Contributing to open-access science

IFFO
THE MARINE INGREDIENTS ORGANISATION

Reviews in Fisheries Science & Aquaculture

Taylor & Francis Group
an informa business

3 IFFO-led peer reviewed papers in 2024

1

Comparing traditional and novel **protein sources used in aquafeed**

2

Moving towards **holistic assessments of aquaculture** feed

3

Supply and demand for Long-Chain Omega-3 Essential Fatty Acids

Comparing traditional and novel protein sources used in aquafeed

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Glencross, B., Ling, X., Gatlin, D., Kaushik, S., Øverland, M., Newton, R., & Valente, L. M. P. (2024) doi.org/10.1080/23308249.2024.2315049

Key findings:

01 Every ingredient has strengths and weaknesses.

02 Most new resources come with critical constraints.

03 The complementary nature of all feed ingredients should be better explored.

04 Much more can be done to better manage and utilise existing resources.

Moving towards holistic assessments of aquaculture feed

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3 key findings:

1/3 - By not allowing to assess trade-offs between choices, **existing isolated sustainability metrics don't represent** an effective **decision-making tool.**

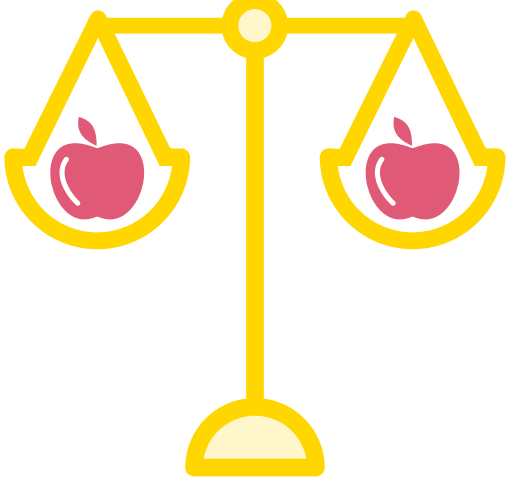
eFIFO (economic Fish In : Fish Out)
FFDR (Forage Fish Dependency Ratio)
FIFO (Fish In : Fish Out)
FCR (Feed Conversion Ratio)

Glencross, B. D., Bachis, E., Robb, D., & Newton, R. (2024)
doi.org/10.1080/23308249.2024.2337426

Moving towards holistic assessments of aquaculture feed

3 key findings:

2/3 - A **shared metric system like Life Cycle Assessment (LCA)** allows for **cross-sectoral comparisons** and is aligned with **international standards**



Glencross, B. D., Bachis, E., Robb, D., & Newton, R. (2024) doi.org/10.1080/23308249.2024.2337426

Moving towards holistic assessments of aquaculture feed

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3 key findings:

3/3 -By using a **common** metric system like LCA, **effective comparisons** can be made, allowing for better, more transparent, and **more sustainable decisions** on ingredient choice whilst **avoiding preconceived biases**.

Glencross, B. D., Bachis, E., Robb, D., & Newton, R. (2024) doi.org/10.1080/23308249.2024.2337426

Omega-3 Futures in Aquaculture

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Main findings:

EPA + DHA **play important biological roles** in aquaculture species, particularly related to health and welfare.

Requirements for EPA + DHA are varied among the different aquaculture species. There is no one-size-fits-all approach.

Glencross, B. D., Bachis, E., Betancor, M. B., Calder, P., Liland, N., Newton, R., & Ruyter, B. (2024)
doi.org/10.1080/23308249.2024.2388563

Omega-3 Futures in Aquaculture

Main findings:

The processes by which EPA + DHA work and interact with other nutrients require further study

(impacts on fish health, immune response, smoltification, reproduction)

Glencross, B. D., Bachis, E., Betancor, M. B., Calder, P., Liland, N., Newton, R., & Ruyter, B. (2024) doi.org/10.1080/23308249.2024.2388563

Omega-3 Futures in Aquaculture

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Main findings (supply):

EPA + DHA production is around 160 ktonnes / y

More than 90% of this production **comes from fishery and aquaculture resources**

Potential 272 ktonnes of EPA + DHA are available from the combined **unutilised fish by-product resources**

Glencross, B. D., Bachis, E., Betancor, M. B., Calder, P., Liland, N., Newton, R., & Ruyter, B. (2024)
doi.org/10.1080/23308249.2024.2388563