

## Press Release

### First year of operations of the MULTI-STR3AM biorefinery

Lisbon, April 26<sup>th</sup>, 2023

The MULTI-STR3AM project, which aims to develop a sustainable biorefinery for microalgae-based food, feed and fragrance products, has completed the first year of operations at its biorefinery in Portugal. A4F - Algae for Future, the coordinator of this ambitious project, is implementing a multi-method biorefinery that integrates different species of microalgae and industrial side streams to produce valuable ingredients. This sustainable approach to food and feed production using microalgae will help the EU industry to overcome the challenges of scalability and pricing.

#### Implementation of the MULTI-STR3AM biorefinery

The construction of the MULTI-STR3AM biorefinery contemplated the retro-fitting of an abandoned industrial site, revitalizing old installations into a sustainable biorefinery for the future. The MULTI-STR3AM biorefinery is designed with all the necessary unit operations for the use of diverse species of microalgae and generation of several high-value ingredients. By using different biomass feedstocks and integrating industrial waste streams provided by the production units, the biorefinery offers a zero-waste approach to operations. A4F is currently developing integrative processes at the site to ensure economic viability.

#### Microalgae produced fractions

During the first year of operations, the MULTI-STR3AM biorefinery produced different types of microalgae disrupted biomass fractions: carotenoid extracts (with 3.8% of carotenoids), protein extracts (with more than 85% of protein and 27% of phycocyanin), omega-3 lipids (with 14% of EPA in DW), and the protein and carbohydrate fraction (with 44% of bulk-protein and 44% of carbohydrates). These fractions have been analysed by the end-users in the food, feed and fragrance industries for their potential as final products. UpField, ForFarmers, and iFF have all found value in these fractions, validating the MULTI-STR3AM concept of using a biorefinery cascade approach to maximize the value of all biomass fractions.

*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](http://www.multi-str3am.com)

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