



WORLD FEEDS™

INGREDIENTS GUIDE



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WHOLE FISH MEAL



BLENDED FISH OIL

There are many different types and qualities of fish meal available and used in fish food manufacture. Typically 'trash' or 'trimmings' are used i.e. the heads and tails after the main fillet is cut out and used for human consumption. Predatory fish consume mostly whole animals, therefore it is important to use whole fish as an ingredient to ensure we get all the goodness of the fish. Our fish meal is made under low temperature conditions to retain the integrity of the nutrients.

Many fish meals have a very high lipid (oil) content and also many come from cold water areas where the lipid requirement is obviously very different from that of fish species which come from the coral reefs etc. Therefore, it is advantageous to us that our fish meal has had the oil extracted. This gives us the ability to put a special blend of fish oil back into the mix which is entirely suitable for tropical marine species.

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SHRIMP



SQUID



MUSSEL

These are the main food groups we use to replicate natural elements that fish would feed on in their natural environment. They act as the principal attractants that make Vitalis diets so quickly attractive to many species. Using these food groups (alongside Whole Fish Meal) allows us to give the fish the “variety” that many fish keepers ask for: fish, mollusc and crustacean.

We use the whole animal in these ingredients – they are squeezed, pressed and milled, leaving a very fine powder and no waste. Each is sustainably sourced from approved suppliers and all are human food grade - ensuring they are of the highest quality.

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ALGAE BLEND



FINE ALGAE BLEND

We use several different types of sustainably harvested algae including *Ascophyllum* and *Ulva*. These are all pure marine algae which are used in either coarse or fine forms according to the diet. For example, in Vitalis Algae Flakes the coarse algae blend is visible as small coloured pieces within the flake. When you put the flake in water you will see the algae swell up as it takes on the water.

These algae provide a pure and rich marine-based protein source for all herbivorous species.

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SPIRULINA

Dried *Spirulina* contains about 60% protein. It is a complete source of protein and does contain all essential amino acids. However there are reduced amounts of methionine, cystine and lysine when compared to that of fish flesh. Due to this we do not use it as a protein source in our marine diets but do use it strategically as a percentage in our freshwater range. We also use it for the many pigments it contains such as beta carotene zeaxanthin, chlorophyll-a, xanthophyll, and canthaxanthin.



VITAMINS & MINERALS

Our vitamin and mineral pre-mixes are specially formulated and produced only for World Feeds diets by a leading premix manufacturer. They are finely balanced to give all species, both marine and freshwater, the correct levels of minerals and vitamins without further need for supplementation.

Careful attention is paid to the minerals required by freshwater species as they do not have a ready source as marine species do in saltwater environments.

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WET MIX

Once our key ingredients are formulated and prepared, we add an appropriate amount of water (this is important to contribute towards the soft, digestible nature of our feeds) and the “wet mix” is thoroughly blended together into a semi-moist powder form ready to be processed by one of our bespoke extruders or flake processing machinery.

Because of this unique and specific way in which our mixes are formulated and processed, we are able to produce distinctive feeds such as our semi-moist pellets which are soft and malleable - aiding digestion.

SOME MISCONCEPTIONS & EXPLANATIONS

ASH CONTENT

Ash content is one of the most misinterpreted declarations on a fish food label.

Carnivorous fish eat whole shrimp and fish, so naturally we use whole shrimp and fish in our diets - therefore the mineral content (bone, scales, shell etc.) is at its natural level. When the ingredient is incinerated during processing, this mineral content leaves a percentage of ash. From this, one can establish the percentage of meat to mineral that is to be declared as the “ash content”. A misconception is that this is a somehow harmful added component when it is in fact simply the presence of minerals that would be present if consumed in the wild.

We feel a more suitable label for this is ‘inorganic matter’.

FIBRE CONTENT

Fibre is another area surrounded by ambiguity. Even within the scientific community, it can mean different things. There are both soluble and insoluble forms and (depending on how it is tested) it can yield different results. Fibre is naturally present within many of the raw materials we use, such as cellulose found in plant components. Even the beta glucans we use as immunostimulants are classed as fibre. The scientific definition of dietary fibre is as follows.

“Dietary fibre is the edible parts of plants or analogous carbohydrates that are resistant to digestion and absorption in the human small intestine with complete or partial fermentation in the large intestine. Dietary fibre includes polysaccharides, oligosaccharides, lignin, and associated plant substances”

Therefore, the legal declaration of fibre content on a label is one of convenience, given that it is being fed to animals. We believe that many freshwater herbivores would have no problem digesting some of the items mentioned. Therefore is it really fibre? Fish essentially don't have a requirement for fibre as humans do, yet it must be declared.

SOME MISCONCEPTIONS & EXPLANATIONS

MOISTURE CONTENT

As our soft pellets and grazers are unique in their retained moisture content, we declare our components on an “as is basis” which includes the percentage of moisture within the product. As a result, this may make our protein content (for example) appear lower on the label than other available products, simply as the percentage is lowered due to the inclusion of moisture.

We employ unique low temperature extrusion techniques using bespoke machinery of our own design. This process enables our pellet and grazer products to retain moisture, locking in the nutrition and producing a soft and malleable feed that is highly digestible. Extruding at the lowest temperature (in line with EU regulations) means that our high quality ingredients are not denatured and preserve all of their nutritional integrity.

The soft nature of the food is crucial to its high digestibility as it can easily be broken down by the fish’s digestive system. Digestibility is a measure of the level of nutrition that a particular food provides. The amount of nutrients able to be absorbed by the gut and transferred into the bloodstream. As a rule, the higher quality the ingredients, the more digestible the food, and thereby nutritional benefit to the animal.