



*F3 - Future of Fish Feed is a collaborative effort to support innovative replacements for wild-caught marine ingredients in aquaculture feed.*



Dear F3,

2024 has been a great year filled with significant achievements, and we're excited to share some of our highlights with you. They include the success of the F3 Meeting, a UN endorsement, and our tours of Veramaris, Optimal Aquafeed, and Green Plains in Nebraska and Iowa. 2024 also marked the launch of an inspiring documentary featuring individuals in our network. It's a great reminder of the impact we're all making together.

We're looking forward to driving more innovation and progress in 2025 with all of you!

#### The 2024 F3 Meeting was a BIG Success!

After being interrupted by the pandemic, we held our first in-person meeting in five years, bringing together over 130 leaders from 22 countries. All segments of the aquaculture value chain were represented: investors, ingredient innovators, feed companies, farms, retailers and NGOs. The meeting, themed F3 Superheroes Save the World, featured presentations and panel discussions, including those from the F3 Krill Replacement Challenge contestants. These discussions focused on shaping the future of fish-free feed to protect our oceans and enhance global security. [Learn More](#)

#### Watch the F3 Meeting Highlight Video

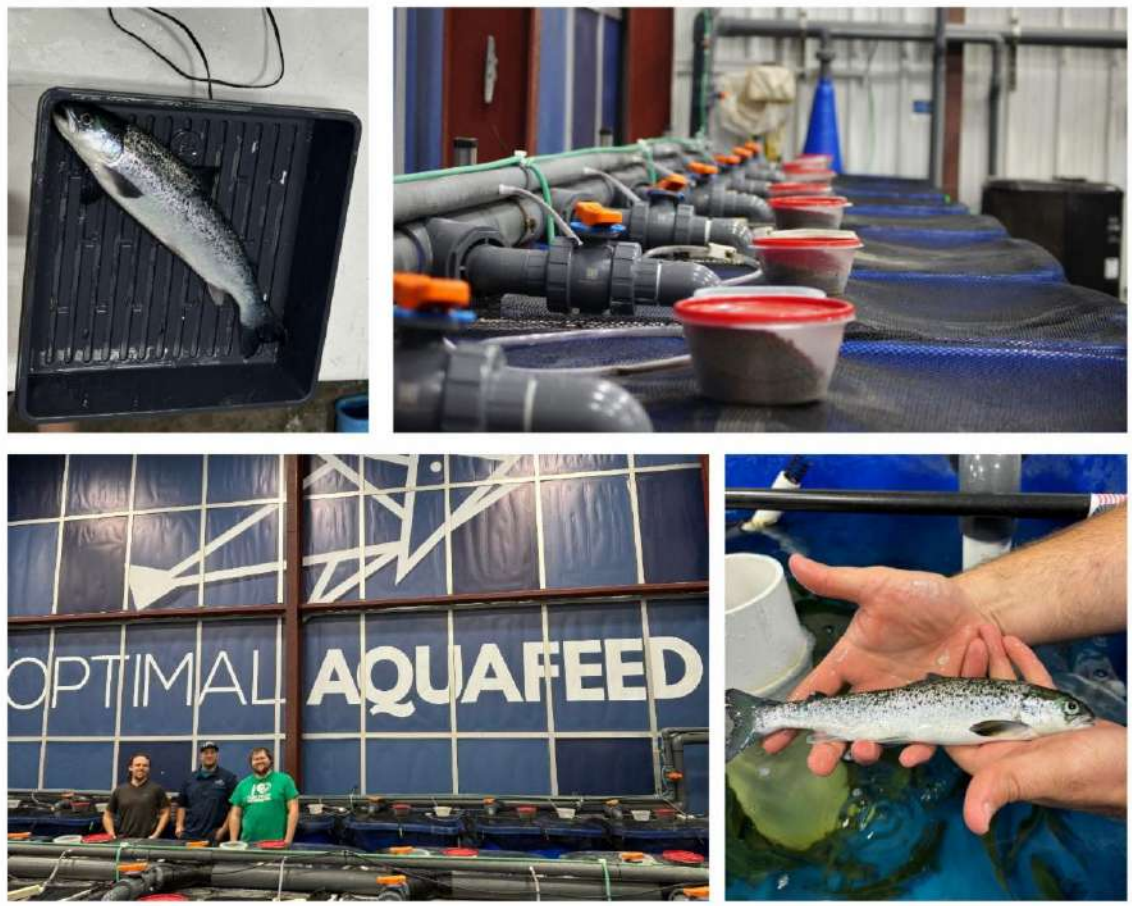


#### F3 and the United Nations

F3 has been officially endorsed as an part of the [United Nations Decade of Ocean Science for Sustainable Development](#), which recognizes that F3 will play a central role in supporting the Ocean Decade mission. Our work aims to catalyze transformative ocean science solutions for sustainable development, connecting people and the ocean to achieve the Ocean Decade vision of 'the science we need for the ocean we want.'

In addition, F3 Judge Kevin Fitzsimmons delivered a compelling presentation about the importance of new aquaculture feed ingredients to support sustainable aquaculture and global food security at the United Nations Headquarters. Kevin's presentation was a part of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of The Sea meeting and he received many questions from the audience, including from Iceland, the Bahamas, and the North-East Atlantic Fisheries Commission.

#### Watch the Video



#### F3 Krill Replacement Challenge Update

The F3 Krill Replacement Challenge feeding trials are officially complete! We are excited to announce the winner of the contest during an award ceremony at [World Aquaculture Society's Aquaculture 2025 Triennial Meeting](#) taking place in New Orleans in March of 2025. Stay tuned for more information!

We were pleasantly surprised by the number of applicants that entered into the competition -- 40 -- because we were unaware that so many potential krill replacements existed. We narrowed down to 10 F3 to compete in the feeding trials: [APC LLC](#), [BSF Ingredients](#), [Calysseo](#), [Enifer](#), [Entobel](#), [Orffa](#), [Phileo](#) by [Lesaffre](#), [Protix](#), [Shalva Algaotech](#), and [Synrise AG](#).

#### Watch F3 Contestant Presentations



#### F3 Team Tours Veramaris, Optimal Aquafeed, and Green Plains Facilities

In our ongoing efforts to accelerate the transition away from wild-caught forage fish and krill in fish feed, several members of the F3 Team traveled to Nebraska and Iowa to visit a cluster of organizations within the F3 Network, including: Veramaris, Optimal Aquafeed, and Green Plains. A highlight of this trip included seeing the Veramaris algal oil manufacturing operation, which has scaled up to be a major supplier of fish oil substitutes, backfilling the unmet demand in 2023 when the Peruvian anchoveta fishery collapsed. We were excited to see production at scale, because fish oil alternatives were a major bottleneck for aquafeed, particularly those that had a balance of EPA, DHA, and ARA.

We also visited the F3 Krill Replacement trial at Optimal Aquafeed, and saw that the fish were healthy and consuming the feed well. Next, we stopped by Green Plains to learn about their Sequence protein. It was exciting to see an alternative ingredient being manufactured at scale while at the same time learning that the U.S. Corn Belt could be central to ingredient innovation.

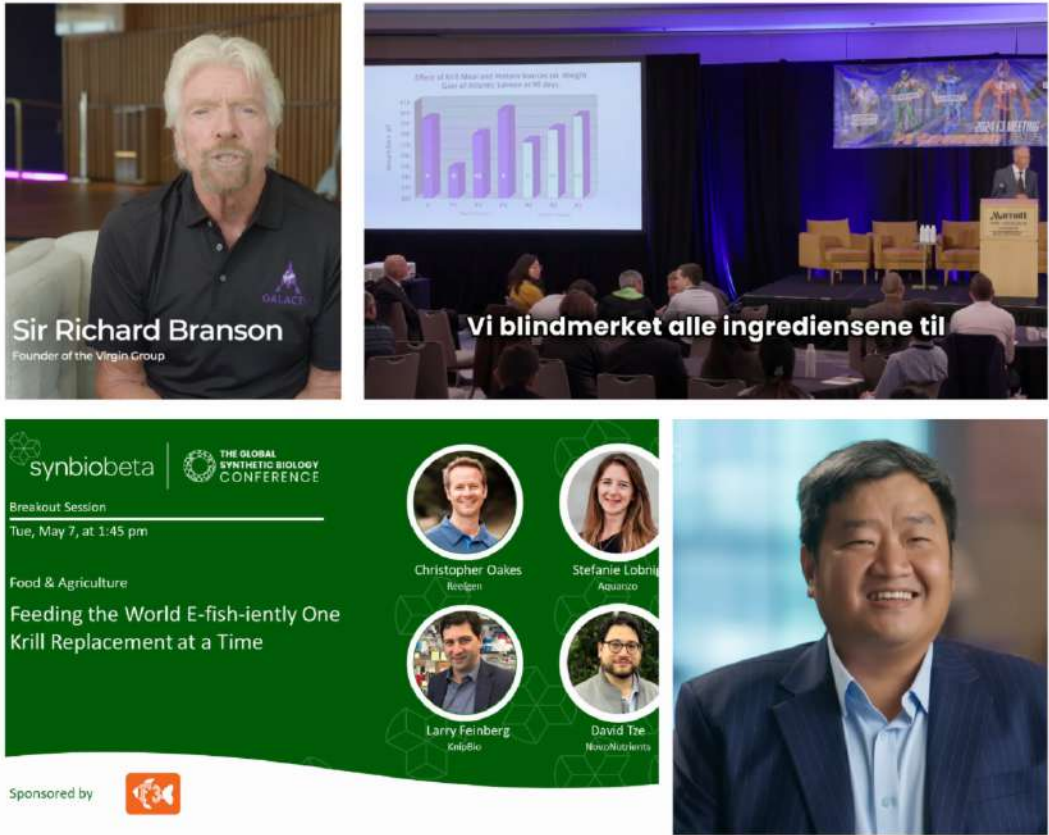
#### F3 Publications

To support the latest *F3 Krill Replacement Challenge*, research examined whether krill meal (KM) impacted the palatability and growth performance of Atlantic salmon fed fishmeal-free plant and animal-based feeds. The results of the study, published in the peer-reviewed journal *Fishes*, illustrated that KM inclusion in animal-based feeds had no impact on salmon growth but did assist fish fed plant-based feeds. Additionally, F3 has recently uploaded a partially annotated bibliography of publications that consider complete replacement of fishmeal in rainbow trout, with over 200 papers being presented. Both contributions advance the F3 mission of providing scientific evidence to support reduced reliance on marine resources in aquafeed and promote sustainable aquaculture.

- [The Impact of Marine Resource-Free Diets on Quality Attributes of Atlantic Salmon in \*Fishes\*](#)
- [Fishmeal-Free Diets & Rainbow Trout Growth Response: A Partially Annotated Bibliography](#) by Dr. Ewen McLean

[Visit the F3 Feed Innovation Network \(F3 FIN\) to learn more](#)

#### Recommended Videos to Watch



#### From the F3 Meeting

- [Sir Richard Branson on the Importance of F3](#)
- You can see the F3 Meeting in [Chinese](#) or [Norwegian](#)

#### In the F3 Network

- F3 Chair Kevin Fitzsimmons and F3 Advisor Loc Tran discuss advances in global aquaculture in the PBS Documentary, [Hope in the Water](#).
- [F3 sponsored SynBioBeta Session](#)
- Dr. Rick Barrows [speaks at Aquatic Life Conference](#)

#### In the News

- [Stanford study](#) suggests consumer demand for krill puts pressure on recovering whale populations.
- [CBS Sunday Morning story](#) on the decline of the horseshoe crab populations in the U.S., and the push to switch to synthetic alternatives for use in medical testing.

It is great to see the growing momentum of all the new alternative ingredients being produced at scale, such as Veramaris' algal oil, more celebrities becoming aware of the problem of wild catch in feeds, and the issue being highlighted in documentaries and at the United Nations. Take advantage of the free [F3 meeting videos](#), and stay tuned for the F3 Challenge winner announcement on March 7th, and what we have in store for the next contest.

Happy New Year!



Learn more at  
[F3Challenge.org](#)

*By promoting innovative alternatives to wild-caught fish and krill, the F3 initiative supports the aquaculture industry in meeting the food security needs of our growing world population while safeguarding our oceans and wild fish stock for future generations.*

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