strengthen your aquarium fish

There are only a few fish species that do not eat insects and/or shrimps in their natural habitat! Only some highly specialised fish species, such as scale eaters in freshwater from Lake Tanganyika (*Plecodus straelini*) or coral polyp eaters in seawater (many butterfly fish/*Chaetodontidae*) do not eat insects or shrimps.

However, if you offer it to them in the aquarium, they often accept this food. All other fish species eat insects (e.g. insect larvae in algal turf) and/or shrimps directly or indirectly. For many fish, this is even included in the name of their diet and they are called "insectivores". The famous archerfish (*Toxotes*), which spits insects off leaves, is perhaps the best known example!

JBL has therefore taken insects into account to a much greater extent in the food compositions of the JBL PRONOVO range, but of course only if the fish target group has insects in its food spectrum. Mixing insects into EVERY fish food because it's a trend makes no sense! JBL PRONOVO INSECT is now available specifically to feed insects to your fish!



Archerfish (Toxotes)



Adult black soldier fly



Larvae of the black soldier fly

Whole insects or insect larvae as fish food?

It's easy to understand why we should not process large bugs as insect fish food. The chitin content of the shells would be far too high! Mealworms would be easy to obtain - but contain too much fat.

The search for the "ideal" insect has led to black soldier flies (*Hermetia illucens*, abbreviated = BSF), but as larvae. Larvae have 12 times the nutritional value of adults and a consistent composition. Soldier flies are bred on a large scale and do not have to be taken out of their habitat.

Since the larvae feed on animal and vegetable protein, their composition is perfect for fish. The protein of the larvae is characterised by a high vitamin concentration, a high biological value (amino acids) and very good digestibility.



JBL PRONOVO INSECT STICK S
Aquarium food sticks in size S for all aquarium fish from 3-10 cm



How to feed species-appropriate in a community aquarium

Imagine a zoo where many different mammals live. This would correspond to your community aquarium. With only one food, the keepers could basically feed almost all the mammals in the zoo, but would then have to supplement separate food for the tiger or the zebra.

The zebra also eats insects with grasses and leaves - so it does not eat a 100% vegan diet and the tiger also eats with the gazelle its grass-filled stomach. The general community aquarium food would be the JBL PRONOVO BEL, which then comes in different granulate sizes and flakes.

For example, for fighting fish which also live in the community aquarium, JBL PRONOVO BETTA can be added, with a composition

specially tailored to their diet. Algae-eating sucking catfish would then get their vegetable food with JBL PRONOVO PLECO.

Supplementing the general main food with the respective species foods would be the ideal procedure when feeding different fish species in ONE aquarium.

Of course, you can feed your aquarium fish healthily and completely exclusively with the appropriate staple food. But your fish are also happy to have some variety. All fish will then reward their keepers with vibrant colours and health.

You can supplement the food spectrum very sensibly with green food (JBL PRONOVO Spirulina), for example. This is not only

healthy, it also provides the fish with spirulina algae, which are extremely popular with almost all fish species.

In order to intensify the colours of your fish in a natural way, the JBL research department has developed a colour food in which natural carotene (astaxanthin) from krill (deep-sea shrimps) leads to an enhancement of the colours.

Furthermore, there is a selection of treats available for your fish (page 38).



JBL PRONOVO BEL GRANO XXS
Granulated aquarium staple food in size XXS for all aquarium fish from 1-3 cm

JBL PRONOVO BEL GRANO XS
Granulated aquarium main food in size XS for all aquarium fish from 3-5 cm

JBL PRONOVO BEL GRANO S
Granulated aquarium main food in size S for all aquarium fish from 3-10 cm

JBL PRONOVO BEL GRANO M
Granulated aquarium staple food M for all 8-20 cm aquarium fish

JBL PRONOVO BEL FLAKES S
Main food flakes in size S for all aquarium fish from 3-10 cm

JBL PRONOVO BEL FLAKES M
Aquarium main food flakes in size M for all ornamental fish from 8-20 cm

JBL PRONOVO TAB M
Food tablets for all aquarium fish from 1-20 cm





Guppies, platies, swordtails and other live-bearing toothcarps

Guppies, mollies, platies, Yucatan mollies, gambusias, swordtails and some others belong to the group of live-bearing toothcarps (Poeciliidae). They all have in common that they give birth to live young and do not lay eggs like most other fish species. This makes them much easier to breed.

After birth, the babies are already of a size where they can eat Artemia nauplii (JBL PRONOVO ARTEMIO), the smallest flake food (JBL PRONOVO BEL FLAKES BABY) or even liquid food (JBL PRONOVO BEL FLUID) immediately. However, the parents chase their young and protection of the fry in a spawning box (JBL BabyHome Oxygen) is advisable.

In their natural habitat they eat insects, insect larvae, algae and anything else edible - they are not choosy. The algae with the small animals living in them often form the largest part of their food spectrum, this depends on the habitat.

Guppies originally came from Central America. However, they were then (unfortunately!) released into waters all over the world to eat mosquitos and their larvae, which cause many diseases, such as malaria. As invasive species, they are now a major problem in multiple countries.

The guppy, and some other livebearers, have been further bred into

very beautiful colour forms that are certainly among the most popular ornamental fish in the world!

Livebearers do not make any special demands on the aquarium design. They only need to be kept in a small harem (one male, several females). If you don't want any offspring, just keep males or let nature take its course by keeping predators such as cichlids in the same aquarium. This sounds a bit brutal, but too large a fish population is really very unhealthy for the fish.



Cultivated platy



Cultivated platy



Cultivated swordtail



Cultivated sailfin molly



Male guppy



Female guppy



Molly



Butterfly splitfin

Giant sailfin molly in a cenote in Mexico, JBL Expedition Central America



JBL PRONOVO BEL GRANO S
Granulated aquarium staple food in size S for guppies & other livebearers from 3-10 cm

JBL PRONOVO BEL FLAKES S
Aquarium staple food flakes in size S for guppies & other livebearers from 3-10 cm



Small characin species such as the neon and pencil fish

The characidae family is one of the most diverse groups of fish with over 1100 species. It includes the carnivorous 30 cm piranha, as well as the small, plankton-eating neon.

Thanks to a group of bottom dwelling tetras, characins have even conquered the soil. Characins live only in South America and in Africa. Most characin species are schooling fish and should be kept in groups of five or more, preferably 10 or more. In some species the males have a pointed, elongated dorsal fin and are less plump than the females.

Breeding is actually not difficult if the water values and diet are right. Unfortunately, most characins release their eggs into the free water where they are often eaten - even by the parents! Almost all species come from soft to medium-hard waters with pH values between 6 and 7.5. Only the cardinal tetra can also be found in extremely acidic waters with pH values around 4.5. More important than precisely adjusting the pH value to within 0.1 is a partial water change every 14 days. All tetra species will thank you for the addition of the tropical water conditioner JBL Tropol with strong colours and healthy growth.

PRONOVO NEON also contains insect larvae (Hermetia) and shrimp meal, as insect larvae and small crustaceans in particular are an important component of the plankton on which small characin species feed in nature. Observations in Colombia showed that cardinal tetras prefer shallow water regions without current up to 60 cm water depth with a lot of foliage on the ground.



Cardinal tetra



Neon tetra



Black neon tetra



Black tetra



Rosy tetra



Pencil fish



Black phantom tetra



Hatchetfish

JBL PRONOVO NEON GRANO XXS
Granulated aquarium staple food in size XXS for neon tetras & other small characins from 1-3 cm



Cardinal tetras in their typical habitat. JBL Expedition Colombia



Small barbels and danionins

Small barbel species, danionins and rasboras are a very popular group of aquarium fish. They can be incredibly beautifully coloured, but do not grow as large as some related barb species, e.g. the bala shark, which can grow up to 40 cm long.

They also feel comfortable in somewhat smaller aquariums, but usually live in shoals and then again need some space. The sexes are often not easy to distinguish. Females usually have a somewhat fuller body shape. Only in a few species are males and females coloured differently, as in the cherry barb.

Breeding is easy with some species and quite complicated with others. Sometimes an increased current in the aquarium can lead to the desired success. When feeding, it is important that the food is bite-sized and small enough to fit their mouths. Since insects and small crustaceans are part of their natural food spectrum, both components are included in the JBL PRONOVO DANIO. For larger barbel species, JBL PRONOVO BEL in the form of flakes or in the form of granulates in the appropriate size is ideally suited as their staple food. Barbels and danionins only make special demands on the water quality when breeding.

Apart from that, a regular partial water change of about 20 % every fortnight is highly recommended and the addition of tropical water conditioner JBL Tropol will ensure that the fish feel as at home in the local tap water as they do in their waters in South-East Asia or Africa, and that they show their full blaze of colour!



Zebrafish



Harlequin rasbora



Cherry barb



Fiveband barb



Celestial pearl danio



Dwarf rasbora



Gold barb



White Cloud Mountain minnow

Barbels in their habitat in Vietnam, JBL Expedition Vietnam



JBL PRONOVO DANIO GRANULO XS
Granulated aquarium staple food in size XS for all small barbels & danionins from 3-5 cm



Goldfish - the most popular ornamental fish of all

Why is there a special goldfish food?

Goldfish are descended from crucian carp, which come from cool waters. In a cold environment, the metabolism is slower and therefore the main food must have a lower protein content than food for tropical warm-water ornamental fish. In addition, the goldfish likes to eat vegetable food. The goldfish lover will notice this at the latest when the goldfish keep eating the aquarium plants. Goldfish food JBL PRONOVO RED therefore contains a high proportion of plants. Often, but not always, this curbs the fish's appetite for the plants ...

About 1000 years ago, the beautiful colours were bred out of crucian carps (cold-water fish) in China and the goldfish was created, complete with its own scientific name (*Carassius auratus*). In many countries goldfish are kept in spherical bowls, which is prohibited in

Germany for animal welfare reasons. As the goldfish can grow to a little over 30 cm in length, it actually needs aquariums of at least 100 cm. Some goldfish breeding forms, such as veiltails, remain smaller and can therefore also be kept in a small group in somewhat smaller aquariums.

Goldfish and related breeding forms have no stomach and are omnivorous. The JBL PRONOVO RED INSECT goldfish staple food contains a high proportion of plant ingredients, which reduces the hunger for aquatic plants. Insects and insect larvae form an important part of the diet along with plants. This has also been taken into account in the JBL PRONOVO RED INSECT by adding soldier fly larvae as a treat. The highlight is the shape of the food: it looks like small insect larvae!



Goldfish



Veiltail



Shubunkin



Comet



Oranda



Lionhead

JBL PRONOVO RED FLAKES M
Staple food flakes size M for goldfish from 8-20 cm

JBL PRONOVO RED GRANO M
Granulated staple food size M for goldfish from 8-20 cm

JBL PRONOVO FANTAIL GRANO S
Granulated staple food size S for veiltails and other goldfish breeds from 3-10 cm

JBL PRONOVO FANTAIL GRANO M
Granulated staple food size M for veiltails and other goldfish breeds from 8-20 cm

JBL PRONOVO RED INSECT STICK S
Main food sticks size S with insect treats for goldfish from 3-10 cm





Threadfish, gouramis and other labyrinth fish

All threadfish and gourami species live in Southeast Asia and are true survival artists. Even in very warm and oxygen-poor waters such as rice fields (!), they can survive by breathing atmospheric air thanks to their additional respiratory organ, the labyrinth.

They love heavily planted aquariums and some floating plants, in which they also build their nests (most species). They care for their brood and most species are not difficult to breed.

By adding JBL Tropol, you can turn your tap water into the tropical-like water that the fish know from their natural habitat. This is how they show their true blaze of colour!

The superior mouth already partly indicates their feeding habits: they eat everything that falls on the water surface, but they also eat from the bottom and from the open water. In their natural habitat they are not choosy about what they eat. Insects, insect larvae, small crustaceans, plankton - in fact anything they can find.

But it is precisely the finding that is often the difficult part: the waters are often extremely murky and so they use their "threads" (reshaped ventral fins, hence the name threadfish) to sense their surroundings, partners and food.

Over the years, very beautiful cultivated forms have been bred out of the original wild forms, which are now often more popular than the natural form.

In some species (e.g. pearl gourami, dwarf gourami, honey gourami) the males are much more colourful than the females.

In other species (e.g. marble gourami, blue gourami, moonlight

gourami, croaking gourami, striped gourami, kissing gourami) both sexes are equally coloured, but the males have more pointed dorsal fins.



Chocolate gourami



Honey gourami



Dwarf gourami



Blue gourami



Pearl gourami



Climbing gourami



Paradise gourami



Sparkling gourami



Male building a foam nest



JBL PRONOVO GOURAMI GRANOS S
Granulated aquarium staple food in size S for all gouramis and other labyrinth fish from 3-10 cm



Fighting fish (betta species)

Fighting fish are actually peaceful aquarium inhabitants and get along with all fish that do not fit into their mouths. Only a male of the same species is challenged to the death - hence the name!

The beautiful, long-finned fighting fish in our pet shops are descended from the species *Betta splendens*, which is also popular for fish fights in Asia. Fighting fish and many other labyrinth fish (gouramis, threadfish & paradise fish) live in both stagnant and flowing water. They are ambush predators, quickly darting out with their superior mouth to eat insects that land on the water surface etc. They do not eat any aquarium plants and do not need much space. If you want to keep females as well as a male, you should definitely add several females. A single female would be harassed too much. The best-known species of fighting fish build foam nests on the water surface, which are then guarded by the male. Other species of fighting fish hatch their eggs in their mouths until the young fish hatch and are large enough to stand on their own feet or (better!) fins.

The water values are not really significant for fighting fish. Although they prefer soft water and pH values between 6.5 and 7.5, they can also cope with other values. When feeding, it is important that the composition is adapted to their natural diet. JBL PRONOVO BETTA as flakes or JBL PRONOVO BETTA as granulates form the basic nutrition. JBL PRONOVO BETTA INSECT is a staple food including insect treats which also looks like small insect larvae. All three JBL fighting fish foods contain astaxanthin, which leads to strong colour formation in the fish. It is a natural carotene obtained from krill, shrimps and spirulina algae. With a few floating plants and a "weedy" aquarium setup, the fighting fish feel really comfortable in the aquarium.



Mouth-breeding fighting fish



Cultivated fighting fish



Male fighting fish



Female fighting fish



Cultivated fighting fish



Cultivated fighting fish



JBL PRONOVO BETTA GRANO S
Granulated aquarium staple food in size S for fighting fish from 3-10 cm

JBL PRONOVO BETTA FLAKES S
Aquarium staple food flakes in size S for fighting fish from 3-10 cm

JBL PRONOVO BETTA INSECT STICK S Aquarium food sticks in size S for fighting fish from 3-10 cm





Killifish (egg-laying toothcarps)

Many killifish species are among the most colourful freshwater fish around and even beat most seawater fish with their blaze of colour! In addition, most species are not very large and therefore also fit into smaller aquariums. In the wild many of them have adapted to the cycle of rainy and dry seasons: They hatch from their eggs when the rains start, grow quickly, reproduce, lay new eggs and die when the dry season arrives, as the waters then usually dry out completely. For this reason, they are also called seasonal fish.

In the aquarium we do not have dry periods, except when the aquarium is leaking :-), and the animals can live a little longer. Most, but not all species, prefer soft and acidic water. You can optimise the water to suit killifish by adding peat to the filter (JBL Tormec activ) and tropical water conditioner (JBL Tropol). In their natural habitats, the waters are mostly shallow and temporary.

Their only food is small insects that fall on the water surface and insect larvae in the water or on the ground. JBL PRONOVO KILLIFISH has been used in this food spectrum as the main food for egg-laying toothcarps. The epiplatys among the killies are usually a bit more robust, and they also eat anything that fits in their mouths, as is usual with epiplatys. They tend to live in the upper water layers, while Cyprinodontiformes populate the middle and lower water layers. The African lampeyes (Procatopodidae) are also counted among the killifish and do not live in temporary waters. Even in the cichlid-dominated Lake Tanganyika, lives a Procatopodidae species (*Lamprichthys tanganicanus*).

The name killi dates back to the time of Dutch colonies in North America, where these fish were found in the drainage ditches (kills). Killifish are common on all continents except Australia, and there are even egg-laying Cyprinodontiformes in the Mediterranean!



Bluefin notho



Austrolebias



Aphyosemion coeleste



Striped panchax



Aphyosemion decorsei



Cape Lopez lyretail



Lampeye



Killifish biotope in Bolivia

JBL PRONOVO KILLIFISH
GRANO S
Granulated aquarium staple
food in size S for killifish from
3-10 cm





Predatory cichlids from Lake Tanganyika and Lake Malawi

The two rift valley lakes of Malawi and Tanganyika are home to both algae-grazing (growth-feeding) and predatory cichlids.

Since the majority of the cichlids kept in Lake Tanganyika are predators, the food for predatory cichlid species has been named JBL PRONOVO TANGANYIKA. Since most of the species kept in Malawi aquariums are grazing cichlids, JBL has named this food JBL PRONOVO MALAWI. Nevertheless, there are of course also predatory species from Lake Malawi which require the same food as the predators from Lake Tanganyika. So please don't get confused by the names: This was about the majority of a diet type and not about the lake they originally came from.

The predatory species of both lakes eat fish, micro-organisms, shrimps and fry. Some even eat only the scales of other fish (Plecodus). The JBL PRONOVO TANGANYIKA was developed for the predatory species of both lakes. If predators and grazing cichlids are kept together in ONE aquarium, it is essential to offer both types of food. This way, each feeding type gets the right food.

Typical predators from Lake Tanganyika: Lamprologus, Neolamprologus, Julidochromis, Cyphotilapia, Telmatochromis, Chalinochromis
 Typical predators from Lake Malawi: Trematocranus, Haplochromis, Nimbochromis, Sciaenochromis, Labidochromis

Observations in their native biotopes:

In Lake Tanganyika, the small predatory species have been observed in shallow water next to the grazing cichlids (Tropheus and

Petrochromis). The exception is the genus Cyphotilapia, which is usually only found in minimum depths of 20 m.

In Lake Malawi, on the other hand, we mainly find the predators in depths where the grazing cichlids no longer graze on algae.

It was interesting to observe grazing cichlids devouring the carcass of a fish. It looked as if they were happy to finally get some meat instead of just algae!

Predators from Lake Malawi



Nimbochromis livingstoni



Aulonocara



Sciaenochromis ahli



Labidochromis YELLOW

Predators from Lake Tanganyika



Cyphotilapia frontosa



Shell dweller



Julidochromis marlieri



Neolamprologus leleupi

JBL PRONOVO TANGANYIKA FLAKES M

Aquarium staple food flakes for predatory cichlids from Lake Tanganyika & Malawi from 8-20 cm

JBL PRONOVO TANGANYIKA GRANO M

Granulated aquarium staple food for predatory cichlids from Lake Tanganyika & Malawi from 8-20 cm





Grazing cichlids from Lake Malawi and Lake Tanganyika

In the rift valley lakes of East Africa (Lake Malawi and Lake Tanganyika), many of the endemic (only living there) cichlids have specialised in grazing the algae growth with the microorganisms living in it from the rocks (herbivorous grazing cichlids).

JBL PRONOVO MALAWI was developed for these species. The fish have evolved teeth that have been developed into rasping tools in the course of evolution. In the lake they can be seen tirelessly, half standing on their heads, scraping the algal growth (mostly diatoms) off the bare rocks (genus *Labeotropheus* from Lake Malawi with the name blue mbuna).

At depths below 6-10 m, the algae growth stops due to lack of light and the grazing cichlids no longer find food there. From this depth, the predatory species are predominant in Lake Malawi.

It is up to you whether you choose this food in flake or granulated form. For automatic feeders, however, only granulated food is possible. If you have larger and smaller fish in the aquarium, flakes are advantageous, as you can grind them a little between your fingers until the flake size also suits the smaller fish.

Typical grazing cichlids from Lake Tanganyika:

Tropheus, *Petrochromis*

Typical grazing cichlids from Lake Malawi:

Pseudotropheus, *Melanochromis*, *Labeotropheus*, *Maylandia*

Grazing cichlids from Lake Malawi



Melanochromis auratus



Maylandia zebra



Pseudotropheus demasoni



Red zebra mbuna

Grazing cichlids from Lake Tanganyika



Tropheus



Tropheus duboisi



Petrochromis

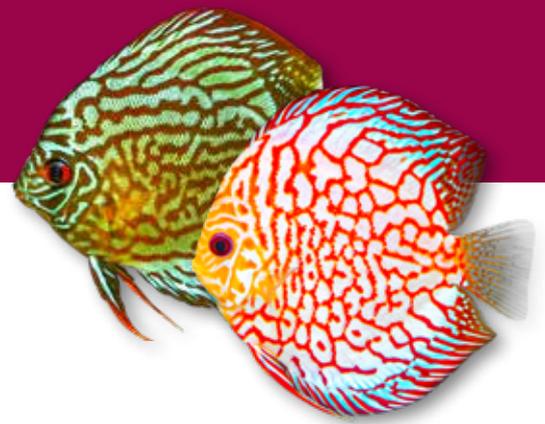


Eretmodus



JBL PRONOVO MALAWI FLAKES M
Aquarium staple food flakes for grazing cichlids from Lake Malawi and Lake Tanganyika from 8-20 cm

JBL PRONOVO MALAWI GRANO M
Aquarium staple food flakes for grazing cichlids from 8-20 cm from Lake Malawi and Lake Tanganyika



Very demanding cichlids such as discus and altum angelfish

The name BITS comes from English and means pieces/chunks. Since this granulate is shaped to offer small, mouth-sized pieces (morsels), the name BITS was chosen.

Although discus and similar cichlids generally live a rather predatory life, they have to adapt to the food supply in their native habitat, the Amazon basin of South America. This food supply depends on the season: In the dry season, they tend to look for food on the ground and rummage among the riverbank vegetation for shrimps, while in and immediately after the rainy season they can aim for fruit in the trees, because the water level has risen approximately 9 m.

So they are much more flexible in their search for food than you might think. In the aquarium, the food to which the animals have been

accustomed is much more noticeable. There it's difficult to get discus that have only ever been fed live food used to non-moving food.

A short break in feeding often increases the animals' appetite for new food. Scientists specialised in discus advise against feeding beef heart! Apart from bonytongues (arowanas) and piranhas, the fish organism is NOT designed to digest meat from warm-blooded animals properly. Commercial discus breeders like to use beef heart for economic reasons. However, this cannot be digested properly and, if excreted undigested, it pollutes the aquarium water. The high protein content leads to rapid growth in the discus, which is what the breeders want. JBL bases the food mainly on fish and shrimps. In this way the cichlids receive a food that gives them healthy growth and great colour formation.



JBL PRONOVO BITS GRANO S
Granulated aquarium staple food for discus & other demanding cichlids from South America from 3-10 cm

JBL PRONOVO BITS GRANO M
Granulated aquarium staple food for discus & other demanding cichlids from South America from 8-20 cm

Altum angel in the Rio Atabapo/Colombia





All omnivorous cichlids

Only a few cichlid species are restricted to ONE food spectrum. Most eat whatever is available and are therefore omnivorous. Thus the food needs to contain a lot of different ingredients to provide a varied food spectrum. The JBL PRONOVO CICHLID includes fish and shrimp as well as vegetable raw ingredients. It is important to choose the size of the food (S, M or XL) according to the size of the fish.

The astaxanthin contained is a very high-quality and natural carotene from krill and spirulina, which gives cichlids very beautiful colour formation. As cichlids are very greedy eaters, it is essential you watch the amount of food they get! If you are not yet very experienced, you can use the click dosing lid as an aid. Pressing the clicker once ejects as much food as five cichlids need in one feeding. For larger types of food that cannot be dosed by clicking, dosing compartments in the lid help with portioning.

With cichlids, it is important to find out about the eating habits of the species being kept. For example, an adult discus has a length of 20 cm, but would not be able to eat the XL granulate for large cichlids because of its small mouth. Earth eaters (*Satanoperca* and *Geophagus* species) do have a relatively large mouth, but only to shovel in larger amounts of sand and sift out small food particles from it.

Since almost all cichlids are predatory, care needs to be taken when socialising them. Only with dwarf cichlids is a peaceful coexistence with smaller fish species possible. With larger species, smaller fish will eventually be seen as food. Sometimes it works out well if they all grow up together in the aquarium. Then the small fish have become "friends" and are no longer regarded as tidbits. But not always...



JBL PRONOVO CICHLID GRANO S
Granulated aquarium staple food for small cichlids from 3-10 cm

JBL PRONOVO CICHLID GRANO M
Granulated aquarium staple food for medium-sized cichlids from 8-20 cm

JBL PRONOVO CICHLID GRANO XL
Granulated aquarium staple food for large cichlids from 15-25 cm

S: For small cichlids



Blue ram



Scarlet badis



Pelvicachromis taeniatus



Chessboard cichlid

M: For medium sized cichlids



Altum angelfish



Firemouth cichlid



Moga



Eartheater

XL: For large cichlids



Oscar



Texas cichlid



Formerly Cichlasoma, now Cincelichthys



Banded cichlid



Bottom-dwelling fish species:

Armored catfish

Armored catfish (Callichthyidae - 160 species) are bottom-dwelling fish species from South America that search for food with their barbels on or in the bottom. That's why the substrate should not be coarse and never sharp-edged. They like to live socially (except *C. acutus*) and are peaceful.

Armored catfish are omnivores which eat detritus (crushed organic matter) on or in the substrate. This means that their food spectrum covers almost everything that can be found in natural waters. In the JBL PRONOVO CORYDORAS this is taken into account in the composition with plant and animal components (fish & shrimps).

The armored catfish also include the cascarudos (Callichthyinae - 16 species), of which the genera *Dianema* and *Hoplosternum* are best known.

How can you proceed if you keep different bottom dwellers in ONE aquarium?

Fish also have a sense of taste and refuse food if it is not to their liking. In addition, there are NO species in our aquariums where problems would arise if one ate a food tablet that was actually intended for another species (e.g. loaches). You can feed both types of tablets (e.g. JBL PRONOVO CORYDORAS for armored catfish and JBL PRONOVO BOTIA for loaches) at the same time. It is even good for the fish as they are offered more variety.



Leopard cory



Spotted catfish



Albino cory



Cascarudo

Shoal of armored catfish near Puerto Inirida, JBL Expedition Colombia

JBL PRONOVO CORYDORAS TAB M
Food tablets for armored catfish from
1-20 cm





Bottom-dwelling fish species:

Sucker catfish



Long-whiskered catfish



Otocinclus



Blue-eye panaque



Hypostomus species

The group of sucker catfish is very diverse in terms of diet: the vast majority of species feed herbivorously on plants and algae. Of these, many species are also wood eaters. Yet there are also species such as the zebra and cactus catfish, which do not eat plants, but microorganisms, insects and even dead fish.

For these species JBL PRONOVO TAB is the right choice. For all other sucking catfish, JBL PRONOVO PLECO has been developed and is available in two sizes.

Some catfish species will not come out when the light is on. If you then feed food tablets, they will disintegrate and tend to be eaten by the other fish, if they like "green food tablets". In this case it is advisable to feed JBL PRONOVO PLECO.

The wafers (chips which are thinner than food tablets) do not dissolve so quickly and retain their consistency until the catfish are active, so that the sucker catfish have to grate vigorously (important for the teeth - no joke!).

Warning: herbivores!

Some sucking catfish, including the popular long-whiskered catfish, are quite happy to eat our aquarium plants. Feeding with JBL PRONOVO PLECO can significantly reduce their hunger for aquatic plants!



JBL PRONOVO PLECO WAFER M
Food tablets with wood content for herbivorous sucker catfish from 1-20 cm

JBL PRONOVO PLECO WAFER XL
Food tablets with wood content for large herbivorous sucker catfish from 15-40 cm



For omnivorous bottom dwellers

In addition to armored and sucker catfish, there are other catfish species that live on the bottom. These include such species as the pictus catfish (*Pimelodus pictus*), mochokid catfish (*Synodontis* species) and various other predatory catfish species. They use their barbels to feel their surroundings and food, but can also detect food (e.g. these food tablets) using their sense of smell. Many predatory catfish species have a relatively large mouth and the rule is that they eat everything they somehow fit into their mouths. This applies to fish and to food tablets!

Other bottom-dwellers kept in freshwater aquariums are freshwater rays and freshwater flounders. After a short acclimatisation period, they also like to eat food tablets like JBL PRONOVO TAB.

Also for the omnivorous and carnivorous sucker catfish species is JBL PRONOVO TAB.



Pictus catfish



Mochokid catfish



Sorubim



Leopard sailfin catfish



JBL PRONOVO TAB M
Food tablets for all aquarium fish from
1-20 cm





Bottom-dwelling fish species:

Loaches

All loaches come from Asia and are bottom-oriented fish. They therefore eat mainly from the bottom. Many species, such as the clown, skunk, yoyo loach and orange-finned loach are good snail eaters! The popular sucking loach (*Gyrinocheilus aymonieri*) has developed a sucking mouth and, at least as a juvenile, also cleans algae from the panes and decoration.

Be careful when catching:
most loaches have sharp under-eye spines!

A varied diet is important. Loaches eat both animal and plant food. That's why the food tablets JBL PRONOVO BOTIA also contain fish (salmon) and vegetable ingredients such as spirulina algae and spinach.

Some loach species develop a healthy appetite for aquarium plants and "punch" pieces out of the leaves. With the plant ingredients in JBL PRONOVO BOTIA you can counteract this hunger for greens.



Clown loach



Dwarf loach



Hillstream loach



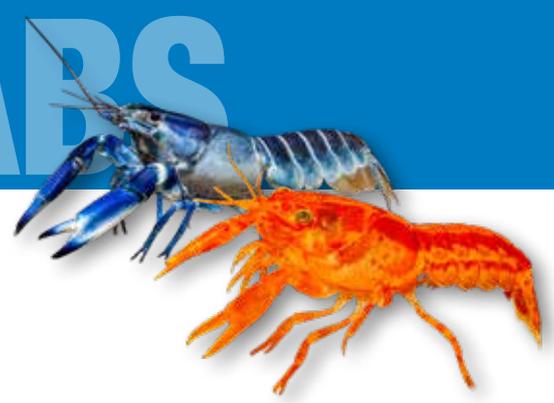
Pangio

Don't forget their size! The loach can grow to a length of about 30 cm. Loaches can be kept individually or in a small group (always take an odd number!).

Loach in a stream, JBL Expedition Vietnam



JBL PRONOVO BOTIA
TAB M
Food tablets for all loaches
from 1-20 cm



Invertebrates:

Claw-bearing crayfish

For them, the wafers from the JBL PRONOVO CRABS are more suitable. Firstly because of the composition and secondly because of the shape, which they can grip better with their claws.

We also linguistically include crabs (with a rounded shell) among the crayfish. Among the crabs and hermit crabs there are also land-dwelling species that only visit the water to reproduce.

When it comes to food, we can simply group all the claw-bearing species together, as their feeding habits are very similar. That's why JBL PRONOVO CRABS contains shrimps and fish, but also vegetable components such as spinach and spirulina. It also includes wood fibres for roughage.

When feeding several crayfish/crabs in an aquarium, it can be useful to feed them the wafers one after the other. The fastest & strongest one gets the first wafer and then the others can be given "their" wafers. Crayfish/crabs find food extremely quickly and reliably through their sense of smell. It is not therefore necessary to throw a large amount of wafers into an aquarium. Needs-based individual feeding is always better. A plastic tube can be very useful for getting a wafer to one specific spot.



Blue crayfish



Mangrove crab



Territorial hermit crab



Long arm shrimp



JBL PRONOVO CRABS WAFER M
Aquarium main food wafers for crabs, crayfish and coral shrimps from 1-20 cm





Invertebrates: Shrimps

Shrimps form a very large group that have developed very different feeding strategies. Very peaceful fan shrimp (*Atya*) filter plankton particles from the water with their fan-like legs (fine flake food or PlanktonPur).

Scissor shrimps (*Macrobrachium*) live predatorily and also eat other shrimps or (better :-)) JBL PRONOVO CRAB.

Most *Caridina* and *Neocaridina* species are peaceful and pick algae and tiny particles from the ground with their mouthparts.

In Sulawesi's lakes, shrimp species exist that have adapted to the very special habitats. The pretty little cardinal shrimps (*Caridina dennerli*) eat growth, but only in the immediate vicinity of their shelter. Bee shrimps use their sense of smell to search for and find their food, and will even walk through half the aquarium to do so. Cardinal shrimps don't do this and need to have the JBL PRONOVO SHRIMPS fed right in front of their nose.



Neocaridina



Caridina



Caridina dennerli



Sulawesi shrimp



Caridina striata



Caridina woltereckae



Fan shrimp

JBL PRONOVO SHRIMPS GRANO S
Granulated aquarium main food for shrimps from 1-20 cm





For juvenile fish and their breeding

Breeding aquarium fish is not only desirable from a sustainable point of view, it is also fascinating and exciting. Many fish species care for their brood and it's really fun to observe how the parents protect and look after their offspring (e.g. cichlids, labyrinth fish)

To rear the baby fish you need the suitable food. A special feeding kit has been designed for that purpose, consisting of three bags which have been precisely adapted to the growth of the fry (JBL PRONOVO BEL FLAKES BABY).

There is a big difference between juveniles which come from egg-laying and those which come from viviparous fish species. The young fish of egg-laying species are much smaller and need the smallest food available immediately after hatching, once the yolk sac has been consumed. They often ingest so-called infusoria (micro organisms) that live in their environment on leaves or in the soil.

Then they are usually able to eat powdered food dissolved in a liquid (JBL PRONOVO BEL FLUID). When they have grown a little, they reach the size of the juveniles of viviparous fish species such as guppies or platies. Now they can consume normal powdered food (JBL PRONOVO BEL GRANO BABY or the first type of food from the JBL PRONOVO BABY 3-piece set). At this stage live brine shrimps (*Artemia*) are also an option, and you can even grow these yourself from eggs (JBL ArtemioSet). As the fish grow, the other two food sizes in the JBL PRONOVO BABY 3-piece set are suitable.



Clutch



Parents with fry



Livebearer baby



Juvenile fish of an egg-laying species



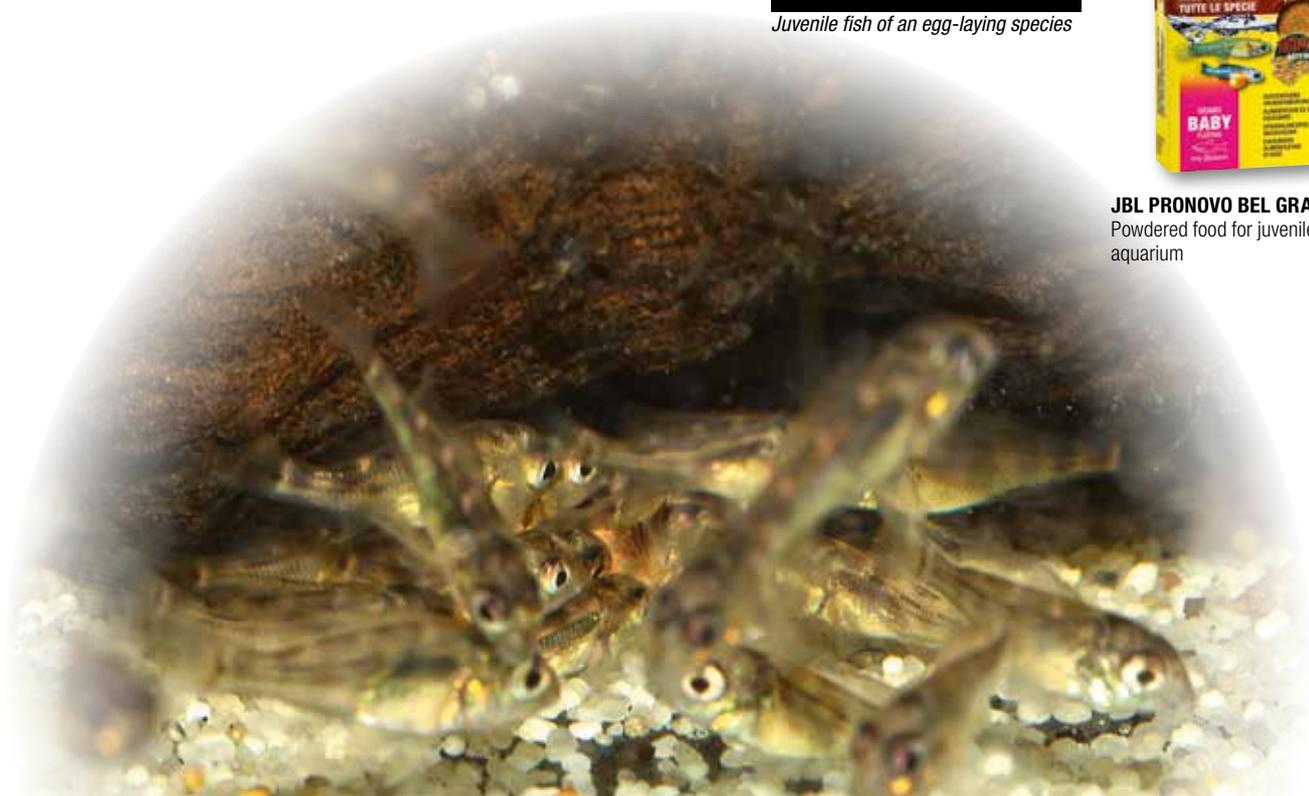
JBL PRONOVO BEL FLAKES BABY
Rearing food set for juveniles of viviparous aquarium fish



JBL PRONOVO BEL FLUID BABY
Liquid rearing food for young egg-laying aquarium fish



JBL PRONOVO BEL GRANO BABY
Powdered food for juvenile fish in the aquarium





Axolotls, newts and clawed frogs

Even though these are amphibians, we are including these animals here because, due to their aquatic lifestyle, they are always kept in aquariums and never in terrariums. Only with newts are there exceptions.

Axolotls are amphibians, like newts and frogs. Unlike other amphibians they remain in their larval stage with external feathery gills their whole life.

Axolotls originally come from a lake in Mexico which is situated high up and has therefore low temperatures at about 20 °C. Nowadays Mexico City has expanded so much that the lake is located within the city and can hardly sustain wildlife due to rubbish tipping and

other contamination. As a result axolotls are considered extinct in their native habitat.

Axolotls find their food olfactorily, i.e. through their sense of smell and with the help of mechanoreceptors which, like the lateral line organ of fish, perceive flow and vibration stimuli. Live food and "interesting" smelling food such as JBL PRONOVO LOTL is therefore ideal for a species-appropriate diet. In their natural habitat they lie in wait for their prey and eat crustaceans, insect larvae, small fish and even small specimens of their own species. The food composition of JBL PRONOVO LOTL takes their food spectrum into account and includes freshwater fish meat (trout), shrimps, Gammarus and insects (black soldier fly larvae).



Axolotl



Newt



Clawed frog



Albino axolotl



JBL PRONOVO LOTL GRANO S
Granulated staple food for small axolotls from 3-10 cm

JBL PRONOVO LOTL GRANO M
Granulated staple food for medium-sized axolotls from 8-20 cm

JBL PRONOVO LOTL GRANO XL
Granulated staple food for large axolotls from 15-25 cm

Specialist feeders

There are fish species that are very difficult or even impossible to get used to replacement food (dry food). However, this should not be confused with fish that have become accustomed to a certain food or type of food. Experts change the food by mixing the "new" food with the "old" food and adding more and more new food until only new food is given. Only very few absolute specialist feeders cannot be changed. Many puffers, for example, are so used to snails that they do not consider other food as food.

However, it often works to switch puffer fish to shrimp or food tablets (JBL PRONOVO TAB). Who always has snails in the house?

If fish only react to movement stimuli (predators), feeding with live food is easiest. The same type of food, e.g. red blood worms, is no longer accepted as frozen food because it does not move. Sometimes it helps here to passively move the non-moving food by currents in



the water. Granulated food that sinks to the bottom can also be accepted when it sinks. However, once it lies on the bottom, it is not perceived as food.

Fish learn from other fish: It can help if you put some fish that are used to normal food in front of a specialist feeder. This way the refuser learns what is edible and how to eat it. Imitation and food envy are good motivators!

Try offering the JBL PlanktonPur in difficult cases. This is fresh plankton that is easily kept moving in the water by the current. Countless problem fish have been persuaded to eat with JBL PlanktonPur and later even went on to eat other types of food. It is worth a try!





Variety is half the battle

Your fish are of course happy if they are fed a different food from time to time in addition to their main food. For this purpose, you can choose from various other foods in addition to the species foods: JBL PRONOVO COLOR was developed to intensify the colours even more in a natural way.

Healthy green food is available to your fish with JBL PRONOVO SPIRULINA.

Among the treats, your fish will look forward to red blood worms (JBL PRONOVO FIL), TUBIFEX (JBL PRONOVO FEX), brine shrimps (JBL PRONOVO ARTEMIO), water fleas (JBL PRONOVO DAPH) or healthy insects (JBL PRONOVO INSECT).

You don't have to have all types of food at home at once, but every creature is happy to have a change of menu now and then.

SPIRULINA



JBL PRONOVO SPIRULINA FLAKES M
Spirulina green food flakes in size M for all aquarium fish from 8-20 cm

JBL PRONOVO SPIRULINA GRANO S
Spirulina green food granulate in size M for all aquarium fish from 3-10 cm

JBL PRONOVO SPIRULINA GRANO M
Spirulina green food granulate in size M for all aquarium fish from 8-20 cm

COLOR



JBL PRONOVO COLOR FLAKES M
Colour food flakes for vibrant colours in all aquarium fish from 8-20 cm

JBL PRONOVO COLOR GRANO S
Colour food granulate for vibrant colours in all aquarium fish from 3-10 cm

JBL PRONOVO COLOR GRANO M
Colour food granulate for vibrant colours in all aquarium fish from 8-20 cm



FIL



FEX



ARTEMIO



DAPH



INSECT



JBL PRONOVO FIL NATURE M
Red blood worms as treats for all ornamental fish from 3-10 cm

JBL PRONOVO FEX NATURE M
Tubifex as a treat for all ornamental fish from 8-20 cm

JBL PRONOVO ARTEMIO NATURE M
Artemia treats for all ornamental fish from 8-20 cm

JBL PRONOVO DAPH NATURE M
Water fleas as a treat for all ornamental fish from 3-10 cm

JBL PRONOVO INSECT STICK S
Aquarium food sticks in size S for all aquarium fish from 3-10 cm

Feeding at the weekend and during holidays

Aquarium animals are the easiest pets to look after when you're away! You can do a partial water change and filter clean just before you leave, and for feeding you can choose between:

Your neighbour:

Yes, your friendly neighbour might feed your fish. But he or she may not know how much food to give and the usual tendency is to overfeed. This can lead to serious problems.

Weekend food

(JBL PRONOVO BEL WEEKEND):

One pack contains 4 food blocks. One food block provides approx. 15 ornamental fish with food for three days. The fish nibble on the food block and it slowly dissolves, gradually releasing the food it contains. The block consists of a calcium material which is absolutely unproblematic for the aquarium water.

Holiday food (JBL PRONOVO BEL HOLIDAY/ PRONOVO RED HOLIDAY):

A larger food block JBL PRONOVO BEL HOLIDAY provides 25 ornamental fish up to 10 cm in size with food for up to 14 days. A food block (3 are included) of the JBL PRONOVO RED HOLIDAY provides 1-3 goldfish or veiltails with food for up to (3x) 6 days. When the fish nibble on the food block, it slowly dissolves and gradually releases the food it contains. The block consists of a calcium material that is absolutely unproblematic for the aquarium water.



JBL PRONOVO BEL HOLIDAY BLOCK M
Holiday complete food for all aquarium fish

JBL PRONOVO RED HOLIDAY BLOCK M
Holiday food for goldfish and veiltails

JBL PRONOVO BEL WEEKEND BLOCK S
Weekend complete food for all aquarium fish

Automatic feeder

(JBL PRONOVO AUTOFOOD):

This automatic feeder is a perfect solution. It feeds up to 4x daily (e.g. useful for young fish) amounts of food that you can select individually for each feeding. It can be filled with any granulate (NOT flake food!) up to 3 mm. As it holds up to 375 ml, it is also suitable for longer absences and, thanks to its battery operation, is not dependent on electricity. A 250 ml JBL Novo food tub can be screwed onto the top of the feeder to increase the food volume from 125 ml to 375 ml. An adapter ring is available for the new JBL PRONOVO tins whose diameter is not identical to the JBL Novo tubs.

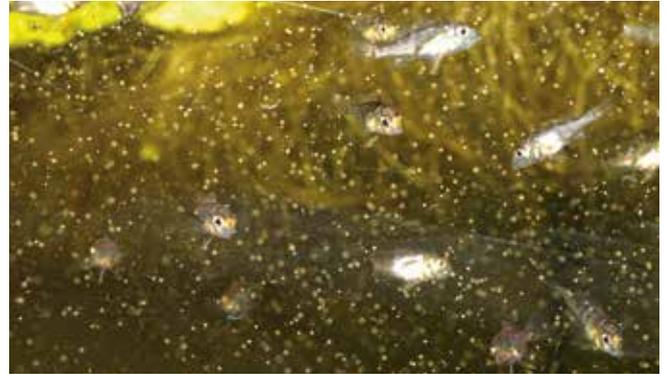




Homemade live food

Catching live food such as water fleas in the wild has become complicated over time: In many countries it is forbidden for nature conservation reasons and many waters are unfortunately no longer clean. Fortunately, there are brine shrimp eggs! These eggs can be stored dry and the small crustaceans (nauplii) only hatch when the eggs are placed in salt water. JBL has developed a set (JBL ArtemioSet) that makes cultivating Artemia crustaceans child's play.

This way your fish, and not only the young fish, get a fresh and extremely nutritious live food. It is also interesting to note that brine shrimps have their highest nutritional value directly after hatching, as their yolk sac in particular contains many important nutrients!



Natural food: JBL PlanktonPur

This natural food is very special: it consists of pure arctic zoo plankton, which is kept without preservatives by a special temperature process. PlanktonPur is available in 2 sizes: Size S with miniplankton for fish from 2-6 cm and size M for fish from 4-14 cm. It is freshly sealed in oblong mini-sticks and can thus be conveniently fed in portions.

On the JBL expeditions, ALL fish in the wild ate PlanktonPur immediately, even though they had never been offered food from a "fresh stick" before. It counts as a great success, because many fish species in their natural habitats only accept foreign food after a certain acclimatisation period.



Underwater feeding near Canaima, JBL Expedition Venezuela



ARTEMIO	
NATURE 	
M	100 ml 250 ml

BETTA			
FLAKES 		GRANO 	
S	20 ml 100 ml	S	20 ml 100 ml CLICK

CORYDORAS	
TAB 	
M	100 ml

BEL			
FLAKES 		GRANO 	
S	100 ml	XXS	100 ml CLICK
M	100 ml 250 ml 750 ml 1.000 ml 5.500 ml	XS	20 ml 100 ml CLICK
		S	20 ml 100 ml CLICK 250 ml CLICK
		M	250 ml CLICK

BETTA INSECT	
STICK 	
S	20 ml 100 ml

CRABS	
WAFER 	
M	100 ml 250 ml

BEL BABY			
FLAKES 		GRANO 	
BABY	3x 10 ml	BABY	100 ml
FLUID 			
BABY			50 ml

BOTIA	
TAB 	
M	100 ml 250 ml 1.000 ml 5.500 ml

DANIO	
GRANO 	
XS	20 ml 100 ml CLICK

BITS	
GRANO 	
S	250 ml CLICK 1.000 ml
M	250 ml CLICK 1.000 ml 5.500 ml

DAPH	
NATURE 	
S	100 ml

BEL WEEKEND	
BLOCK 	
S	20 g

CICHLID	
GRANO 	
S	100 ml CLICK 250 ml CLICK
M	250 ml CLICK 1.000 ml
XL	1.000 ml

FANTAIL	
GRANO 	
S	100 ml CLICK
M	100 ml CLICK 100 ml 250 ml CLICK 1.000 ml

BEL HOLIDAY	
BLOCK 	
M	43 g

COLOR			
FLAKES 		GRANO 	
M	100 ml 250 ml	S	100 ml CLICK 100 ml
		M	250 ml CLICK 250 ml

FEX	
NATURE 	
M	100 ml 250 ml



FLAKES



GRANO



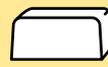
STICK



WAFER



TAB



BLOCK



NATURE



FLUID

FILNATURE 

M

100 ml
250 ml**MALAWI**FLAKES GRANO 

M

250 ml
1.000 ml

M

250 ml CLICK
1.000 ml
5.500 ml**SHRIMPS**GRANO 

S

100 ml CLICK
250 ml CLICK

M

100 ml

GOURAMIGRANO 

S

250 ml CLICK

NEONGRANO 

XXS

20 ml
100 ml CLICK**SPIRULINA**FLAKES GRANO 

M

100 ml
250 ml
750 ml
1.000 ml

S

100 ml CLICK

M

250 ml CLICK

GUPPYFLAKES GRANO 

S

100 ml
250 ml

S

100 ml CLICK
250 ml CLICK
250 ml**PLECO**WAFER 

M

100 ml
250 ml
1.000 ml
5.500 ml

XL

250 ml
1.000 ml
5.500 ml**INSECT**STICK 

S

20 ml
100 ml
250 ml**RED**FLAKES GRANO 

M

100 ml
250 ml
750 ml
1.000 ml

M

100 ml CLICK
100 ml
250 ml CLICK
250 ml**TAB**TAB 

M

100 ml
250 ml
1.000 ml
5.500 ml**KILLIFISH**GRANO 

S

100 ml CLICK

RED INSECTSTICK 

S

20 ml
100 ml**TANGANYIKA**FLAKES GRANO 

M

250 ml
1.000 ml
5.500 ml

M

250 ml CLICK
1.000 ml**LOTL**GRANO 

S

100 ml CLICK

M

250 ml

XL

250 ml

RED HOLIDAYBLOCK 

M

17 g

Feeding accessories – what else is useful?

JBL food clip



The JBL food clip is ideal for feeding your aquarium inhabitants with algae, lettuce or catappa leaves. You can watch your fish eating and the leaves do not float around all over the aquarium. The food cannot drift away and land in the decoration where the fish can't reach it. You can turn the clip in any direction and it comes with a suction holder for secure attachment.

JBL NovoStation



The JBL NovoStation feeding ring enables you to feed the fish with no waste. The food no longer floats all around the tank and gets stuck in the plants or lies on the bottom to the detriment of the water values. The movable holder compensates for any fluctuations in the water level. The feeding ring makes it easier for you to observe the fish while they are eating.

JBL PRONOVO AUTOFOOD



When you're away from home, whether for a day or for a long holiday, let the JBL PRONOVO AUTOFOOD take care of your fish feeding. It allows you to select different amounts of food as required, up to 4 times a day. The feeding automat is battery driven and can dispense any granulate between 1 and 3 mm. With a volume of up to 375ml it can cope for really long periods of time.

JBL Atvitol



Vitamin deficiency can be a major problem in fish nutrition. Flake and granulated foods lose most of their vitamins 3 months after the seal is opened and frozen food doesn't contain many vitamins. That's why fish should be given vitamins regularly to increase their resistance to disease.



Tip: If vitamins are to be added via the water and not via the food, it's better to do it after switching off the lighting, as many vitamins are destroyed by light.



Careful! These fish eat aquarium plants!

There are few fish species that are really notorious herbivores. And even among these species, one individual often eats more plants than the other. Fish can be individualists too.

By adding plant food you can reduce the fish's hunger for greens, but never completely eliminate it. It is often possible to add lots of fast-growing plants which grow back faster than they're eaten!



Holes and nibble signs in plants, caused by fish



Distichodus



Silver dollars (e.g. *Metynnis argenteus*)



Leporinus species (e.g. *Leporinus affinis*)



Buenos Aires tetras (*Psalidodon anisitsi*)



Grazing fish from Lake Malawi



Grazing fish from Lake Tanganyika



A lot of Tilapia species (e.g. *Tilapia buttikoferi*)



A lot of Central American large cichlids
(e.g. Heros, Uaru, Cichelichthys, Hoplarchus)



Oreochromis mossambicus



Long-whiskered cat fish (Ancistrus species)



Some Panaque species
(e.g. Panaque nigrolineatus)



Hypostomus species
(e.g. Hypostomus plecostomus, H. punctatus)



Glyptoperichthys species
(e.g. Glyptoperichthys gibbiceps)



Liposarcus species (L. anisitsi)



Night active Characins
(e.g. Semaprochilodus laticeps)



Some loach species (e.g. Botia macracanthus)



A lot of larger barbel species



Goldfish (Carassius auratus)

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The new food
for your aquarium



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