

Making a splash

A new wave of marine ingredients

While the marine environment remains a relatively untapped resource of functional ingredients, their applications are wide-ranging with diverse bioactive properties. We take a dive into this emerging sector to find out more.

Winter months inevitably mean shorter days and longer nights. For many, this will mean a lack of direct sunlight and, in turn, depleting levels of vitamin D in the body.

With some reports claiming that vitamin D deficiency can make you more susceptible to catching Covid-19, it is no surprise consumers are demanding healthier, more nutritious food sources.

Cue: marine ingredients.

Due to its phenomenal biodiversity, the marine environment is rich in bioactive ingredients that contain vitamin D, as well as a whole host of other nutrients. These ingredients are derived from sources such as marine plants, microorganisms and sponges, to name a few.

"The nutrients found in marine ingredients are passed on to animals and fish, which then pass them on to humans," Petter Johannessen, director general of IFFO, The Marine Ingredients Organisation, told *FoodBev*.

The marine environment is rich in bioactive ingredients that contain a whole host of vitamins and nutrients

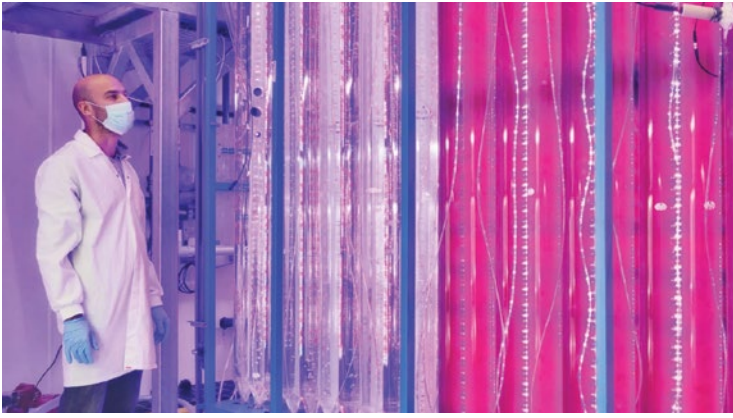
"Those nutrients provide benefits to the consumer through farmed products. An obvious example is the long-chain omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), but there are many others including selenium, zinc, taurine, vitamin B12 and vitamin D," Johannessen continued.

Fish oils, for example, claim to have a vast array of functional benefits, including heart health, stroke prevention, eye health, brain health and even claims that they help to reduce depression and anxiety.

"Due to Covid-19, an awareness of the health benefits of fish oils has increased," said Vincent van Dijk, supervisor marketing and NPD at Bioriginal, which produces marine oils that are sustainably sourced from fisheries and come in algal, fish and krill formats.

"Several studies have been performed with fish oil and protection against viruses, with beneficial results," van Dijk continued.





The rise of algae

While ingredients such as seaweed, kelp, phytoplankton and krill are gaining recognition, there's one ingredient that's currently taking centre stage: Algae.

"There are thousands of untapped microalgae species that open a unique opportunity to develop new, science-backed applications for human use. Their highly diverse characteristics grant the microalgae industry a very promising future in a broad number of sectors," Eyal Shalmon, CEO of Israeli-based startup Yemoja, commented.

"There is growing consumer demand for natural products and microalgae demonstrates a very high bioavailability in comparison to other sources," Shalmon continued.

"From a sustainability perspective, the cultivation of microalgae requires minimal natural resources. Its highly nutritional profile means it can potentially replace other plant-based nutritional sources that might be in shortage in the future."

By utilising a unique high-precision fast-track photobioreactor, the team at Yemoja has created a next-generation platform for cultivating customised, pharmaceutical-grade microalgae on demand.

Yemoja opened the doors of its new plant, dedicated to the production of high-value microalgae back in June 2020.

"We built a 'green' factory in which we can create and maintain the ultimate conditions for any known microalgae species, yet with zero dependence on external environment and weather," explained Erez Ashkenazi, COO and co-founder of Yemoja.

"Our indoor system generates exceptional yields with proven reproducibility on a very small plot of land and using minimal resources."

Omya Consumer Goods
[omya.com](https://www.omya.com)

Meet us online at
FiE Connect (Nov 23rd - Dec 4th)



Omyaforte™

Pure. Healthy. Easy.

The new functionalized calcium source Omyaforte™ 100 for fortification and food supplementation provides

- Excellent bioavailability
- High content of elemental calcium
- Ease of use

info.food@omya.com



THINKING OF TOMORROW

Making a splash

A new wave of marine ingredients



Elsewhere in the marine ingredients space, Unilever has teamed up with biotech start-up Algenuity in a project that aims to uncover the huge potential of microalgae and, therefore, create innovative future foods for Unilever's plant-based portfolio.

"Algenuity will provide the *Chlorella* ingredients – an algae – for formulation and product development by the R&D team in our Foods & Refreshment division," said Robbert de Vreede, EVP of global food at Unilever.

"This means we can continue our ambition of making it easier for people to eat plant-based foods that are good for both the consumers and the planet, while tasting great at the same time," he added.

Chlorella vulgaris contains a number of nutrients, including antioxidants, vitamins, minerals (iron) and fatty acids.

"A key challenge for incorporating *Chlorella vulgaris* into food products is that it has a high chlorophyll content, lending it a particularly bitter taste and smell and strong green colour," de Vreede said.

"Algenuity overcame this challenge by significantly reducing the chlorophyll content (removing the bitter taste) while retaining the microalgae's natural nutrients."

Future applications

Johannessen at IFFO cites that the world's population will reach 8.1 billion in 2025, emphasising the importance of creating robust and adaptable solutions to feed people sustainably.

"According to scientists, and as underlined by the UN FAO, getting more food from the sea seems increasingly sensible: the dietary profile and carbon footprint of seafood is better than livestock production," he said.

"By 2030, it is expected that 62% of all seafood produced for human consumption will come from aquaculture."

One such growing application for marine ingredients is recognised by van Dijk at Bioriginal: "We already see a movement of an increasing number of fish oil supplements moving into sports nutrition."

Shalmon at Yemoja also mirrors this growing trend, citing the numerous applications for microalgae: "Due to its high bioavailability, most of the use is for food and food supplements, and we will see more interest coming from the baby food, sport nutrition, pet food and pharma sectors."

Meanwhile, Andrew Spicer, CEO of Algenuity, agreed, adding that: "DHA (traditionally sourced from fish oils) from algae continues to grow as a trend for human nutraceuticals, animal food and human food products including infant formula and sports nutrition."

"The future looks extremely bright, even colourful! With increased consumer awareness and growing interest in ingredients that are good for you and the environment, the market for marine nutritional ingredients is positioned to grow strongly," Spicer concluded. ●



Algenuity



Let's share
our vision
of **nutrition**

Nutrition is a key-word for ARMOR PROTEINES. Since years, we have developed a wide range of products dedicated to nutrition.

- **Know-how of a worldwide French group, SAVENCIA**
- **Dairy ingredients specialties adapted to your requirement**
- **Expertise at your service to develop your nutrition innovations**

That's what we want to share with you!

armor-proteines.com

