

Project partners:

1. A4F, Algafuel, SA (A4F)
2. Mikrobiologický Ústav AV ČR V.V.I (IMIC)
3. Forfarmers Corporate Services BV (FF)
4. Instituto de Biología Experimental e Tecnológica (IBET)
5. International Flavors and Fragrances IFF (Nederland) BV (IFF)
6. Laboratorio Nacional de Energía e Geología 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: 48 months

Deliverable 6.5

Report on participation in knowledge-sharing events for year 1

WP	6	Communication and dissemination
Task	6.4	Organisation of and participation in knowledge sharing events (M1-M48)

Dissemination level ¹	PU	Due delivery date	30/04/2021
Nature ²	R	Actual delivery date	30/04/2021

Lead beneficiary	A4F
Contributing beneficiaries	IMIC, FF, IBET, IFF NL, LNEG, PHY, UpF

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

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V3	29/04/2021	A4F	Final version for evaluation
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³ Creation, modification, final version for evaluation, revised version following evaluation, final

Deliverable abstract

This deliverable refers to all knowledge-sharing events, such as networking events, industry salons and conferences, for year 1, to disseminate results and gain relevant knowledge.

This deliverable is part of Task 6.4, on the “Organisation of and participation in knowledge sharing events”. The goal is twofold: to promote the project results and contribute to the awareness of potential of microalgae as a source of food and feed ingredients as well as high-value compounds.

The first year (M1-M12) was defined by the dissemination plan as an initial awareness phase. The main objective was to achieve initial visibility, mostly through communication activities.

Although the pandemic restricted any face-to-face meeting and events, the consortium was able to take part in 26 dissemination and communication activities.

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1 Dissemination and Communication Activities

The MULTI-STR3AM consortium is concerned to give fair publicity to the project and its innovative applications, in favour of the dissemination of scientific and technological knowledge and communicate with policy makers and consumers about characteristics and advantages of these new products.

The previous deliveries on Dissemination Plan (D6.1) and Communication Plan (D6.2) details the overall goals of these activities, important stakeholders and key messages to address, besides the performance indicators (KPIs).

1.1 Objectives of the first year

The first year (M1-M12) was defined by the dissemination plan as an initial awareness phase. The main objective is to achieve initial visibility, mostly through communication activities.

In terms of dissemination, the project partners will benefit from the awareness raised through communication activities to identify any low hanging fruits that can later benefit dissemination efforts.

2 Activities carried out for the period M1-M12 (May 2020-April 2021)

In total, 26 activities were identified by the MULTI-STR3AM consortium, all online basis given the current pandemic situation. In this section all these activities will be briefly described according to the different means of dissemination.

Number of persons reached was estimated per each activity, and classified among scientific community, industry representatives, general public, policy makers, media, investors and customers.

In the case of scientific papers or presentations, although they are highly incentivized by the consortium, given the early stage of the project, this was not the focus in first this year. Besides, any technological information will need to be evaluated for IPR protection previous to any disclosure.

2.1 Non-scientific and non-peer-reviewed publication (popularised publication)

Non-scientific publications target mostly the general public, industry and policy makers. For media coverage, articles with a general description of the project have been prepared for publications in outlets such as specialised blogs, national and regional newspapers.

2.1.1 Published article on MULTI-STR3AM project at the journal “Treboňský Svět” (CZ)



VÝZKUM V CENTRU ALGATECH V ROCE 2020

Třeboňské pracoviště Mikrobiologického ústavu – Centrum Algtech na Opatovickém mlýně provádělo na jaře a na podzim 2020 stovky testů na covid-19, což zaměstnalo řadu jeho pracovníků. Nicméně ve stínu pandemických událostí probíhal na mlýně čilý základní i aplikovaný výzkum.

Tým profesora Komendy zahájil řešení projektu PhotoRedesign, na který získal jeden z největších evropských grantů, který kdy byl udělen jednomu výzkumnému týmu v ČR – 2,5 milionu EUR. Pomocí metod takzvané syntetické biologie se hledají způsoby, jak zvýšit účinnost přeměny slunečního záření do biomasy. Získané poznatky by v budoucnu mohly vést k vyšším výnosům plodin, a to i v podmínkách změny klimatu. Studiu bakterií, které rovněž využívají světlo jako zdroj energie (fototrofie), se věnuje i projekt

GAČR EXPRO. Cílem bádání je osvětlit způsob, jakým se fotosyntéza geneticky kóduje a předává i mezi poměrně vzdálenými skupinami organismů.

Centrum Algtech bylo v posledních letech úspěšné v řešení projektů přeshraniční spolupráce Interreg mezi Rakouskem a ČR. Jako modelový příklad úspěšné přeshraniční spolupráce byl dolnorakouskou vládou vybrán projekt REEgain zaměřený na vývoj technologií získání cenných prvků vzácných zemí z odpadů pomocí bakterií, sinic a řas. Novým projektem je aplikovaný výzkum využití specifických mikrořas a vířníků při odchovu plůdku candáta – Algae4Fish. Určitý profil mastných kyselin obsažený v řasové biomase ovlivní prostřednictvím potravního řetězce vývoj mozku candátích larev a zajistí vyšší procento přežití této cenné ryby.

Novým počinem je i aplikovaný vý-

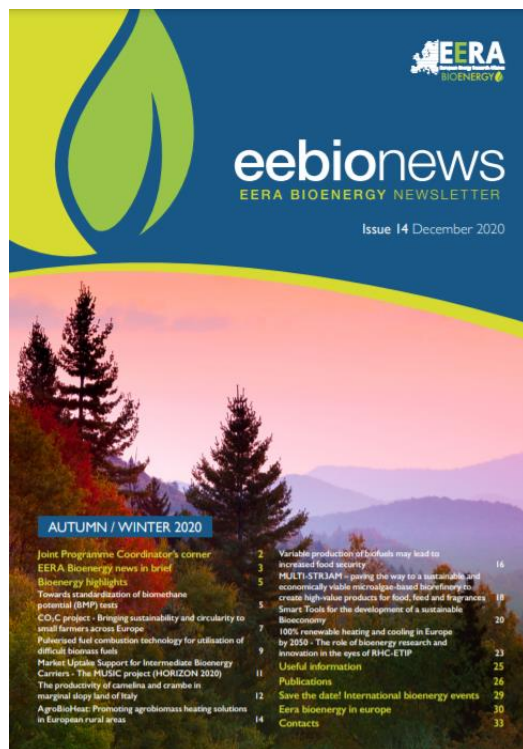
zkum využití mikrořas v potravinářství a krmivářství (projekt MultiStr3am) financovaný z evropského programu H2020, na kterém se podílejí i významné evropské firmy. Algtech má na starosti výběr vhodných kmenů mikrořas a jejich šlechtění.

Centrum Algtech je i jedním z účastníků Národního centra kompetence pro biorafinaci (program TACR NCK) a je velmi příjemné, že se u společného projektu setkali kolegové z Mikrobiologického (Opatovický mlýn) a Botanického ústavu (Dukelská). Společná práce se týkala hledání vhodných druhů mikrořas bohatých na karotenoidy a mastné kyseliny, především pak pro produkci fukoxantinu, který začíná být široce celosvětově poptáván jako doplněk stravy. Komerčním partnerem je česká firma Algamo.

Richard Lhotský

Partner	Date	Online/Offline	Means of verification, References & Links					Funding Amount Used
IMIC	December 2020	Online	https://www.mesto-trebon.cz/uploads/archiv_ts/TS_2020/2020-12.pdf					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached			1700		50			1750

2.1.2 Article “MULTI-STR3AM – Paving the way to a sustainable and economically viable microalgae-based” published by EERA Bioenergy Newsletter (European Energy Research Alliance).



Partner	Date	Online/Offline	Means of verification, References & Links					Funding Amount Used
LNEG	23 December 2020	Online	http://www.eera-bioenergy.eu/wp-content/uploads/pdf/EERABioenergyNewsletterIssue14.pdf					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	500	100		50	50			700

2.1.3 Citation about the MULTI-STR3AM project at the ForFarmers Annual Report.



Annual Report 2020



Feed Resources

A very large proportion of the CO₂ emissions associated with the production and delivery of feed to a farmer comes from the cultivation, harvesting, processing, storage and transport of feed materials. There are environmental and social risks associated to our supply chain which we aim to reduce. As such a number of new KPIs have been added to support the Feed Resources theme.

We are also a partner in SUSINCHAIN (insect protein) and MultiStr3am (algae research) projects. Other single cell technologies are being developed which include carbon capture as part of the process. These potential projects are included in ForFarmers Next level Innovation agenda. They are all showing potential but in some cases require changes to legislation. In addition, large scale production is required to ensure they are economically viable.

Partner	Date	Online/ Offline	Means of verification, References & Links	Funding Amount Used
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FF	12 April 2021	Online	https://forfarmers-annualreport2020.eu/wp-content/uploads/2021/03/AR-ForFarmers-NV-2020-UK.pdf#page=44	0.00
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	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	100	600		50	50	50	100	950

2.1.4 Interview: “ForFarmers innovation lead: “If you don’t take research leaps, you may not get the breakthroughs” @ Feed Navigator.

ForFarmers innovation lead: ‘If you don’t take research leaps, you may not get the breakthroughs’

By Jane Byrne

23-Apr-2021 - Last updated on 23-Apr-2021 at 13:30 GMT



RELATED TAGS: Precision feeding, data modelling, swine nutrition, methane emissions

Precision feeding in swine, and methane emissions mitigation strategies in ruminants are just two of around 50 research projects occupying the experts based at the ForFarmers Nutrition Innovation Center (NIC).

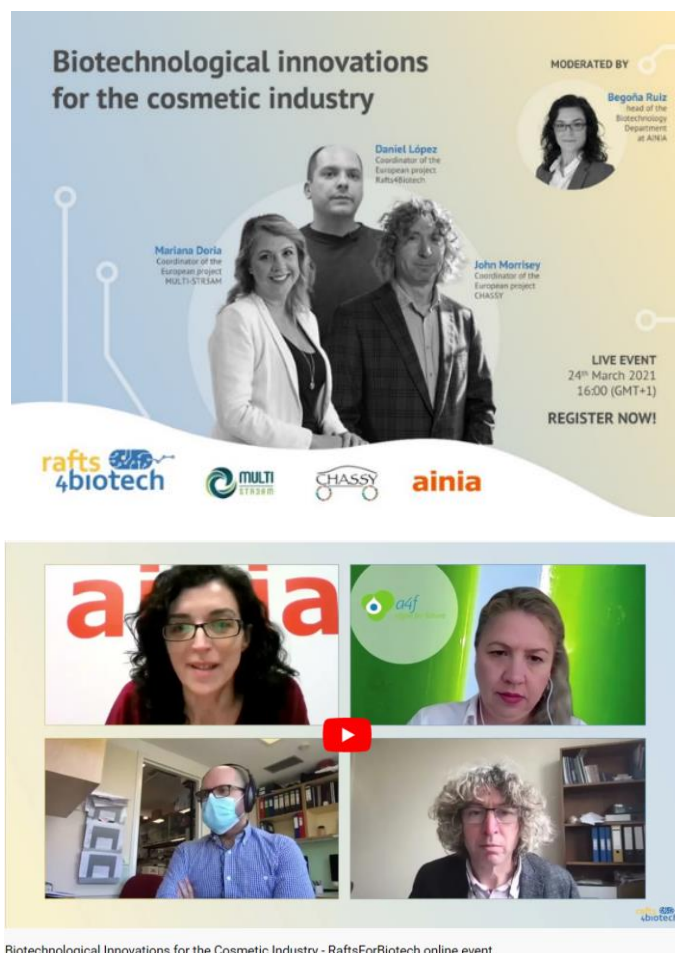
The team is also examining the use of alternative protein sources in animal feed through other partnerships - from insects – SusinChain - to algae – MultiStr3am. “A lot is under development in the field of innovation and sustainability.”

Partner	Date	Online/Offline	Means of verification, References & Links					Funding Amount Used
FF	23 April 2021	Online	https://www.feednavigator.com/Article/2021/04/23/ForFarmers-on-research-and-development-innovation-targets					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	100	1000		50	100	50	200	1500

2.2 Participation in activities organised jointly with other EU project(s)

2.2.1 Presentation of the MULTI-STR3AM project at the webinar "Biotechnological innovations for cosmetic industry".

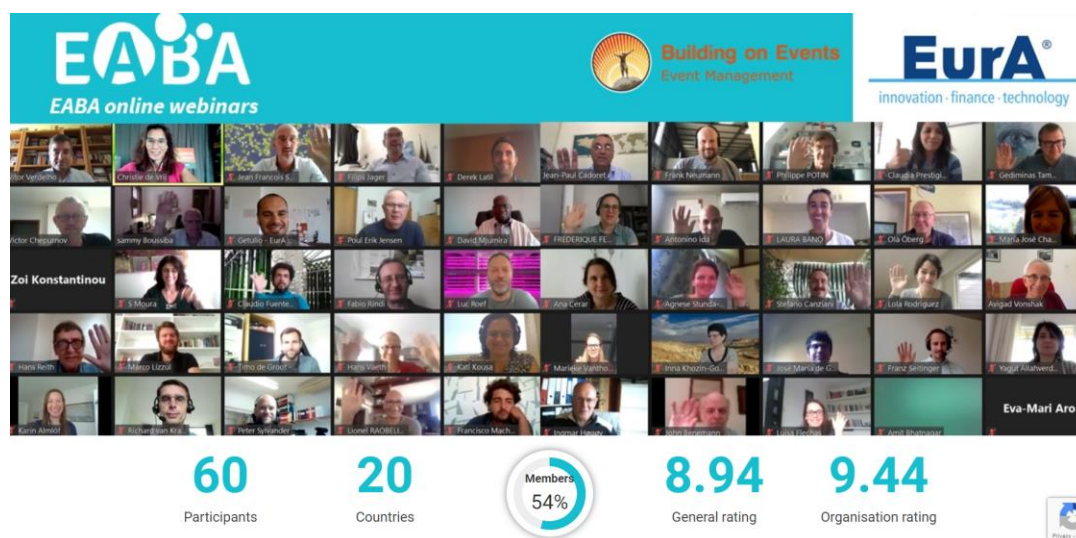
Organized by Scienseed, the webinar counted with presentations of two other EU projects: Rafts4Biotech (Daniel López) and CHASSY (John Morrissey).



Partner	Date	Online/Offline	Means of verification, References & Links					Funding Amount Used
A4F	24 March 2021	Online	https://www.youtube.com/watch?app=desktop&v=7eR6KxYl3tU					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	150	150	50	10	10	10	50	430

2.3 Participation to a Conference

2.3.1 Presentation of the MULTI-STR3AM project at EABA Flash Webinar (European Algae Biomass Association)



11:00 Presentations from reference projects (10 min + 5 Q&A)

GENIALG – **Philippe Potin** – CNRS / Station Biologique Roscoff, France
 SpiralG – **Monique Ras** – BSCM, France
 ABACUS – **Jean-François Sassi** – CEA, France
 MAGNIFICENT – **Hans Reith** – Wageningen University (WUR), The Netherlands
 SABANA – **Gabriel Acien** – Univ. Almeria, Spain
 EnhanceMicroalgae – **María José Chapela Garrido** – ANFACO, Spain
 MultiStr3am – **Tiago Guerra** – A4F, Portugal

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
A4F	17 July 2020	Online	https://algaeworkshops.org/flash-webinar-eu-programmes-and-opportunities-for-algae-biomass/					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	100	150		50	50	20	50	420

2.3.2 Presentation of MULTI-STR3AM project @ EuroScience Open Forum (ESOF) 2020 – Trieste, Italy



REMOTE SPEAKER THIAGO GUERRA

BBI JU MULTI-STR3AM project

Coordinator

THE QUEST FOR ATLANTIS: DISCOVERING THE TREASURES OF BLUE BIOECONOMY

Virtual Room 3

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
A4F	3 September 2021	Online	https://www.esof.eu/en/					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	50	200	1000	50	50	50	300	1700

2.3.3 Presentation of MULTI-STR3AM project @ Planetiers Conference - Lisbon, Portugal



Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
A4F	22 October 2020	Online	https://www.youtube.com/watch?app=desktop&v=jP2bs3SV6w					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	50	70	200	10	50	50	100	530

2.4 Press release

2.4.1 Press Release announcing the “kick-off” meeting



Partner	Date	Online/Offline	Means of verification, References & Links					Funding Amount Used
A4F	14 December 2020	Online	http://multi-str3am.com/pressrelease.pdf					0.00
Persons reached	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
	100	1000	300	50	100	50	200	1800

2.4.2 Press release reporting challenges faced by MULTI-STR3AM consortium during its first year



Press Release

MULTI-STR3AM towards bioeconomy: Innovation goes on and adapts to a new reality of a world pandemic

Lisbon, April 28th, 2021

2020 has been a world challenge, and it was not different to the innovation ecosystem. The MULTI-STR3AM consortium launched an innovative project, focused on a multi-products microalgae biorefinery, while their companies had to quickly adapt to this new reality.

The project officially started on May 1st, 2020, with no risks regarding a world pandemic previously mapped. This four-year long innovation project on biotechnology relies strongly on laboratory work besides the construction of a new demo scale biorefinery.

It is known that the COVID-19 caused a downfall on the world logistics. In addition, some industries had their effort changed towards the production of equipment like mechanical ventilators, masks, and other consumables demanded by all countries facing a lack of personal protective equipment needed not only for the hospitals but to protect their population. Besides all health care demand, overnight all offices were closed and the manufacture of all equipment incorporating electronic chips was affected as the demand by laptop producers rocketed due to remote work. These are just few examples of how the pandemics caused an overall impact across industries.

Nonetheless, the MULTI-STR3AM consortium overcame all difficulties such as, the delay on the orders of new equipment needed for the partners' laboratories, biomass production and biorefinery. Also, the transport and commissioning are taking longer than planned, but everything is moving on. All face-to-face meetings moved to online platforms, and the partners laboratories and industrial facilities have reduced the number of researchers and other employees circulating on the day-by-day business. Considering that, experiments were replanned and reinforced monitoring has been implemented to decide upon mitigation actions every six-months, in order to avoid further impacts.

Still, resilience is the word and the world has shown its capacity to adapt to a sudden unforeseen reality. The MULTI-STR3AM consortium has faced the challenge and will continue to support Europe towards a more sustainable and economically viable bioeconomy.

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).

More information: www.multi-str3am.com

Coordinator contact:

Mariana Doria
A4F, Algae for Future
mariana.doria@aleafuel.pt



Bio-based Industries
Consortium



Horizon 2020
European Union Funding
for Research & Innovation

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 887227

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
A4F	28 April 2020	Online	http://multi-str3am.com/pressrelease.pdf					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	100	1000	300	50	100	50	200	1800

2.5 Social Media

2.5.1 Announcement of the MULTI-STR3AM project Kick-off meeting on A4F LinkedIn account (9600 followers)



Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
A4F	15 July 2020	Online	https://www.linkedin.com/posts/algafuel-s-a- the-multi-str3am-web-kick-off-meeting-took-activity-6692337976665534464-Hm-M					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	1000	2000	500	50	50	100	400	4100

2.5.2 Announcement of the MULTI-STR3AM project Kick-off meeting on iBET Twitter account (640 followers)



Partner	Date	Online/Offline	Means of verification, References & Links					Funding Amount Used
IBET	13 August 2020	Online	https://twitter.com/ibetportugal/status/1293835419763826689					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	400	200	200		20			820

2.5.3 Announcement of the MULTI-STR3AM project Kick-off meeting on iBET facebook account (3500 followers)



Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
IBET	13 August 2020	Online	https://www.facebook.com/iBETportugal/posts/3329894667057039					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	700	500	1000		40			2240

2.5.4 Announcement of the MULTI-STR3AM presentation @ A4F LinkedIn account (9600 followers)



Partner	Date	Online/Offline	Means of verification, References & Links					Funding Amount Used
A4F	21 April 2021	Online	https://www.linkedin.com/posts/algafuel-s-a-biotechnology-to-build-a-brighter-future-activity-6790619241646227456-wAcO					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	1000	2000	500	50	50	100	400	4100

2.6 Website

2.6.1 Presentation of MULTI-STR3AM @ IMIC website

EU H2020 - BBI JU (Bio Based Industry Joint Undertaking) about BBI JU				
Reg. N.	Duration	Project name	Total subsidy	Project description
887227	2020-2024	<p>A sustainable multi-strain, multi-method, multi-product microalgae biorefinery integrating industrial side streams to create high value products for food, feed and fragrance</p> <p>Principal Investigator: Ing. Jiří Kopecký, Ph.D., Lab. Algal Biotech Lab. Cell cycles</p>	Total from EU € 698 400	<p>MULTI-STR3AM will respond to the growing interest in and demand for sustainable products from microalgae by providing Europe with the first dedicated multi-strain, multi-process and multi-product biorefinery ('MULTIbiorefinery'), which will refine the biomass from A4F and PHY into high-quality, in-demand products: lipids including omega-3 and omega-6 fatty acids for feed and food applications; protein for feed and fragrance (microencapsulation) applications; pigments such as carotenoids and phycocyanin for food and feed applications; and low molecular weight (MW) organic compounds for fragrance applications. Comprising seven work packages, the project will cover the entire value chain, from biomass production through to the integration of individual technologies into three main processing streams together with three large end users (FF, IFF and UpF). In doing so, MULTI-STR3AM will create three new bio-based value chains, two new chemical building blocks, seven consumer products (six of which are new) and four new cross-sector connections. In parallel, the consortium will reduce the barriers and steps needed for industrial scale production by validating the concept at demonstration scale.</p> <p>OFFICIAL PRESS RELEASE</p>
   				

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
IMIC	12 January 2020	Online	https://www.alga.cz/en/c-783-eu-bbi-horizon2020-multistr3am.html					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	400	200			50			650

2.6.2 Article produced by ForFarmers on Innovation Projects relating to sustainability citing MULTI-STR3AM @ ForFarmers website



ForFarmers ▾

Investors ▾

Careers

Media ▾

Sustainability ▾

[Home](#) > [Sustainability](#) > [News](#) > Two out of five NIC projects concern sustainability

Two out of five NIC projects concern sustainability

The Nutrition Innovation Centre (NIC) is the realm of ForFarmers' innovation experts. What role do sustainability and [our sustainability strategy Going Circular](#), For the Future of Farming play in their work? We turned to Ad van Wesel, Director NIC, for these questions.

The environmental impact of feed is currently a hot topic in the public debate. How does this concern your work at the NIC?

“Several studies are related to this, for example projects aimed at methane, nitrogen and phosphorus reduction. For example, how can we alter our feeds in order to reduce the on-farm emissions, without affecting the productivity of the animals? Also: we aim to process even more by-products from the food industry in our feeds, in order to achieve circularity, and we have fermentation studies. In addition we participate in projects that are about the use of alternative sources of protein, such as insects ([SusinChain](#)) or algae ([MultiStr3am](#)). There is a lot in motion that links innovation to sustainability.”

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
FF	15 April 2020	Online	https://www.forfarmersgroup.eu/en/sustainability/news/two-out-of-five-nic-projects-concern-sustainability.aspx					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	400	1000		50	50	50	200	1750

2.6.3 Description of MULTI-STR3AM project @ iBET website

August 3, 2020

News

iBET is a partner of **MULTI-STR3AM**, an 2019 European Union's *Bio-based Industries Joint Undertaking (BBI-JU)* project that aims to develop robust **microalgae** biorefineries as a sustainable mean for the production of high-value products for food, feed and fragrance.

Microalgae have a vast **biosynthetic potential and are a rich source of lipids, protein and high-value compounds such as pigments**. However, despite their characteristics, they are underexploited as a crop. Mainly due to barriers of scale, microalgae products struggle to achieve the economies of conventional products, such as palm oil or soybean.

Engaging global actors from the industrial, academic and non-profit sectors, MULTI-STR3AM will address challenges of costs, scale and sustainability, to create a roadmap for economical viability, industrial-scale cultivation and Biorefinery process.

MULTI-STR3AM will demonstrate **7 consumer products**, including:

- lipids for edible spreads;
- protein, carbohydrates and lipids for feed ingredients for poultry, pigs and ruminants;
- protein and small organic compounds as building blocks for the fragrance industry

João Crespo (Membrane Bioprocesses Lab) is the **iBET's team leader in the project** and Teresa Crespo (Food Safety & Microbiology Lab) is a work-package leader.

The MULTI-STR3AM project is coordinated by **Algae for future (A4F)**, Portugal, and funded with a total of €9M. Alongside iBET, 7 European institutions are part of this initiative: Algae for future (Portugal), Centre Algatech (Czech Republic), For Farmers (Netherlands), International Flavours and Fragrances (Netherlands), Laboratório Nacional de Energia e Geologia (Portugal), Phycom (Netherlands) and Upfield (Netherlands).

MULTI-STR3AM project officially started on May 2020 and the Web Kick-off meeting took place on the 9th of July with all partners present. **Stay tuned for the developments of this project!**

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
iBET	3 August 2020	Online	https://www.ibet.pt/sustainable-development-of-microalgae-biorefineries/					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	300	100		50	50			500

2.6.4 Going Circular Strategy: Publication @ ForFarmers website about alternative protein, citing MULTI-STR3AM project

Our Going Circular Strategy

Our purpose within sustainability is Going Circular, For the Future of Farming. At the heart of our Going Circular strategy is our framework with its three central themes Feed resources, Feed production and Feed solutions. It also expresses the boundaries, set by society, within Going Circular acts. ForFarmers works within these boundaries and looks to improve sustainability performance within them.

How we define Going Circular



Algae as novel protein

With an increasing world population and a consequent growing demand for food, new sources of food and feed materials are urgently required. Microalgae is one of the novel proteins that has potential to help bridge that gap without concurrent pressure on land use and without increasing the use of petrochemical-based resources. Its protein content is particularly high.

However, microalgae as a resource remains underdeveloped and underexploited. This means research projects are a necessity in order to help provide a realistic, reliable alternative to existing sources.

ForFarmers is partner in the MULTI-STR3AM project which is designed to overcome the barriers mentioned above. Ultimately, the MULTI-STR3AM project aims to create a roadmap for establishing economically viable microalgae production and exploration, preserving resources and contributing to the EU's circular economy goals.

Partner	Date	Online/Offline	Means of verification, References & Links					Funding Amount Used
FF	1 September 2020	Online	https://www.forfarmersgroup.eu/en/sustainability/our-going-circular-strategy/feed-resources/alternative-protein.aspx					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	500	1000		50	50	50	300	1950

2.6.5 Announcement - according to press release

Phycom partners in MULTI-STR3AM 22-12-2020

Phycom is honoured with the approval of the MULTI-STR3AM project. The Bio-Based Industries Joint Undertaking (BBI-JU) catalyses a sustainable bio-based economy in Europe. The BBI-JU project aims for a sustainable multi-strain, multi-method, multi-product microalgae biorefinery integrating industrial side streams to create high-value products for food, feed and fragrance. As a biomass-producer, Phycom benefits greatly from participating in MULTI-STR3AM and the emergence of the MULTIBiorefinery process. It enables to increase the volume of cultivated microalgae while diversifying the sources of revenues by growing several types of complementary microalgae strains.

The project allows Phycom to expand its product portfolio and market microalgae as biomass to its current customer base, particularly for microalgae that are in high market demand (e.g. microalgae rich in omega 3 fatty acids, protein or antioxidants). The company will market its biomass mainly in Europe. On the mid-term, the project and biorefinery allow Phycom to expand the portfolio with specific microalgae extracts. These allow Phycom to broaden its market scope to health, fragrances and pharma customers to a more global level. The participation of strong and large project partners in the food, feed and fragrances industries give Phycom a unique opportunity to develop business opportunities, which are close to end-users expectations and secure market access for the developed products.

Altogether this project and the private investments of the project partners support the development of bio-based industries by providing the necessary means to scale up production and processing of micro-algae.

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
PHY	18 December 2020	Online	https://phycom.eu/about-phycom/announcements/phycom-partners-in-multi-str3am/					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	200	500	100	50	50	50	100	1050

2.6.6 MULTI-STR3AM – Project and partners description @ Phycom website

MULTI-STR3AM – Project and partners Towards industrial-scale microalgae cultivation in Europe.

The project


Current agricultural and manufacturing practices are causing irreparable environmental damage. Although microalgae are a promising solution to the problem, they are underexploited as a crop. This is because microalgae products struggle to achieve the same economies of scale as conventional products. The EU-funded MULTI-STR3AM project aims to provide valuable microalgal products for large end-users in the food, feed and fragrance sectors by reducing costs, increasing scale and boosting sustainability. Its products will include lipids for edible spreads, protein, carbohydrates and lipid feed ingredients for poultry, pigs and ruminants, and protein and small organic compounds as building blocks for the fragrance industry. The project paves the way for sustainable industrial-scale microalgae cultivation in Europe.



Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
PHY	18 December 2020	Online	https://phycom.eu/multi-str3am/					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	200	500	100	50	50	50	100	1050

2.7 Other

2.7.1 Internal briefing about MULTI-STR3AM project




Next step in the use of algae as a resource for feed

Proteins are an essential part of a livestock's ration. Together with scientists and peers, ForFarmers is already continuously working on the development of new, sustainable sources of feed. This also counts for protein: algae as novel protein in this case in particular. The protein content of algae is particularly high, which makes them a favourable alternative protein source for animal feeds. Incorporating more (micro) algae or other alternative proteins in the feeds is an important step to reduce our dependence on protein sources, such as soy. In order to help provide a realistic, reliable alternative to the existing sources, research projects are a necessity. The **new MULTI-STR3AM project, of which ForFarmers is a partner**, is a great example of this.

Multi-Str3am project is now live
As ForFarmers, we have been working behind the scenes for a while already on the MULTI-STR3AM project, a major research project looking into the use of micro-algae in animal feed. The ultimate goal of this four-year EU project is to create a roadmap for the production and exploitation of micro-algae. Both economic viability and contributions to the EU's circular economy objectives are important preconditions. MULTI-STR3AM focuses on the cultivation of different types of micro-algae and on splitting them into different feed materials through bio-refining. Several parts of the algae are very interesting to ForFarmers.

ForFarmers is looking forward to contributing to this project in the coming years. It fits seamlessly into the Going Circular approach, where we aim to maximise the use of non-human edible feed materials.

Source: Corporate Affairs/NIC



Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
FF	6 January 2020	Online	Publication on ForFarmers Intranet					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached		200						200

2.7.2 Presentation of MULTI-STR3AM project

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
IFF	12 February 2020	Online	Internal communication IFF / MS teams					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached		30						30

2.7.3 Internal presentation of MULTI-STR3AM project.

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
IFF	20 June 2020	Online	Internal communication IFF /Skype					
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached		20						20

2.7.4 Internal presentation of MULTI-STR3AM project.

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
IFF	23 November 2020	Online	Internal communication IFF / MS teams					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached		20						20

2.7.5 Internal briefing about the MULTI-STR3AM project.

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
IFF	14 December 2020	Online	Publication on IFF Intranet					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached		250						250

2.7.6 Update on last EU projects granted on bioenergy (EERA Bioenergy Steering Committee meeting)

Partner	Date	Online/ Offline	Means of verification, References & Links					Funding Amount Used
LNEG	15 December 2020	Online	Confidential meeting minutes. Available only to members.					0.00
	Scientific Community	Industry	General Public	Policy Makers	Media	Investors	Customers	Total
Persons reached	50							50

3 Performance indicators of the first year (May 2020-April 2021)

The consortium has developed a number of metrics to evaluate the performance of dissemination activities. These are used to monitor the performance of these activities and ensure that the consortium remains accountable for the impact reached during the project. As a minimum, the consortium aims to reach a good performance on all indicators but thrive to get excellent performance. Such metrics are listed in the table below, together with the numbers of the first year:

Actions	Metric	Performance by M48				M12
		Excellent	Good	Moderate	Poor	
Journal articles (peer-reviewed)	Number of publications	>11	Between 8 and 10	Between 3 and 7	<3	0
Conference attendance	Number of conferences	>15	Between 10 and 15	Between 7 and 10	<7	4
Conference presentations	Number of presentations	>11	Between 8 and 10	Between 4 and 7	<4	3
Webinars or events organised	Number of webinars and events organised	>6	Between 4 and 6	3	<3	0
	Number of webinars or events participation	>11	Between 8 and 10	Between 4 and 7	<4	10
Project clustering activities (coordination with other R&D project activities to establish common dialogue)	Number of synergies established between R&D projects	>6	Between 3 and 5	2	<2	1
Policy briefs (in result of D1.5 and D1.7)	Number of policy proposals for the definition of microalgae-based products	>10	Between 7 and 9	6	<6	0

Also, the impact of the communication activities are being measured through indicators for each category of activity, as summarised below for the first year:

Indicator	May 2021 Expected	M12	Source and methodology
Accumulated number of press releases	2	2	All press releases will be published at the project's website.
Accumulated number of relevant events in which the consortium participates*	5	4	Communication and dissemination log.

*Considering only events where there were presentations citing the project.

4 Future phases

Other two phases were planned for the communication and dissemination strategy: Dissemination development phase (M13 – M42), and Exploitation and sustainability phase (M43 – M48). The former aims to sustain and increase visibility and engagement, by disseminating results in conferences, articles, press releases, website and other social media avenues. The latter will focus on guaranteeing the sustainability of the project 's results beyond the project duration, disseminating the final results and set the ground for exploitation of results after the project end.

Moreover, partners will organise events, such as workshops and symposia to share the expertise developed in the project with external stakeholders. The possibility of organising these workshops back-to-back or in the wider context of large sectorial events will be explored to ensure strong participation and increase impact. Visits to R&D facilities of some of the project's partners are equally foreseen, together with the hosting of events to disseminate results across a public of experts and industrial actors. All these face-to-face activities will depend on the current pandemic situation which is expected improve by 2022.

Thus, the MULTI-STR3AM consortium intends to increase its communication activities and start organizing own events to prepare the path for future innovative results acknowledgment and exploitation.



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