



## D.7.8. Newsletter #2

<MIRACLES CONFIDENTIAL>

<b>STATUS:</b>	Final
<b>DUE DATE</b>	M 12
<b>DELIVERY DATE</b>	M 16
<b>APPROVAL</b>	March 13th, 2015 by Macarena Sanz (Task and WP7 Leader) April 24th by Hans Reith (Project Coordinator)
<b>Dissemination level of the Deliverable</b>	<input type="checkbox"/> <b>PU:</b> Public <input type="checkbox"/> <b>PP:</b> Restricted to other programme participants (including Commission Services) <input type="checkbox"/> <b>RE:</b> Restricted to a group specified by the consortium (including the Commission Services) <input checked="" type="checkbox"/> <b>CO:</b> Confidential, only for members of the consortium (including Commission Services)
<b>Responsible</b>	Ms. Macarena Sanz, WP7 and Dissemination Leader

**Content**

1. Introduction.....	3
1.1. Document purpose and scope.....	3
1.2. Intended Audience.....	3
2. MIRACLES Newsletter #2.....	3
2.1. Introduction.....	3
2.2. Design .....	3
2.3. Content .....	3
2.4. Impact of the 2 <sup>nd</sup> newsletter:.....	4
ANNEX 1. MIRACLES Newsletter #2 .....	6

## 1. Introduction

### 1.1. Document purpose and scope

The purpose of this document is to describe the elaboration of MIRACLES newsletter #2, in which all Work Package Leaders have been involved.

MIRACLES Newsletter #2, which can be found in Annex I, was sent to stakeholders on February 20<sup>th</sup>, 2015.

### 1.2. Intended Audience

The dissemination level of this document is confidential and restricted to MIRACLES partners and the EC services.

## 2. MIRACLES Newsletter #2

### 2.1. Introduction

The second newsletter has the main goal of communicating the progress of the project after the first year of execution, related to the planned activities.

### 2.2. Design

The content and the design of MIRACLES 2nd Newsletter was developed by IDConsortium (Partner 20), with the agreement and approval of the Project Coordinator (Hans Reith, Wageningen University, Partner 1) and contributions from Work Package Leaders.

The preparation of the Newsletter began a month a half prior to its delivery to the stakeholders. At that point, all Work Package Leaders were informed about its content and the contributions needed.

### 2.3. Content

MIRACLES 2<sup>nd</sup> Newsletter intends to provide an overview of the progress achieved during the first year of the project, highlighting the main objectives of each Work Package.

IDConsortium coordinated the writing of the newsletter with the support of Work Package leaders and the Project Coordinator. The final content was reviewed and approved by the Project Coordinator.

The layout of the Newsletter has the following sections:

1. Editorial (written by Hans Reith, Work Package 8 Leader and Project Coordinator)
2. Articles:

- 2.1. Innovation in algae cultivation (written by Bert Lemmens, Work Package 1 Coordinator)
  - 2.2. Bioprospecting and development of metabolic models (written by Hans Kleivdal, Work Package 2 Coordinator)
  - 2.3. Development of integrated biorefinery (written by Lolke Sijtsma, Work Package 3 Coordinator)
  - 2.4. Ready to start application development (written by Philippe Willems, Work Package 4 Coordinator)
  - 2.5. All set for data collections (written by Lara Dammer, Work Package 6 Coordinator)
3. MIRACLES Annual Meeting – Madrid, 11-13 November 2014

The structure aimed to be reader-friendly, providing images and links in each article directing to MIRACLES website for reading the full article.

#### 2.4. Impact of the 2<sup>nd</sup> newsletter:

The Newsletter was sent to a total of 293 stakeholders and the 70 contact people of the MIRACLES partners on February 20th, 2015.

The type of stakeholders who has received the 2nd newsletter is:

- Associations: Around 4% of the stakeholders that received the 1<sup>st</sup> newsletter were food and feed producers and fertilizers associations.
- Industry: Around 40% of the stakeholders that received the 1st newsletter were industrial stakeholders. The sectors were:
  - Related to microalgae exploitation: 7% of the MIRACLES stakeholders
  - Valorisation of biomass mainly for Fertilizers: 8% the MIRACLES stakeholders
  - Fish Feed Industry: 3% of the MIRACLES stakeholders
  - Fuel: 0,5% stakeholders
  - Human Food and Pharmaceutical Industry: 15% of the MIRACLES stakeholders
  - Chemicals Industry: 4% of the MIRACLES stakeholders
  - Biotechnological companies: 2,5% of the MIRACLES stakeholders
- Public Authorities (EU institutions and regulatory bodies to national and local administration): Around 11% of the stakeholders that received the 1st newsletter were public authorities
- University and Research Centres: Around 45% of the stakeholders that received the 1st newsletter were researchers and scientific representatives:
  - Related to microalgae exploitation: 15% of the MIRACLES stakeholders
  - Valorisation of biomass mainly for Fertilizers: 10% the MIRACLES stakeholders
  - Fish Feed Sector: 2% of the MIRACLES stakeholders
  - Human Food: 6,5% of the MIRACLES stakeholders
  - Pharma, Nutraceuticals and Cosmetics: 11%
  - Chemicals Industry: 0,5% of the MIRACLES stakeholders

The Newsletter was also uploaded to be available in the project website ([http://miraclesproject.eu/docs/newsletter\\_2b.pdf](http://miraclesproject.eu/docs/newsletter_2b.pdf)).

Future newsletters will be designed taking into account industrial needs and concerns. The MIRACLES stakeholder network is continuously being revised in order to engage more stakeholders and to do a more focused dissemination per sector/ industrial group.

**ANNEX 1. MIRACLES Newsletter #2**



Issue 2 – February, 2015

## Editorial

**S**ignificant advances and achievements have been made in the first year of the MIRACLES Project. The optimization of algae production through the development of molecular monitoring tools and metabolic modelling is well underway. Significant progress was made in creating the innovative technology needed to capture CO<sub>2</sub> from the atmosphere using sorbent technology, the development of a working liquid foam bed panel photobioreactor on bench scale and the comparison of membranes for growth medium recycling and algae harvesting. In the area of bioprospecting and cultivation at extreme locations, the first sampling programs have been successfully conducted and they produced ca. 250 microalgae isolates from extreme locations in the Canary Islands, Chile and Norway. Screening of these isolates and materials from culture collections is ongoing to define their production potential.

In the area of bioprocessing, appropriate analytical methods were established and harmonized, the biochemical composition of selected algae strains was determined and the first results were obtained with cell disruption technologies, including encouraging results for enzymatic processing. Extraction routes were explored with promising first results. Preparations are ongoing for the forthcoming work on product development and market assessment and a pilot-scale demonstration of integrated value chains.

Tools were set up for data exchange among partners as input for technical models that will form the basis for the Life Cycle Assessment and techno-economic assessment.

In mid-November 2014 the project's 1st Annual Progress Meeting took place in Madrid,

where the results to date were presented and discussed and plans for the next period were made. The various workshops were very productive and served to enhance active exchange and collaboration between the partners, which is essential in achieving the project's goals.

The progress to date suggests that the project can indeed make a valuable contribution in the area of industrial production of specialty products from microalgae for major market sectors, which is key in the scale-up and further commercialization. The results are highlighted in more detail in this Newsletter.

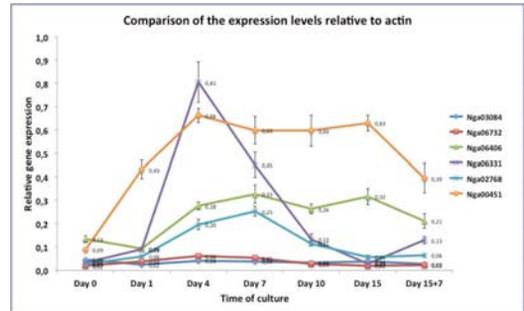
Finally, congratulations are in order to our project partner Fitoplancton Marino based in Cadiz, Spain who has become the first and only producer of microalgae in the world to obtain authorization to market the microalgae *Tetraselmis chuii* in the European Union as a seafood flavouring agent under the "Novel Food" regulation. This achievement is a big step for Fitoplancton and it also gives a boost to the application of algae products in food and other market segments.

Hans Reith, Wageningen University  
Project Coordinator



## Innovation in algae cultivation

Algae production is the first step in the entire chain of the algae economy. Algae production systems need to guarantee good quality and be predictable, stable and cost effective. In this work package we do research to improve this by achieving cost saving, sustainability and productivity enhancement. [Read more](#)



## Bioprospection and development of metabolic models

Bioprospecting new, robust, and productive algal isolates to assess their industrial potential is a cornerstone of the MIRACLES project.

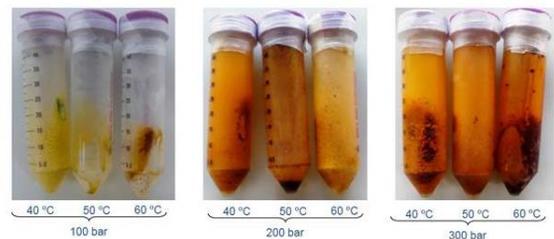
[Read more](#)

## Development of integrated biorefinery

Interesting progress has been achieved during the first year of the project; especially related to the analytical methods and chemical composition for the selected algal strains, cell wall weakening, disruption and extraction technologies.

[Read more](#)

**SUPERCritical FLUID EXTRACTION - SFE**  
Sequential extractions: 1st step optimization



## Ready to start application development

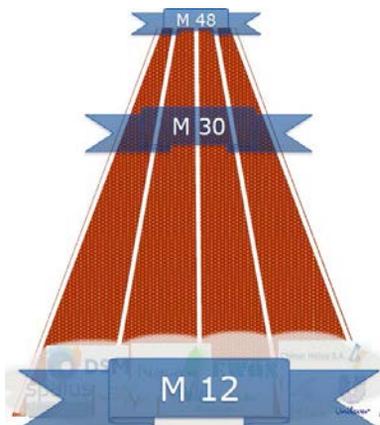
After a first year mainly spent on selecting and optimising the proper evaluation methods and giving input to other Work Packages on the expectations of the end-users, WP4 partners are now ready to start the proper application development work.

[Read more](#)

## All Set for Data Collection

Data Inventory Sheets, an Exchange Task Force and the Business Plan Model are in place in order to guarantee a reliable and continuous flow of information and the economic assessment needed.

[Read more](#)



## MIRACLES 1<sup>st</sup> Annual Meeting - Madrid, November 2014

The MIRACLES Project's First Annual Progress Meeting took place in Madrid, Spain, and gathered all consortium partners for three days, on 11th, 12th and 13th of November 2014.

The meeting was focused on reviewing the progress of the activities developed so far for every Work Package, planning the activities for the second year and reporting the financial status of the project. On the final day, all partners visited NATAc and CIAL-CSIC facilities at Parque Científico de Madrid.

[Read more](#)

