

Project partners:

1. A4F, Algafuel, SA (A4F)
2. Mikrobiologicky Ustav AV CR V.V.I (IMIC)
3. Forfarmers Corporate Services BV (FF)
4. Instituto de Biologia Experimental e Tecnológica (IBET)
5. International Flavors and Fragrances IFF (Nederland) BV (IFF)
6. Laboratorio Nacional de Energia e Geologia I.P. (LNEG)
7. Phycom BV (PHY)
8. Upfield Research and Development B.V. (UPF)

MULTI-STR3AM

A sustainable multi-strain, multi-method, multi-product microalgae biorefinery integrating industrial side streams to create high-value products for food, feed and fragrance

BBI-2019-SO1-D2 - Produce components for various materials, including for food and feed, from microalgae

Collaborative project

Start date of the project: 01/05/2020

Duration: 60 months

Deliverable 6.16

Press Release 4

WP	6	Communication and dissemination
Task	6.3	Production and dissemination of a communication materials package (M1-M48)

Dissemination level ¹	PU	Due delivery date	30/04/2024
Nature ²	DEC	Actual delivery date	30/04/2024

Lead beneficiary	A4F
Contributing beneficiaries	-

¹ Dissemination level: **PU** = Public, **CO** = Confidential, only for members of the consortium (including the BBI), **CI** = Classified, information as referred to in Commission Decision 2001/844/EC.

² Nature of the deliverable: **R**: Document, report (excluding the periodic and final reports), **DEM**: Demonstrator, pilot, prototype, plan designs, **DEC**: Websites, patents filing, press & media actions, videos, etc., **OTHER**: Software, technical diagram, etc.

WP 6:	A4F	Author
	A4F	Approval by WP leader
	A4F	Approval by coordinator

Document Version	Date	Partner	Comments ³
V0	17/04/2024	<i>Mario Branco/ A4F</i>	Creation
V1	22/04/2024	<i>Mariana Doria/ A4F</i>	Modification
V2	29/04/2024	<i>Cristina Matos/ A4F</i>	Final version for evaluation
V3	30/04/2024	<i>Mariana Doria/ A4F</i>	Final

³ Creation, modification, final version for evaluation, revised version following evaluation, final

Deliverable abstract

This delivery corresponds to the annual press release comprising achievements in the project during year 4 (May 2023 to April 2024).

Linked to task 6.3, “Production and dissemination of a communication materials package”, this delivery aims to inform the public and all interested stakeholders about the ongoing work developed by MULTI-STR3AM consortium.

A press release consists of newsworthy information to the press or journalists. For this press release, the MULTI-STR3AM consortium chose to communicate the ongoing tests of biorefinery outputs (fractions) by the end users “MULTI-STR3AM microalgae biorefinery project overcomes food, feed and fragrance demanding industry tests”.

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1 Objective of the press release 4

This annual press release aims to communicate the challenges and scientific and technological achievements in the project during year 4, from May 2023 to April 2024.

The press release 4 is entitled “MULTI-STR3AM microalgae biorefinery project overcomes food, feed and fragrance demanding industry tests”, being published on 30th April 2024.

This press release highlights the process improvement and scale-up of the MULTI-STR3AM biorefinery, adding to it the ongoing testing that the end-users have been developing within their facilities of the microalgae fractions received.

This communication piece was shared with all partners and their communication departments, disclosed at the project website and partners social networks.

2 Press release content

MULTI-STR3AM microalgae biorefinery project overcomes food, feed and fragrance demanding industry tests

The MULTI-STR3AM innovative concept, based on the use of a biorefinery cascade approach to maximize the value of all microalgae biomass fractions (ingredients), has been tested by the end-users in food, feed, and fragrance industries with great success.

Lisbon, April 30th, 2024

Feedback from major industry partners on the potential of the MULTI-STR3AM results is extremely positive. Following an intense 4-year work period, the project team is proud of its R&D achievements, considering that its biorefinery in Portugal has already produced 31 microalgae samples for testing in food, feed, and fragrance applications, from Spirulina, Dunaliella, Nannochloropsis, and Chlorella.

Beside the biorefinery development, the project has already achieved other important results, mainly the integration of industrial side streams – such as nitrogen-rich effluent and industrial brine effluent – as feedstock for microalgae cultivation (trials made by A4F-Algae for Future and Phycom project partners).

Prototypes scale-up

During the final year of the project, which ends April 2025, partners will expand their trials, scale up their prototypes for further testing and evaluate the formulation of products.

To boost microalgae productivity, optimise biorefining processes and support industrial partners, the project also involves IMIC, iBET and LNEG research institutes.

“As the biorefinery expands, process optimisation is an ongoing process to reach the best conditions for microalgae fractioning and purification,” says Cristina Matos, head of biorefinery at A4F-Algae for Future in Portugal.

Multiple ingredients & diverse applications

The industry is looking for new sustainable sources of protein that do not have animal origin. “The vegan food and cosmetics market is, in fact, eager for solutions, as the current vegan food products available on the market have low or no protein content,” explains Mariana Doria, MULTI-STR3AM project coordinator.

“In the case of phycocyanin – adds Mariana – the intense blue colour, of biological origin, is already used as food pigment, and it can replace synthetic pigments in the cosmetics and other consumer care products. This may avoid allergic reactions when products have skin contact for instance, and has the advantage of biodegradability when its disposal.”

Another example of an ingredient produced by Multi-Str3am’s biorefinery, carotenoids with high β -carotene content – a precursor to vitamin A in the human body. It is known for its vibrant orange colour and its health benefits. “ β -carotene can also be produced by chemical synthesis and industrial biotechnology, and microalgae can be a competitive and sustainable source for the EU market. Synthetic β -carotene production is limited to its all-trans isomer, while the microalgae production of β -carotene has the advantage of being the unique source of 9-cis- β -carotene, which as a high bioactivity,” explains Cristina Matos. “This ingredient is a common food colouring, present also in supplements, skincare, and animal feed. As an antioxidant, it is associated eye and skin health, and some studies also suggest benefits in the immune system,” – complements Cristina.

The Bio-based Industries Joint Undertaking’s project MULTI-STR3AM addresses the challenges of scale of microalgae-based products by integrating sustainable multi-strain, multi-method and multi-product microalgae biorefinery in industrial side streams. This EU-funded project is designed to help close the gap between research and industrial scale on microalgae cultivation.

The MULTI-STR3AM project is coordinated by A4F – Algae for Future (PT), and brings together the companies ForFarmers (NL), International Flavors & Fragrances (IFF, NL), Phycom (NL), UpField (NL), and the R&D institutions IMIC CAS - Centre Algatech (CZ), Instituto de Biologia Experimental e Tecnológica (iBET, PT), and Laboratório Nacional de Energia e Geologia (LNEG, PT).

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3 Final version



Horizon 2020
European Union Funding
for Research & Innovation



Press Release

MULTI-STR3AM microalgae biorefinery project overcomes food, feed, and fragrance demanding industry tests

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