

Newsletter

Issue 6, February 2020



ENHANCE MICROALGAE

High-added value industrial
opportunities for microalgae in the
Atlantic Area





ENHANCE MICROALGAE

Microalgae Applications!

ANFACO-CECOPESCA: Processing microalgal products for bivalve aquaculture

The rearing of bivalves in hatcheries demands a constant, high and reliable supply of microalgae as feed. For this purpose, hatcheries usually rely on their own-in-house microalgal culture, which according to some authors accounts for up to 50 % of operational costs, since dedicated facilities, equipment and staff are required. Hence, the development of alternative diets to replace live microalgae as bivalve feed has been pursued for decades, but this goal has been only partially achieved. Solutions based on processed microalgae biomass (refrigerated, frozen or freeze-dried) and microcapsules have been tested so far, with limited success.

Besides having the adequate nutritional composition, a bivalve diet must meet the following requirements:

- Particle integrity must be maintained throughout storage and use, in order to prevent the leakage of intracellular content and thus nutrient loss.
- When resuspended in water, particles must disperse, since bivalves, particularly small larvae and post-larvae, cannot ingest large clumps of particles.

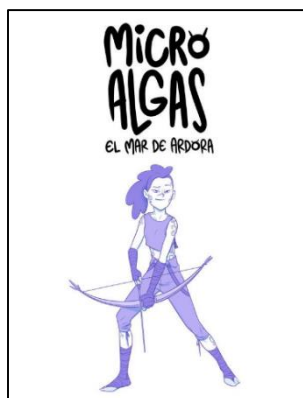
Whereas different microencapsulated feeds have been tested in laboratory or pilot conditions, they are still yet to be adopted for large scale use in bivalve hatcheries. In contrast, a range of processed microalgae products -refrigerated, frozen or freeze-dried-for aquaculture is available on the market, some of which are suitable for bivalve rearing. Optimal microalgal diets for bivalves must include diatoms of the appropriate

size, plus other taxonomic including protein and long-chain PUFAs for growth, survival or gonad maturation in the case of survival or gonad maturation in the case of broodstock. Nevertheless, in practice a narrow variety of species suitable as bivalve diets are cultivated by different companies throughout the world: *Nannochloropsis* sp., *Tetraselmis* sp., *Isochrysis* sp., *Pavlova* sp., *Thalassiosira pseudonana*, *Conticriba weissfloggi* or *Phaeodactylum tricornutum*.



[ANFACO-CECOPESCA](#) (EnhanceMicroAlgae Project Coordinator), is working to extend the range of microalgae species available as processed products for bivalve rearing. They produced freeze-dried, spray-dried and refrigerated *Chaetoceros calcitrans* and *Rhodomonas lens* and tested these products as part of diets for Mediterranean mussel (*Mytilus galloprovincialis*) larvae, combining 50% of live microalgae + 50% of processed microalgae. Their preliminary results showed a good performance of larvae cultures fed with 50% spray-dried or refrigerated microalgae, with larval growth rates only slightly lower than control cultures fed with 100% fresh microalgae.

More work is being done to confirm these first results and to determine the shelf-life of these microalgal products, in order to guarantee their nutritional value for bivalve rearing.



Xulia Pisón, the author and illustrator of the **EnhanceMicroAlgae [comic book](#)** is working on a 2nd part that will expand the adventures of microalgae in their fight against climate change.

Stay tuned!



Publications by EnhanceMicroAlgae

The Nagoya Protocol and its Implications on the EU Atlantic Area Countries has just been published in [Journal of Marine Science and Engineering](#). The Nagoya Protocol, determines the access to genetic resources and fair and equitable sharing of benefits arising from their utilisation. In this work, researchers from the EnhanceMicroAlgae project review and provide clarity on the existing legislation under the Nagoya Protocol, and propose a decision framework that helps users of genetic resources within the microalgae sector to comply with the legislation of the Nagoya Protocol at the EU Atlantic area level.

[Get a copy of the publication here!](#)

Stakeholders Database

The **EMA database of stakeholders** is an easily accessible, visual and open access database bringing together all the European Atlantic Area players working in the microalgae sector.

Visit our Database



The database, which includes an interactive map, facilitates the access to updated information and cooperation between companies and public institutions of the whole sector, and is part of EMA's [Work Package 4](#), led by [Université de La Rochelle](#).



EMA Virtual Marketplace

The **EMA virtual marketplace** is already running! A platform for the exchange of services and interests, to boost business development of the microalgae sector in the Atlantic Area through the exchange of ideas, capacities, and interests.

Visit our MarketPlace



You can use the MarketPlace to find offers and requests about technology, biomass, food & feed, cosmetics & pharma, and more. The marketplace is part of EMA's [Work Package 8](#), led by [ANFACO-CECOPESCA](#).



ENHANCE MICROALGAE

EnhanceMicroAlgae Conference: An event not to be missed.

Enhancing microalgae potential: From microalgal strains to products

June 17-18, 2020

The University of Manchester,
Manchester, UK



The University of Manchester

The conference will bring together academics and industrialists to promote knowledge transfer and discussion of research and industrial developments within the microalgae sector, as well as disseminate the scope and outputs of the project partners via talks and poster sessions.

Visit [this link](#) for more details and information regarding the call for abstracts and registration process.



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Upcoming Conferences & workshops

A calendar of courses and conferences of interest to the microalgae community is now available in the [EnhanceMicroalgae](#) website.

- [EABA Workshop Seaweed Cultivation](#) | 25-26 March, 2020 | Nantes, France
- [7th Conference of the International Society for Applied Phycology \(ISAP\)](#) | 19-24 April, 2020 | Makuhari Messe, Chiba, Japan
- [28th European Biomass Conference & Exhibition – Transition to a Bioeconomy](#) | 27-30 April, 2020 | Marseille, France
- [10th European Algae Industry Summit](#) | 29-30 April, 2020 | Reykjavik, Iceland
- [11th European Workshop on the Biology of Cyanobacteria](#) | 31 May - 4 June, 2020 | Porto, Portugal
- [Microalgae and Microtechnologies Workshop](#) | 31 May - 4 June, 2020 | Queen Margaret University Campus, Edinburgh, UK
- [10th International Conference on Algal Biomass, Biofuels and Bioproducts](#) | 14-17 June, 2020 | Pittsburgh, USA
- [Enhancing Microalgae Potential – From microalgal strains to products](#) | 17 -18 June, 2020 | The University of Manchester, Manchester, UK
- [2nd Seaweed for Health Conference](#) | 21-24 June 2020 | Galicia, Spain
- [International Conference on Algal Biotechnology](#) | 22-23 June, 2020 | Venice, Italy
- [3rd International Conference for Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability](#) | 20 -23 September, 2020 | Rive del Garda Congress Centre, near Lake Garda, Italy
- [14th World Congress on Biofuels and Bioenergy](#) | 21-22 September 2020 | Rome, Italy
- [AlgaEurope 2020](#) | 1 - 3 December, 2020 | Rome, Italy

Sign-up to this Newsletter on the [EMA website](#), and remember to connect with us on social media to keep track of the latest project updates:

