

North American and European markets for Algal ingredients 2020 – 2025

MULTI CLIENT PROPOSAL

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for

PROSPECTIVE CLIENTS OF THE REPORT

by

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1. INTRODUCTION

Uni and Multicellular micro algae which are rich in proteins (60 to 70% on dsb w/w), omega 3 fatty acids, antioxidants and vitamins are superfoods with immense potential. They are also a rich source of antioxidants and can protect against in-vivo oxidative damage – a major source of physiological stress for bodybuilders, sportspeople and during ageing. The two main micro algae commercially available are Spirulina and Chlorella.

Applications of algae in processed food are limited. This is mainly due to the fact that these are whole-cells and incorporating them in a food matrix often ends up interfering with the stability and texture of foods, and provides a green/yellow color and strong characteristic flavor/odor.

Despite being considered as a superfood in the western markets, microalgae are also cultivated and consumed in third world countries, as a means to tackle malnutrition. In these regions, microalgae are cultivated in natural habitats such as open ponds, and in small tanks and pots. The growing conditions are not monitored as in commercial productions and are subjected to external contaminants such as heavy metals, other algal contamination, bacterial and algal toxins, etc. The domestically produced biomass is consumed locally as a source of nutrient and hardly finds its way to the commercial market.

In this study, Giract will try to understand the supply scenario of microalgal biomass production and the market potential of these algae as a superfood in supplements. Processed food and feed applications will be considered for the purpose of identifying demand-supply gaps.

In the current study, Giract will concentrate on spirulina and chlorella which are commercially cultivated under standardised conditions. Galderia is a potential new entrant. Other microalgal species may also be available in the market.

Demand analysis will be carried out for the USA, as this is the key market for use of microalgae in supplements and functional foods. The supplement market will be covered extensively in the report as it is the largest end-use sector, along with the functional food sector (bars, RTD beverages (smoothies, shakes and the like) and ready to mix powders). An overview of feed application will also be provided.

Giract will attempt to understand the positioning for superfood ingredients in the general performance nutrition space divided into the three main categories – muscle building, endurance and recovery. Many well defined ingredients are currently positioned for these functions.

For the demand interviews, two categories of users, in the performance nutrition space have been demarcated –

- **Potential users of Microalgae** – companies which use other competing protein rich superfoods or companies which are planning to use protein rich superfoods – During interviews with these companies, focus will be on, on what basis does the company select protein rich superfoods. What are the requirements for the company when selecting a super food and the company's view on the future used of microalge in the market.
- **Existing users of Microalgae** – during demand interviews, focus will be on the reasons for which the company had preferred microalgae over/along with other ingredients. Are there any challenges and unmet needs that the company faces with respect to using microalgae in their products? Will the company continue to use microalgae or shift to other protein rich superfoods?

In this study, it is very important to understand the impact of COVID-19 on demand in the current year and for forecasts. Giract divides the year 2020 into three parts –

- Pre-Covid: January–March 2020 (including parts of China) Q1
- Covid: April–June 2020 Q2
- Post-Covid (assuming no major flare up late this year): July–December 2020 H2.

Some sectors such as instant noodles and canned soups seem to have increased their sales while luxury/premium food products have fallen. Giract has also anecdotal evidence that health and wellness is top priority for consumers right now, based on feedback from supplement companies. Therefore discussions with the demand companies will revolve around how they see COVID-19 affecting their ingredient choice.

Giract is a transnational food and beverage ingredient consulting firm, which has more than 50 years of experience in tracking and understanding global markets. It has a wide network of industry contacts as well as expert, local consultants who fulfil challenging projects. It will tap this network to complete this project.

2. OBJECTIVES

The objective is to provide a complete view of microalgal production and demand in North America. This will translate into the following sub-objectives

- Estimate production of microalgal biomass in 2020 split by main species (spirulina, chlorella, others)
- Calculate availability with the formula: $\text{Production} + \text{import} - \text{export} = \text{availability}$
- The demand for microalgae in supplements, food, and feed applications
- Forecast microalgal demand till 2025
- Drivers and challenges for use of microalgae across different regions specified in the scope

3. SCOPE

3.1. PRODUCT

Microalgae – Spirulina, chlorella, others

3.2. SECTOR

Performance nutrition covering supplements, bars, RTD beverages, ready to mix powders

3.3. GEOGRAPHICAL

North America: USA/Canada, Europe (EU28+NO+CH)

3.4. TIMESCALE

Current estimations for 2020 and forecast till 2025

4. PROGRAMME

4.1. BACKGROUND EVALUATION

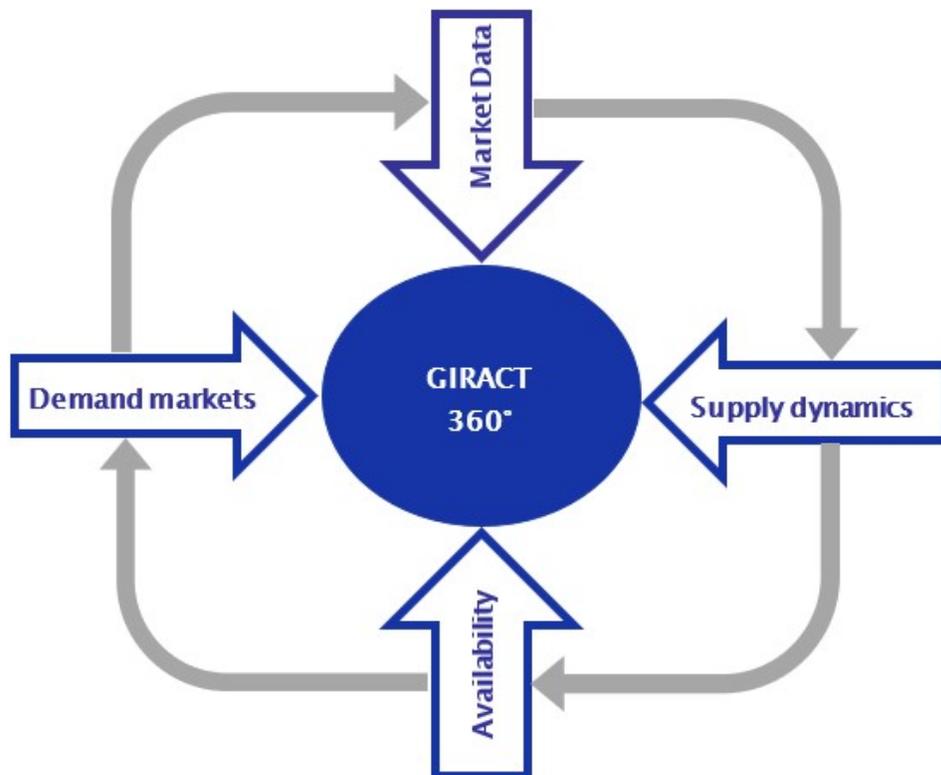
The work will begin with an evaluation of Giract's in-house and public sector databases.

Giract will draw the initial information from its own earlier studies. Along with this, public databases will provide a part of the major (supply/demand) and minor (regulatory barriers, production, patents, etc.) trends in the market.

Giract will draw on proprietary end-sector databases, as well as company information to provide the information relevant to understanding the end-use sectors in detail.

4.1. FIELD-WORK METHODOLOGY

Giract follows a 360° methodology that involves multiple levels of analysis and rounds of discussions with both suppliers and end-users before arriving at the conclusions of the project. The 360° analysis is summarized in the diagram below –



4.1.1. **SUPPLIER INTERVIEWS**

Focussed interviews will be conducted with the identified suppliers (both producers and distributors) of the ingredients in question across North America. Major production was observed in the USA, China, Japan, India, and France. Hence supplies coming in from the other countries needs to be identified. These interviews will focus on identifying the capacity, production, strengths and weaknesses, customer profile and their understanding of the market and demand trends. These interviews will not cover all the producers but representative key producers.

4.2. **DEMAND INTERVIEWS**

The heart of this phase of the analysis will be the planned in-depth interviews with the current/potential users in the USA, posing questions of why/why not from technical, commercial, legal and consumer points of view at the R&D/Product Development levels (and if required, the Purchasing department) in these companies.

5. REPORT /TIMING/BUDGET

5.1. REPORT FORMAT

The report will be presented in a searchable PDF format from a Microsoft Word document.

5.2. TIMING

It is estimated that the study will be published in Mid–August 2020.

5.3. BUDGET

North America: Please contact us for subscription details

Europe: Please contact us for subscription details

North America and Europe together: Please contact us for subscription details

Regular interims will be scheduled to provide updates on the research. A final presentation is recommended. If it has to be at the client's office, travel and subsistence for two of Giract's personnel will be charged to the client. There is no time cost for this presentation. In lieu of a direct visit, the client may organize a web conference.

6. GIRACT TEAM

Giract, the specialist food ingredients, additives and technologies' company brings a unique two-way vision to bear in its research. It has over 45 years of continuous experience in research in relevant ingredient and end-product markets, together with a wide range of multi-client and proprietary studies in all the major categories of food ingredients. The Giract research team includes:

Dr. Velamur Krishnakumar B.Tech (Chem), MBA, Dipl. Computer Science, Ph.D. in Management Science: Managing Director of Giract. Krishna's early work experience was in consumer marketing – first in McCann Erickson Advertising and later as Product Manager at what is currently known as GlaxoSmithKline. He then joined Giract in Geneva, Switzerland where he is currently the Managing Director. Krishna has published many articles on food ingredients and has addressed various International Conferences. He is a Professional Member of the IFT and has chaired the Vitafoods Conference over many years. With a vast experience in international food and food ingredient markets, he has managed numerous strategic and operational projects across almost all ingredient sectors. He also chaired many other ingredient conferences including omega 3, fibres, probiotics, etc.

Dr. Graham C. Robinson: Ph.D. Biochemistry (Cambridge, UK). Graham has spent 10 years working in research laboratories, first in Norwich and then in Cambridge in the UK, as well as Geneva, Switzerland. He is a specialist in fermentation technology, bioreactors, and microbial production methods, and has substantial experience of small-molecule production, processing, and purification techniques. He joined Giract in 2017, in order to bring his technical expertise to the world of technical ingredients.

Dr. Kaushik Ramakrishnan Shankar: Ph.D. Biotechnology. Kaushik has taught courses in sensory analysis of foods, practical food analysis, and Intellectual property at Anna University, Chennai. He began his professional career with PR Biotech, a start-up manufacturing Stevia based sweeteners, where he was responsible for product formulation and start-up of the production unit. Kaushik moved on to Frost and Sullivan in 2009 where he analysed global markets for food and beverage ingredients. He joined Giract as an analyst in 2012. Kaushik has been widely quoted in the media and has published in international peer-reviewed scientific and industry journals.