

December 2023 News Update

IFFO's monthly newsletter



Editorial

On 28 November, a Virgin Atlantic flight took off from Heathrow Airport to New York's JFK using pure Sustainable Aviation Fuel (SAF). "This lower carbon intensive fuel is produced from waste vegetable oils" ministers and journalists commented. Waste, really? (...)

[Read more](#)



IFFO update on regulations pertaining to the transport of dangerous goods by shipping

Regulations are overseen by the United Nations International Maritime Organisation (IMO). Of the various regulatory codes the IMO manages, two are of direct relevance to marine ingredients and have been harmonised.

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FAIRR
A COLLER INITIATIVE

Coller FAIRR Protein Producer Index 2023/24

How the animal protein sector addresses ESG risks and opportunities

NOVEMBER 2023

Comments to the Coller FAIRR Protein Producer Index

The farming side is the tip of the iceberg when it comes to protein production. Let's not forget what we know is a blind spot – not being linked to business-to-consumer communications – but is equally important: the role played by the feed sector in producing nutritious proteins.

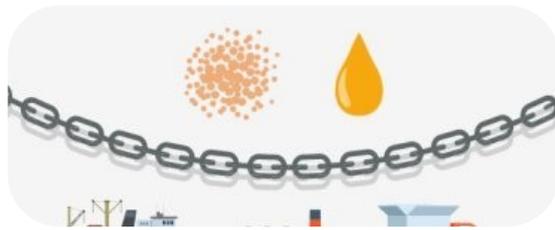
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Sustainability, or just transferring risk elsewhere?

Approval by Norway's Food Safety Authority to allow genetically modified rapeseed oils to be used in salmon feeds in that country has led to discussions around sustainability.

[Explore further](#)



Insights from MarinTrust and Global Dialogue on Seafood Traceability

A Working Session was organised by the Global Dialogue on Seafood Traceability (GDST) and MarinTrust on the 23rd October 2023 in Cape Town, South Africa.

[Read on](#)

Membership information

New IFFO members:

Salmon Group AS, Fish farmers, Norway

No longer IFFO Members:

Wexons Trading L.L.C.

- [Aquafeed](#): Formulation in challenging times - Feed formulators have many alternatives to fishmeal and fish oil, but they are not without challenges
- [UndercurrentNews](#): Importance of finding new sources of EPA and DHA
- [Intrafish](#): Peru anchovy industry on edge as high number of juvenile fish and bad weather slow fishing
- [SeafoodSource](#): Lingering El Niño stoking seafood industry fears across Latin America
- [SeafoodSource](#): MarinTrust stresses importance of fishmeal factory certification
- [Global Seafood Aquaculture](#): After a turbulent 2023, 'signs of optimism' ahead for global seafood production
- [Peru21](#): World Fisheries Day: This Food Could Ensure Food Security
- [TheFishSite](#): Consumers and their lawyers smell something fishy

Innovation & Research

FISHMEALS and their competition

- A [study](#) examined the impact of **substituting Peruvian fish meal (PFM) with tuna by-product meal (TBM)** in feeds on growth and feed availability of the early stage of juvenile rockfish (*Sebastes schlegeli*). Across a series of six experimental feeds 20%, 40%, 60%, 80%, and 100% PFM were replaced by TBM, from an initial inclusion level of 55% PFM in the diet. Weight gain and feed consumption of rockfish fed the 20% and 40% diets were comparable to rockfish fed the 0% diet. Feed efficiency, biometric indices, hematological parameters, proximate composition, and amino acid profiles of rockfish were not impacted by dietary treatments.
- A [study](#) assessed the potential of **four bacterial (*Methylococcus capsulatus*) single cell protein (SCP) products** used as alternative protein sources for Pacific white shrimp (*Penaeus vannamei*). A growth trial and a digestibility trial were undertaken, during which the bacterial SCP products were compared with a high-quality fishmeal (FM) and a soy protein concentrate (SoyProt). Growth and feed utilization were similar for shrimp fed either the FM diet or one of the bacterial SCP diets, whilst the poorest growth and feed utilization were observed for shrimp fed the SoyProt diet. Protein digestibility of all four of the SCP products was similar to FM, whilst amino acid (AA) digestibility was comparable to FM for three of the four SCP products. Lower digestibility in one SCP product indicating a possible influence of processing conditions on AA availability of bacterial SCPs.

FISHOILS and their competition

- A [study](#) investigated the compositional and physiological responses of European seabass *Dicentrarchus labrax* to a dietary gradient of n-3 long-chain polyunsaturated fatty acids (LC-PUFA). **Six diets (D1-D6) containing blends of fish oil and vegetable oil** that resulted in a gradient of n-3 LC-PUFA varying from 0.23 to 3.40% of diet were fed. The only effect of diet on proximate composition was a decrease in hepatic lipid content as dietary n-3 LC-PUFA increased. Fatty acid composition of tissues was substantially modified by the dietary gradient. Concentrations of LC-PUFA biosynthesis intermediates decreased in tissues as dietary n-3 LC-PUFA. Only a few genes related to LC-PUFA biosynthesis in the liver were influenced by dietary vegetable oil levels. The expression of genes for lipid metabolism (β -oxidation) did not vary among treatments. Overall, European seabass seems less sensitive to a dietary gradient of vegetable oil than other marine fish species.
- Nile tilapia, *Oreochromis niloticus*, grows adequately in the **absence of dietary omega-3 long-chained polyunsaturated fatty acids**, such as eicosapentaenoic (EPA) and docosahexaenoic (DHA) acid, a [study](#) has demonstrated. However, its meat fatty acid profile can be enriched by feeding finishing diets before harvesting. To reach a desirable content of 250 mg of DHA + EPA in a 100 g fillet, the rate of change in the fatty acid profile of tilapia's fillet by feeding diets formulated with soy (SO) or fish oil (FO) over an 8-week study were examined. No significant differences among treatments were observed at the end of the study for growth performance, survival, feed efficiency, body indices, or proximate composition of the fillet, confirming the versatility of tilapia to efficiently use lipid sources of different nature. However, the fatty acid profile of the dietary lipid source directly influenced the fatty acid profile of the fillet; it was confirmed that, under these experimental conditions, it is possible to enrich the fillet of tilapia and reach the target EPA+DHA concentration in just 10 days, for fish of the size used in this study, suggesting that omega-3 enrichment maybe a plausible strategy for value-adding of this species.

SUSTAINABILITY

- Aquatic animals make valuable contributions to food supply, especially as they are our main natural source of eicosapentaenoic (EPA) and docosahexaenoic (DHA) ω -3 fatty acids. In a recent [study](#), the aim was to **assess the contribution of capture fisheries and fish farming (salmon and tilapia) to human nutrient supply in Europe** (EU-28 before Brexit), when feeding no biomass from arable land or waterbodies but only low-opportunity-cost feed (LCF) to livestock and farmed fish. To do this an optimisation model was used allocating available LCF under various scenarios, to maximises human digestible protein supply, while meeting human requirements of vitamin B12 and EPA + DHA. It was found that capture fisheries could fulfil around 40 % of daily per capita EPA + DHA requirements. This contribution would require rebuilding fish stocks and prioritising edible fish for human consumption. It was shown that for Europeans to meet their EPA + DHA requirements they need additional fatty fish (salmon) in their diet. The analysis results show that, when feeding only LCF, that those fatty fish depend on by-products from fisheries to meet their own EPA + DHA requirements and on livestock slaughter by-products to meet their high protein requirements. Overall, the results provide insights into the role of aquatic animals across land and water to contribute to human nutrient supply and provide direction for strategic sustainability development of both capture fisheries and fish farming.

- [12 December 2023: IFFO China workshop, Guangzhou, China](#)
- [23-25 January 2024: GOED Exchange, Athens, Greece](#): IFFO Members can benefit from the same ticket rate as GOED Members for this event: contact GOED for more information
- [15-17 April 2024: IFFO's Members Meeting, Miami, USA](#)
- [18-20 April 2024: China Feed Industry Expo, 2024 - Fujian, China](#)
- [21-23 October 2024: IFFO Annual Conference, Lisbon, Portugal](#)



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