

The Strategic Value of Marine Ingredients

Nutrition

A strategic role to promote animal health, welfare and sustainability in aquaculture

Marine ingredients, like fishmeal and fish oil, have been crucial to the growth and intensification of aquaculture, serving as the cornerstone of feed formulations worldwide. While other ingredients now contribute to the bulk of nutrients in feed, marine ingredients **remain strategically important** by providing unique nutrients that cannot be easily replaced by other sources, those essential for **promoting optimal animal health and welfare, growth and immune function**.



Protein: Rich in essential amino acids that perfectly match nutritional requirements for fish.

Amino Acids: Supplies all 10 essential amino acids needed for growth, which animals cannot produce themselves.

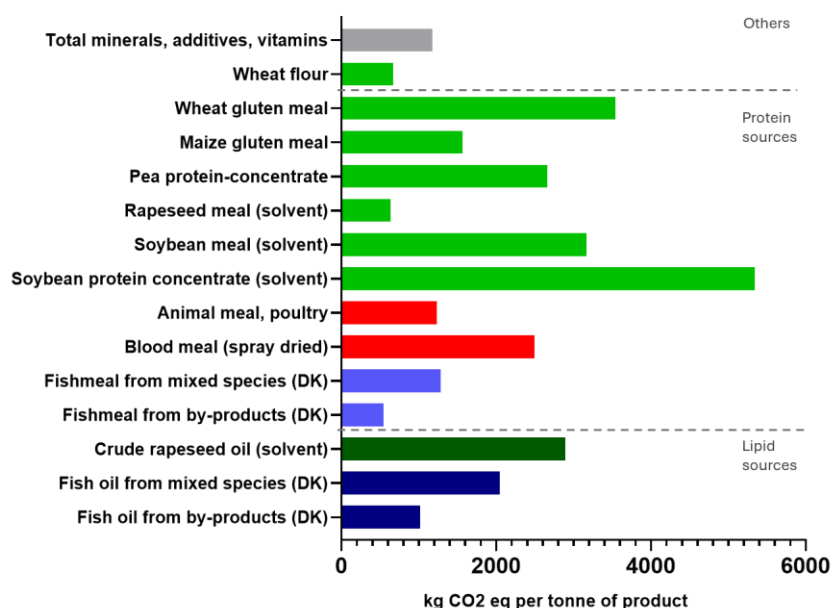
Phospholipids: Crucial fats for cell membranes, which is crucial for growth.

Long-chain Omega-3s (EPA & DHA): A superior source for overall cardiovascular and brain health.

Minerals: Provides essential minerals like calcium, phosphorus, magnesium, potassium, and selenium that contribute toward optimal animal health.

Vitamins: Naturally rich in A, D, E, K, and key B vitamins (B1, B2, B6, B12) for immune, bone, and nerve health.

Climate footprint



CO₂-equivalent emissions per tonne of Danish fishmeal and fish oil, based on recent industry-supplied LCA data in 2024. The dataset reflects actual production in Denmark and is being prepared for inclusion in the GFLI database to support more accurate environmental benchmarking in feed formulations.

Plant proteins and oils now dominate compound feed to farmed fish, a trend that is likely to continue, but their production brings environmental challenges such as land use, deforestation and greenhouse gas emissions.

Marine ingredients are essential for both nutrition and climate-conscious compound feed. Their unique nutritional profile reduces the need for land-intensive ingredients and lowers the greenhouse gas emissions of feed formulations.

