

FISHMEAL AND FISH OIL

Strategic and responsible marine ingredients

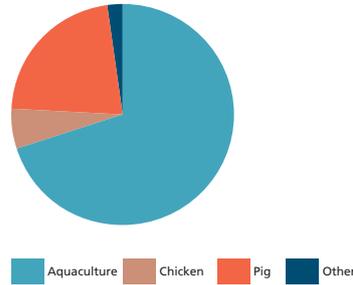
Raw fish and trimmings are boiled, separated, dried and grinded into fishmeal and fish oil.

100 kg of raw material produces ~ 20,6 kilos of fishmeal and ~ 6,5 kilos of fish oil.

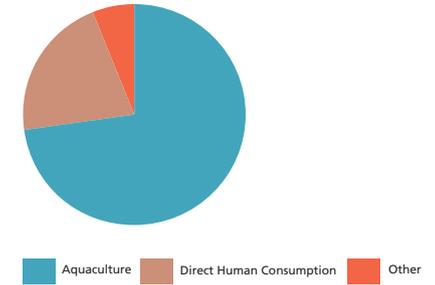
EU fishmeal members produce 10 % of the world's fishmeal and 20 % of the world's fish oil.



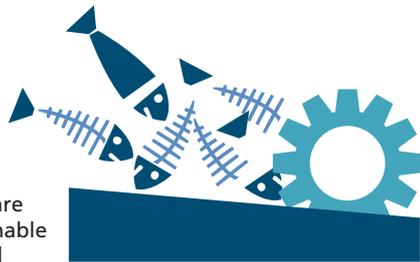
Global use of fishmeal by market in 2015



Global use of fish oil by market in 2015

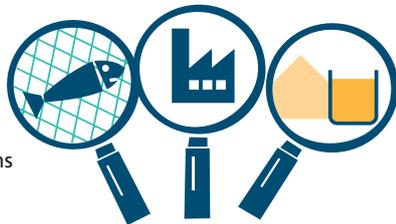


RESPONSIBILITY



- EU fishmeal members are committed to a sustainable exploitation of natural resources based on biological advice
- No overfishing
- Fish stocks are within safe biological boundaries and closely monitored
- Use of fish with no or little demand for direct human consumption
- Use of rest raw material/trimmings from the filleting industry
- Stocks and factories are certified by independent third parties
- Complies with IFFO RS, MSC and FAO Code of Conduct
- Primarily used in aquaculture-production, which has a low environmental footprint compared to e.g. beef and pork

HIGH QUALITY PRODUCTS

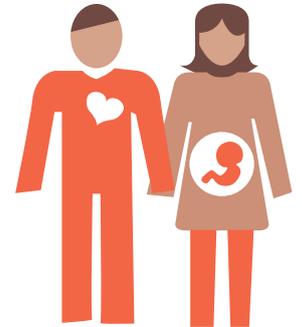


- Raw material freshness
- Modern vessels with cooling equipment
- Pelagic fishing with low impact on ecosystems
- Full traceability to verify species and origin
- Advanced production and rinsing facilities remove persistent organic pollutants that may be in the raw material
- Products are pure and free from contaminants, pathogenic organisms and mycotoxins, natural toxins etc.
- Quality testing is performed all the way from catch to customer ensuring that all products are in accordance with the highest standards
- Production is performed in respect for the use of valuable marine resources and certified according to ISO standards

HEALTH BENEFITS

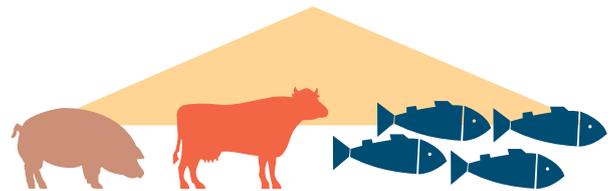
Fishmeal and fish oil provide all essential amino acids, minerals, phospholipids and omega-3 fatty acids (DHA and EPA) and bring those into the human diet.

EPA and DHA are central components in all cell membranes – particularly important for the development of the brain and vision early in life. EPA and DHA contributes to the function of the heart, blood system and immune system.



- Reduces blood pressure
- Reduces risk of cardiac attack
- Reduces inflammation and formation of blood clots

STRATEGIC FEED INGREDIENTS



All marine fish are reliant on marine omega-3 fatty acids to varying degrees and fishmeal and fish oil are, without equal, the most valuable ingredients in diets for aquaculture and many land-farmed animals.

The composition of micronutrients in fishmeal, including amino acids, vitamins and minerals, support growth and optimal physiological function of animals and farmed fish. This makes fishmeal and fish oil indispensable feed ingredients.

- High protein content of 62 to >70 %
- Rich in long chain omega-3 fatty acids EPA and DHA
- Contains minerals; calcium, phosphorus, magnesium, potassium and selenium
- Contains vitamins; B1, B2, B6 and B12
- High digestibility



Fishmeal and fish oil – responsible marine ingredients based on certified sustainable fisheries

- Fishmeal and fish oil is produced mainly from small, short-lived fish with little or no potential for direct human consumption as well as from recycled trimmings from fish processing.
- The major species used for production of fishmeal and fish oil in Europe are capelin, sandeel, blue whiting, sprat, norway pout and boarfish.
- The production is based on certified sustainable exploitation of natural resources. All fish stocks used to produce fishmeal and fish oil in European countries are subject to catch limitations. The total allowable catches (TACs) are based on biological advice and under governmental regulation and control.
- A growing amount of raw material comes from trimmings. The fillet yield for most fish species varies between 30% and 65% of the mass of the fish and the rest raw material is a valuable resource for the fishmeal and fish oil producers. The European fishmeal industry is thus an important contributor to a circular blue bioeconomy.
- All fish stocks used as raw material by EUfishmeal members are either IFFO RS compliant or MSC certified. The MSC certification is further recognized by GSSI's Global Benchmark Tool for seafood certification schemes.
- All EUfishmeal members meet the requirements of IFFO RS for the production and for the fish they are sourcing. This means independent third party inspections and certification, full traceability and responsible production.
- EUfishmeal support and implement the FAO code of conduct for responsible fisheries.
- Fishmeal as a protein feed ingredient competes with other protein sources. EUfishmeal recognizes the need for other protein sources in agriculture and aquaculture feed to meet the growing global food demand. Alternatives should be equally responsible and traceable.
- Aquaculture production has a low environmental footprint relative to the production of other food e.g. beef and pork.

