CULTURED MEAT MARKET-INDUSTRY TRENDS AND FORECASTED ESTIMATES, TILL 2050

"ROOTS ANALYSIS Pvt. Ltd."

A training report submitted in partial fulfilment of the requirement for the degree of

MASTER OF SCIENCE

In

BIOTECHNOLOGY

Submitted By

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Under the supervision of

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This is to certify that the project entitled **"Cultured Meat Market-Industry Trends and Forecasted Estimates, till 2050"**, submitted by **Tanvi Chadha** in partial fulfilment for the award of the degree of **Master of Science** in **Biotechnology** to Jaypee University of Information Technology, Waknaghat, Solan has been made under my supervision. This work has not been submitted partially or wholly to any other University or Institute for the award of any other degree, diploma or such other titles.

17/5/2024

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Associate Professor

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Senior Business Analyst

Candidate's Declaration

I hereby declare that the work presented in this report entitled "**Cultured Meat Market-Industry Trends and Forecasted Estimates, till 2050**" in partial fulfilment of the requirements for the award of the degree of **Master in Science** in **Biotechnology** submitted in the Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology, Waknaghat is an authentic record of my work carried out at Roots Analysis Pvt. Ltd. over a period from January 2024 to May 2024 under the guidance of **Dhriti Gulati** (Senior Business Analyst) and **Dr. Jitendraa Vashistt** (Associate Professor, BT&BI).

The matter embodied in the report has not been submitted for the award of any other degree or diploma.

(Student Signature)
Tanvi Chadha (225111002)
This is to certify that the above statement made by the candidate is true to the best of my knowledge.

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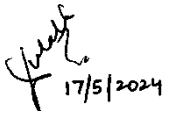
Supervisor Name: Dr. Jitendraa Vashistt
Associate Professor
Biotechnology & Bioinformatics
Dated:

Certified that the above statement made by the student is correct to the best of our knowledge and belief. Roots Analysis owns the copyright of the findings presented in this report. Under no circumstances should this information be shared with other third parties without the prior consent of the company.



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Summary

The project "***Cultured Meat Market-Industry Trends and Forecasted Estimates, till 2050***" broadly features a detailed assessment of the cultured meat providers that develop cultured meat products as a sustainable protein alternative in order to cater the growing meat demands. The study presents an in-depth analysis of the key drivers and trends related to this domain.

I was assigned a market report project on "Cultured Meat". The report provides a general overview of cultured meat production, the different steps involved in the process and various products and technologies that are currently available in the market. The research report also provides an extensive study of the current market landscape of cultured meat providers, along with information on the established as well as emerging players in this field. Further, the report provides an in-depth analysis of the various partnerships inked related to cultured meat, from January 2020 to December 2023. An extensive primary and secondary research was carried out to gather relevant information regarding the topic.

As a final outcome of the study, a complete pdf report was compiled along with an excel database providing information for more than 105 cultured meat providers. The intensive details captured on several parameters, including source of cells, type of cultivation technique, type of end products, form of meat, end users and application. Company specific details captured, including company's establishment year, employee strength, location of headquarters, and leading players (*in terms of number of products*). Moreover, an analysis was put forth to present the current state of the industry.

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LIST OF ABBREVIATION

Abbreviation	Full Forms
NASA	National Aeronautics and Space Administration
FDA	Food Drug Administration
LOI	Letter of Intent
MoH	Ministry of Health
R&D	Research and Development
IPO	Initial Public Offering
EFSA	European Food Safety Authority
NGO	Non-Governmental Organization

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Abstract

The global food industry is witnessing a paradigm shift with the emergence of cultured meat as a viable alternative to conventional animal farming practices. The production of cultured meat via cellular agriculture techniques offers a promising way to address certain issues related to food security, ethics, and sustainability that come with conventional livestock farming. Growing consumer awareness of environmental sustainability, animal welfare, and health implications is driving the growth of the cultured meat market. Its commercial viability has increased due to regulatory support and technological advancements. Nonetheless, obstacles such as elevated manufacturing expenses, constraints on scalability, and technological impediments persist. Obstacles also come from the regulatory approval process and consumer acceptance. Strategic collaborations, interdisciplinary research, and technological innovations can drive down production costs. Diversification of product offerings, including cultured seafood and poultry, could expand market reach. This abstract provides an overview of the cultured meat market, highlighting the existing market size and potential future growth with a major emphasis on its current trends, challenges, and opportunities.

Company Profile

Roots Analysis Pvt. Ltd. is a business research and consulting firm which specializes in providing in-depth business research and consulting services for pharmaceutical industry. Focused on providing an informed and impartial view on key challenges facing the industry, the research is primarily driven by an in-depth analysis covering the following parameters:

- Research and development
- Existing market landscape
- Future Commercial potential
- Regulatory concerns
- Regional growth drivers
- Risks and opportunities

The firm specializes in analyzing areas which have lacked quality research so far or require more focused understanding within the broader industry. Apart from writing reports on identified areas, the Mosa Meatlso provide bespoke research / consulting services dedicated to serve our clients in the best possible way.

The business reports highlight trends ranging from commercial success / potential, technological developments and outlook built around opportunities and threats. The company majorly focus on areas spanning the following domains:

- Therapeutic segments
- Emerging technologies
- Medical devices
- Drug Delivery
- Clinical Trials

1.1. RESEARCH METHODOLOGY

Most of the data presented in this report has been gathered via secondary and primary research. We have conducted interviews with experts in the area (academia, industry, medical practice and other associations) to solicit their opinions on emerging trends in the market. This is primarily useful for us to draw out our own opinion on how the market will shape up across different regions and technology segments. Where possible, the available data has been checked for accuracy from multiple sources of information.

The secondary sources of information include:

- Company's Annual reports
- Investor presentations
- Industry databases
- News releases from company websites
- Government policy documents
- Industry analysts' views
- Research articles; Blogs; Press articles
- Company website

While the focus has been on providing a comprehensive view on the ongoing research, the report ***"Cultured Meat Market-Industry Trends and Forecasted Estimates, till 2050"*** also provides an independent view on research and development and future commercial potential emerging inthe industry. This opinion is solely based on our knowledge, research and understanding of the relevant market gathered from various secondary and primary sources of information

Work Program

The course of my on-job training at Roots Analysis started on 2nd January 2024. I was entitled to work on a project under the guidance of my manager during my training period of 6 months. The training program was structured as follows:

Cultured Meat Market Project:

- The main objective of this report is to build a comprehensive database of key opinion leaders, their relative information, their affiliations, and publications by using available data of various companies on company websites, LinkedIn profiles and other publicly available sources.
- Further, an analysis of this information is done to provide a comprehensive overview of the ongoing activity in this space.
- Introduction chapter on Cultured Meat
- Detailed profiling of key players in this domain
- Finding the contact details of the prominent speakers in conferences and contacts of the key individuals belonging to players in this domain.
- Building a database on the prominent partnerships and collaborations and further carrying out its analysis.
- Compiling data on the funding instances and representing its analytical module.
- Concluding the report with its insights, learnings, outcomes and the future scope.

Chapter 1

Introduction

1.1. CHAPTER OVERVIEW

With the increasing population and its demands, it is the need of the hour to fulfill the enhanced food requirements of the people. Thus, considering such a vast population of 8 billion people, it is quite challenging to meet the increasing meat demand and make it sufficient for everyone [1]. Thus, an alternative approach is needed to produce meat that would be sufficient to meet the basic need. One such innovative approach being used is cultured meat production. Considering the more sustainable and efficient nature of this approach it has proved to be of great importance and has shown certain advantages over the conventional meat production method [2]. This environmentally friendly approach uses cells directly isolated from the animal source contrary to plant-based meat which makes use of plant-derived raw material or proteins to develop meat [3]. With technological advances, the process of cultured meat production is now much simpler as compared to the earlier times and over the years is evolving with 3D technology now being utilized to enhance the use of this approach [4]. Additionally, the overuse of animals has accentuated the need to utilize this approach over the conventional one.Although cultured meat is at an initial stage of technology it has a vast potential to be an effective alternative [5].

This chapter provides an overview of the introduction to cultured meat.

1.2. CULTURED MEAT

Cultured meat, also known as synthetic meat or clean meat, is a type of meat produced in vitro under aseptic and highly controlled environmental conditions. It is a concept that involves the production of meat by cultivating animal cells instead of slaughtering the entire animal [6]. This process of culturing cells to produce meat involves the use of different types of meat sources like beef, pork, chicken, and fish. An increment in the synthetic meat industry globally has paved the way for the large-scale production of cultured meat [7].

Various environmental and sustainability concerns associated with the traditional methods of meat production are addressed by using this innovative approach of cultured meat. For instance, it has been anticipated that comparatively, in vitro cultured meat shows a reduction in greenhouse gas emission by almost 96% thereby resulting in an ethically and

environmentally efficient approach to meet the ever-increasing demands of a protein-rich diet as estimated by the Department of Food and Agricultural Organization of The United Nation [8].

The necessity of cultured meat is an outcome of various factors like the enhanced demand for a protein-rich diet coupled with the environmental stresses produced because of cattle farming such as increased greenhouse gas emission, carbon content, and water scarcity [9]. Cultured meat, an alternative to traditional meat, can help solve some of these issues and lower the ill effects. Firstly, it is observed that no harm is produced to the animals since it involves just the isolation of cells from the animals and not the use of dead animals. Additionally, by culturing meat in a laboratory a large area of land that is otherwise reserved for livestock farming can be used for alternative purposes eventually leading to sustainable use of resources [10]. Overall this approach is an energy efficient process to produce meat.

Further, it is worth highlighting that the exceptional composition of meat which includes distinct components like proteins that are easily digested, vitamins, minerals, and some of the essential amino acids make it one of the most nutritious forms of food to consume and hence cultured meat production is extensively being used to suffice the meat requirement [11].

Meat is described as a muscle tissue derived from an animal source. It is considered as an important source of nutrition and has several health benefits when included in the diet. Notably, it acts as an important source of macronutrients and micronutrients such as proteins, fats, carbohydrates and vitamins that provides with the ability to build and repair worn out tissues as well as fulfill the energy requirements of the body [12]. Given its advantages, the demand for meat is increasing extensively, which has led to a three-fold increase in industrial meat production. In this context, globally, over 350 million tons of meat is being produced annually [13]. Despite being able to cater the ever increasing demand, the process of meat production has led to several harmful impacts on the environment including water scarcity, overburden on the land resources and an increase in the pollution levels associated with high levels of greenhouse gas emission and the increased carbon content [14]. This has prompted the industrial stakeholders to discover and implement novel approaches of meat production, so that it suffices the basic need of human consumption in a sustainable and eco-friendly way. Cultured meat production is one such process that involves direct isolation of cells from an animal source, followed by cell culturing and cell structuring for the *in-vitro* development of meat [15]. In the recent years, with several technological advancements, the process of cultured meat production is expected to become simpler, and the domain is anticipated to evolve rapidly in the coming future [16].

This chapter presents an introduction to cultured meat, the need for cultured meat and its comparison with conventional meat.

1.2.1. NEED FOR CULTURED MEAT

The necessity of cultured meat is an outcome of various factors. According to estimates, the production of meat takes up almost 70% of all freshwater and arable land. Further, greater levels of cattle farming and slaughtering of animals have accentuated the need for cultured meat production, which addresses the associated environmental concerns and helps to overcome the scarcity of natural resources, such as land and water by providing a sustainable source of animal protein. Moreover, it reduces the adulteration caused due to accumulation of high levels of harmful gases [17]. It is worth highlighting that the overuse of animals in order to meet the increased meat demands has emerged as the primary driver for the utilization of this approach in order to cater to the ethical issues related to animal welfare. Additionally, it serves the increasing demand for meat as a major component in the diet [18]. Although cultured meat domain is at an initial stage of development, it is an energy efficient method to produce meat and has vast potential to emerge as an effective way to fulfill surplus meat requirements [19].

1.2.2. CONVENTIONAL MEAT VS CULTURED MEAT

Conventional meat production process that involved the use of traditional farming practices, such as raising animals and subsequently, slaughtering them in order to derive meat products [20]. Although this is the process that has sufficed the global meat demand for years, however, it has been observed that the process is associated with several drawbacks. On the other hand, cultured meat production is a relatively efficient and sustainable approach, which is designed to maintain a balance between the demand and supply chain of meat industry while mitigating the environmental and sustainability concerns associated with the traditional methods of meat production. This can be validated through estimates generated by The United Nation's Food and Agricultural Organization, which suggest that *in-vitro* cultured meat demonstrates a 96% reduction in the greenhouse gas emission, as compared to conventionally produced meat [21].

Figure 1.1 highlights conventional meat versus cultured meat

Figure 1.1 Conventional Meat Vs Cultured Meat

Parameters	Conventional Meat	Cultured Meat
Production Process	Meat is produced through livestock farming by raising and slaughtering animals.	Meat is produced by isolating and culturing animal cells under *in-vitro* conditions.
Environmental Impact	Generates harmful impact on the environment by contributing to air pollution through increased greenhouse gas emission.	Environment friendly approach as it emits less amount of greenhouse gases and has a lower carbon footprint.
Animal Welfare	Involves slaughtering of animals, rendering ethical concerns. Additionally, administration of antibiotics to animals has led to antibiotic resistance in livestock.	Victimless meat is produced without causing any harm to animals. Further, the process does not require administration of antibiotics.
Resource Efficiency	Requires excessive water consumption and use of land resources. However, helps in maintaining soil fertility through livestock farming.	Relatively efficient process as it involves minimum use of water and land resources, enabling a sustainable production process.
Nutritional Benefits	No absolute control over the nutritional aspects of the meat produced.	Nutritional content of meat can be controlled by adjusting the nutrient composition of the media.
Contamination	Chances of contamination are high if the meat is obtained from an infected animal.	Chances of contamination are rare owing to controlled environmental conditions.

Source: https://www.frontiersin.org/articles/10.3389/fnut.2020.00007/full, Roots Analysis

Chapter 2

Review of Literature

2.1. CHAPTER OVERVIEW

This chapter provides information on the historical evolution of the cultured meat industry, followed by the process and techniques used in the production and bio-fabrication of cultured meat. Finally, the chapter concludes with highlighting the various benefits and drawbacks of the cultured meat production along with future perspectives.

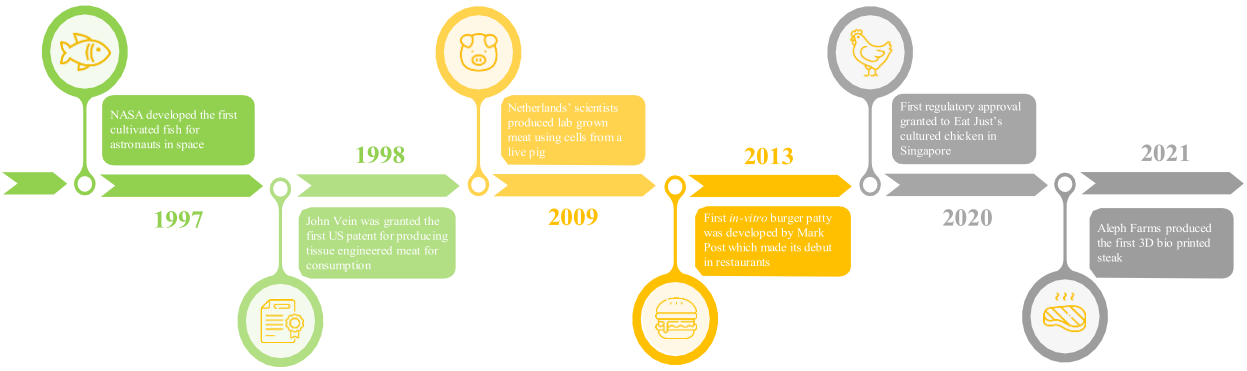
2.2. HISTORICAL EVOLUTION

The historical evolution of cultivated meat is associated with several development initiatives, coupled with technological and regulatory advancements. The idea of cultured meat emerged with research carried out by scientists at NASA in search of an alternative approach to produce proteins for astronauts in space. It was considered one of the most notable undertakings in the field of cultured meat and led to the development of the world's first cultured fish. Following this, the first research institute, New Harvest was developed by Jason Matheny, specifically to carry out research in this domain [22].

Thereafter, the beginning of a new decade was marked in 2013, by the introduction of the first hamburger made from cultured meat for human consumption at Maastricht University, Netherlands. Further, up till 2019, the domain witnessed significant expansion in terms of the number of companies being established for producing cultured meat. These expansions were supported by the substantial amount of money invested / raised by novice startups during this period. Later, in 2020, the cultured meat domain stepped a milestone with the first approval for cultured chicken (*developed by Eat Just*) by the Singapore agency, which was then served in restaurants and was made public. This approval sparked the interest within industrial stakeholders engaged in this domain, towards commercialization of their cultured meat products [23]. Subsequently, in 2022, two other companies named GOOD Meat and UPSIDE Foods received regulatory approval from the U.S. Drug and Food Administration (FDA) to commercialize their cell-cultivated chicken products [24].

Figure 2.1 highlights the historical evolution of cultured meat.

Figure 2.1 **Cultured Meat: Historical Evolution**



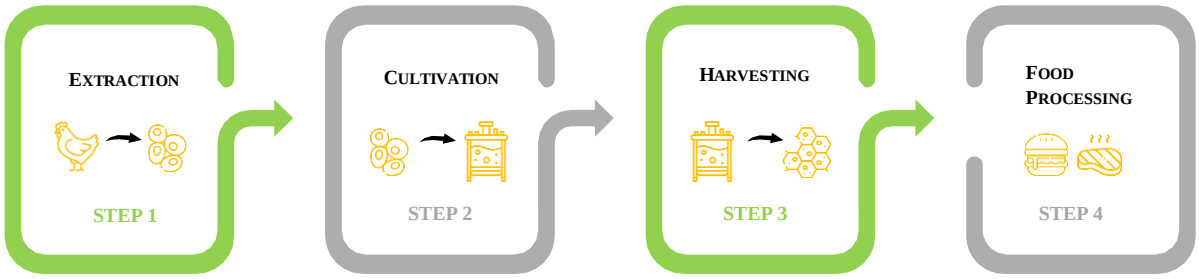
Source: https://www.believermeats.com/blog/cultivated-meat-industry-history, https://www.sciencedirect.com/science/article/pii/S2666833522000648, https://www.bbc.com/news/science-environment-23576143, Roots Analysis

2.3. CULTURED MEAT PRODUCTION PROCESS

The transformative method of producing cultured meat involves several steps that initiates with the extraction of cells from the desired animal, which are further cultivated to produce a tissue. This tissue is then harvested and processed to produce the final cultured meat product [25]. Given the technological advances, the process of cultured meat production has further simplified. There are various techniques involved in the production of cultured meat, some of them include tissue-based, suspension-based and scaffold-based cultivation [26], [27], [28].

Figure 2.2 presents steps involved in cultured meat production process.

Figure 2.2 **Cultured Meat: Production Process**



Source: https://www.eufic.org/en/food-production/article/lab-grown-meat-how-it-is-made-and-what-are-the-pros-and-cons, Roots Analysis

2.3.1. EXTRACTION

The process of meat production begins with the isolation of cells from the desired animal, without causing any harm / suffering to the source. It is worth noting that cells for cultivation can be retrieved from almost any animal species, that can broadly be classified under two categories, namely primary cells and cell lines. Primary cells, when retrieved from animal

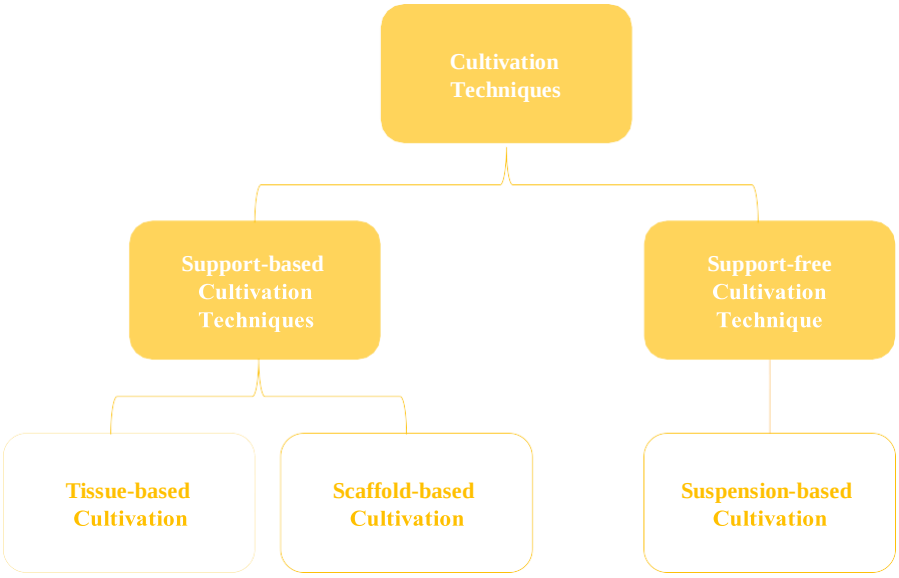
tissue, require instantaneous culturing. On the other hand, cell lines are used to maintain / preserve the cells for prolonged period which can then be proliferated, as and when required [29]. Selection of the type of cells for cultured meat production is done based on various characteristics, such as their ability to undergo prolonged and continuous differentiation, their consistency, and the nutritional requirements of the end product [30].

2.3.2. CULTIVATION

The isolated cells are further cultivated *in-vitro* to produce a developed tissue using a cultivator, also known as a bioreactor. These bioreactors are usually made of glass or stainless steel that can be easily sterilized in order to maintain aseptic culture conditions. The primary cultivation techniques include tissue-based, suspension-based and scaffold-based culturing. In tissue-based cultivation technique, the cells are grown over a supporting material (*a tissue*) in a nutrient-rich environment that mimics the in-vivo conditions. An advancement to this method includes instances wherein cells are allowed to grow by adhering on scaffolds (*external matrices / temporary structures*) in order to impart a basic structure to the maturing tissue, which is referred as scaffold-based culturing technique. In addition, the cells can also be grown without any support material, in a suspension-based approach, wherein the cells are suspended in an enriched media consisting of all the nutritional components [31].

Figure 2.3 presents the primary techniques of cultivation.

Figure 2.3 Cultured Meat: Cultivation Techniques



Source: Roots Analysis

2.3.3. HARVESTING

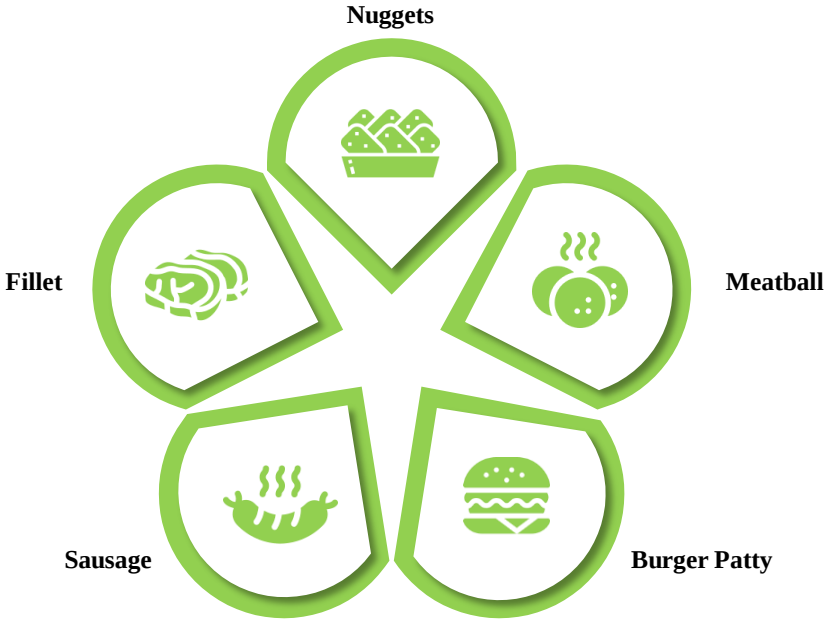
The overall cultured meat production process spans for about five to seven weeks, post which the matured cells are harvested from the bioreactors. Considering the fact that most of the tissues formed at this stage are delicate, they require utmost caution in order to minimize damage / distortion. In the recent years, continuous technological developments in this domain have enabled effortless, large-scale harvesting of cultured meat from the bioreactors [32].

2.3.4. FOOD PROCESSING

Food processing of developed meat is the final step that marks the completion of cultured meat production process. Under this step, harvested cells are treated and fabricated to produce different formulations of cultured meat, that can broadly be classified into two categories, namely whole-cut meat and minced meat. Whole-cut meat refers to the structured type of meat that has a defined shape and size, such as fish filet and whole-cut steaks. Additionally, cultured meat can be formulated into a finely chopped version known as minced meat, which is used for making nuggets and patties [33]. Further, these formulations can be processed into differenttypes of end-products, such as meatballs, nuggets, sausages, patties and burgers for consumption [34].

Figure 2.4 represents the key cultured meat product prototypes that have been developed.

Figure 2.4 Cultured Meat: Prominent End Product Prototypes



Source: https://gfi.org/science/the-science-of-cultivated-meat/deep-dive-cultivated-meat-end-products, Roots Analysis

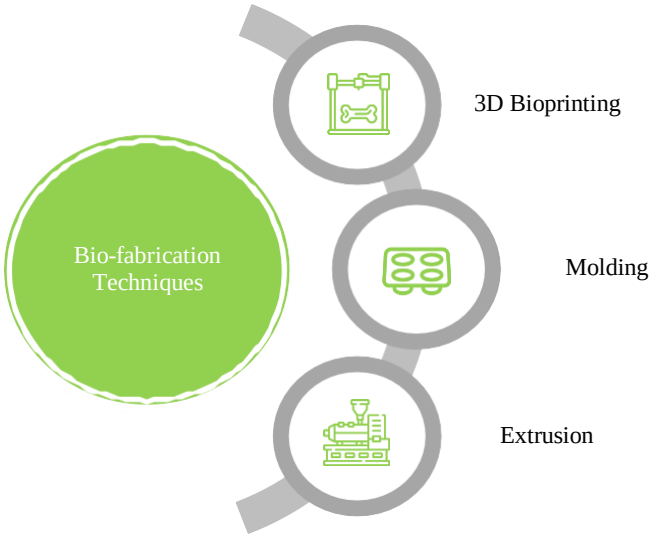
2.4. BIO-FABRICATION TECHNIQUES

The cultured meat production process makes use of several bio-fabrication techniques, that impart a definite structure to the fabricated end-product. These techniques include 3D bioprinting, molding and extrusion.

- 3D bioprinting: This technique is a combination of tissue engineering and 3D printing that involves layer-by-layer development of the product, thus providing cultured meat with an appropriate shape and structure [35]. Further owing to its benefits this technique is actively being used to replicate the exact structure of real meat for developing customized meat [36].
- Molding: Molding is another bio-fabrication technique that is actively being used to fabricate cultured meat. It is a process that involves shaping raw meat using rigid casts / molds for support thus, avoiding cell shrinkage [37].
- Extrusion: It is a process applied to improve the texture of cultured meat that involves the flow of molten form of proteins through a nozzle which aligns it and produces fine fibere [38].

Figure 2.5 highlights the different techniques used for bio-fabrication of meat.

Figure 2.5 Cultured Meat: Bio-Fabrication Techniques



Source: Roots Analysis

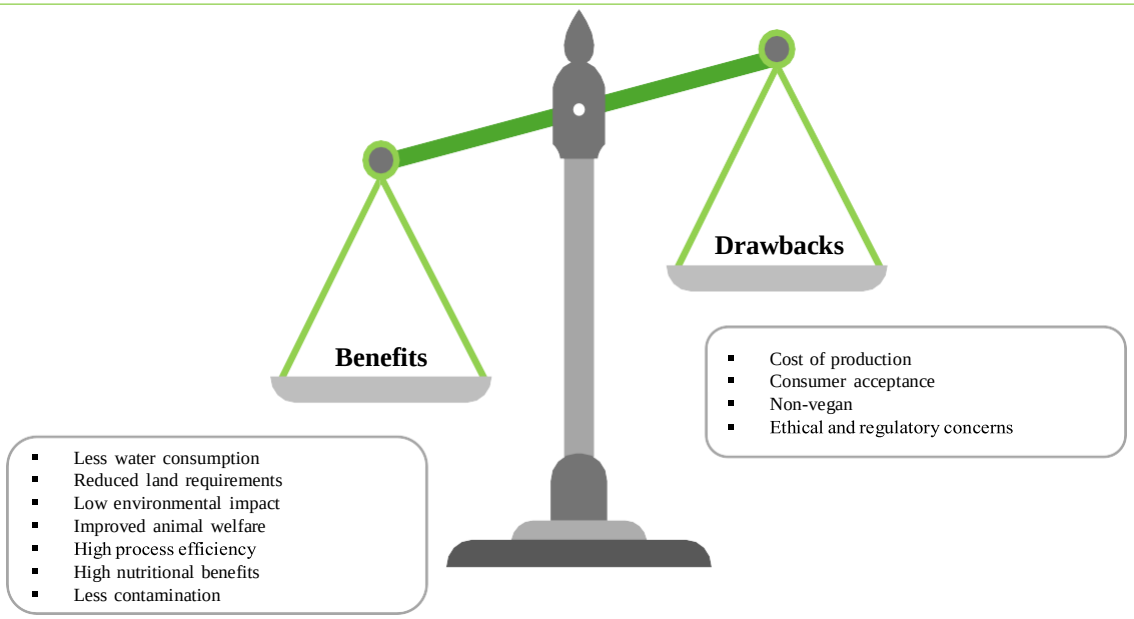
2.5. BENEFITS AND DRAWBACKS OF CULTURED MEAT

Cultured meat production process is associated with several benefits and drawbacks, some of them being related to sustainability, environmental effects, and ethical issues. Further, considering the significant impact of cultured meat on the overall meat industry it is important

to enlist some of the important factors that contribute to its benefits and drawbacks.

Figure 2.6 presents benefits and drawbacks related to cultured meat production.

Figure 2.6 Cultured Meat: Benefits and Drawbacks



Source: https://www.webmd.com/diet/cultured-meat-what-to-know, Roots Analysis

Benefits associated with cultured meat production include:

- **Less water consumption:** Cultured meat produced in laboratory requires very little amount of water, promoting sustainable and efficient use of resources.
- **Reduced land requirements:** Dependence on land resources, owing to the growing population and their use for livestock farming, is reduced by growing meat in a laboratory, assisting in sustainable use of land resources [39].
- **Low environmental impact:** Cultured meat is known to generate less amount of greenhouse gases and carbon footprint, thus preventing the environment from being polluted heavily.
- **Improved animal welfare:** Cultured meat production process allows circumvention of the need to slaughter animals for meat production. Instead, it involves extracting cells form animals without causing any harm [40].
- **High process efficiency:** The production of *in-vitro* meat is resource-efficient process which aids in alleviating the strain on global resources owing to much less energy input requirements [41].

- **High nutritional benefits:** Cultured meat production process allows the addition of important nutrients in the growth medium in order to obtain highly nutritious meat. Additionally, the end-product obtained is antibiotics and contamination free [42].
- **Less contamination:** The chances of contamination in lab-grown meat production are less owing to highly sterile environmental conditions for cell culturing inside the bioreactor [43].

Drawbacks associated with cultured meat production include:

- **Cost of production:** At present, the cost of producing cultured meat is extravagant. In this context, it is worth mentioning that USD 325,000 was invested to produce and develop the first lab-grown hamburger [44]. Therefore, efforts are required to reduce the cost of production and make it more consumer friendly.
- **Consumer acceptance:** As per the research, a significant variation in the acceptance rate of cultured meat has been observed across multiple geographies [45]. Further, the attitudinal malleability associated with the adoption of cultured meat has presented a challenge in the wider acceptance of cultured meat [46].
- **Non-vegan:** Since cultured meat is developed by using cells isolated from various animal sources, it cannot be considered vegan. Therefore, cultured meat is not accepted by vegetarian consumer segment.
- **Ethical and regulatory concerns:** Introduction of cultured meat has led to the emergence of several ethical and social issues including disrespect for animals and nature, possible specter of cannibalism and reduction in the number of happy animals [47]. Regulatory approval is another aspect of the concerns associated with cultured meat production as only a few countries in the world including Singapore, US, and Israel have approved cultured meat till date [48]. Further, the Netherlands has only approved public tastings for cultured meat products [49].

2.6. FUTURE PERSPECTIVES

In the near future, the meat production process is expected to observe a paradigm shift. Owing to the distinct characteristics and benefits, the method of cultured meat production is likely to play a pivotal role in overcoming several challenges related to the continuous increase in the demand for meat.

It is worth noting that with the increasing investment in the industry, more startups have arisen

with an aim of developing innovative technologies in order to support the scale up of clean meat production process. This is accompanied by the efforts to lower the cost of production such that it becomes affordable for the consumers. Further, in order to improve the overall quality of cultured meat products, advanced microfluidics technologies are actively being deployed for precise bioanalysis [50]. Furthermore, cultured meat possess the capability to be enhanced / modified in order to produce functional foods by incorporating nutraceuticals and symbiotics [51].

Owing to the increase in the environment related awareness among people and the necessity for a sustainable and eco-friendly alternative to meat production process, cultured meat industry is anticipated to witness significant growth in the coming years.

Chapter 3

METHODOLOGY AND MODULES

3.1. CONTEXT AND BACKGROUND

This section outlines the methodologies and strategies employed throughout my training period.

3.2. DATABASE DEVELOPMENT FOR PROJECT IMPLEMENTATION

A database is a list of companies/products/devices/technologies, compiled by gathering information from diverse sources such as surveys, public records, primary research, and company websites. Database building is essential to lay a strong foundation for any project, specifically in delivering a comprehensive and structured report. Hence, it must be robust, exhaustive, and well-structured. This database allows us to monitor recent developments related to our project topic/domain and conduct various analyses using the data compiled by us. Further, this methodology is important in obtaining pertinent project data from various secondary sources and generating comprehensive insights related to our project. Therefore, initially a database was prepared in order to identify key cultured meat providers in this domain. The parameters that were captured are as follows:

- Name of the company
- Headquarters of the company
- Company's Year of establishment
- Company Size
- Source of Cells
- Cultivation Technique Used
- Form of Meat Produced
- End Products Offered
- Industry Application
- End Users
- Geography Distribution

Figure 3.1 and 3.2 lists some of the examples from the cultured meat providers' databases.

Figure 3.1 Snapshot of Database: Cultured Meat Providers (*Glimpse 1*)

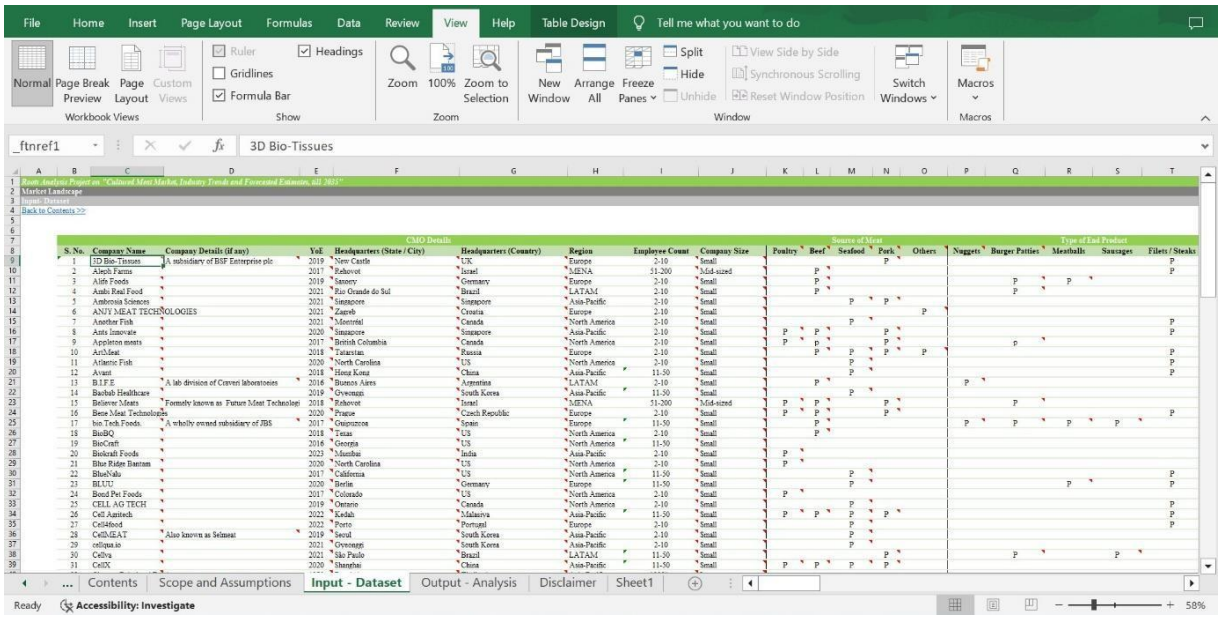
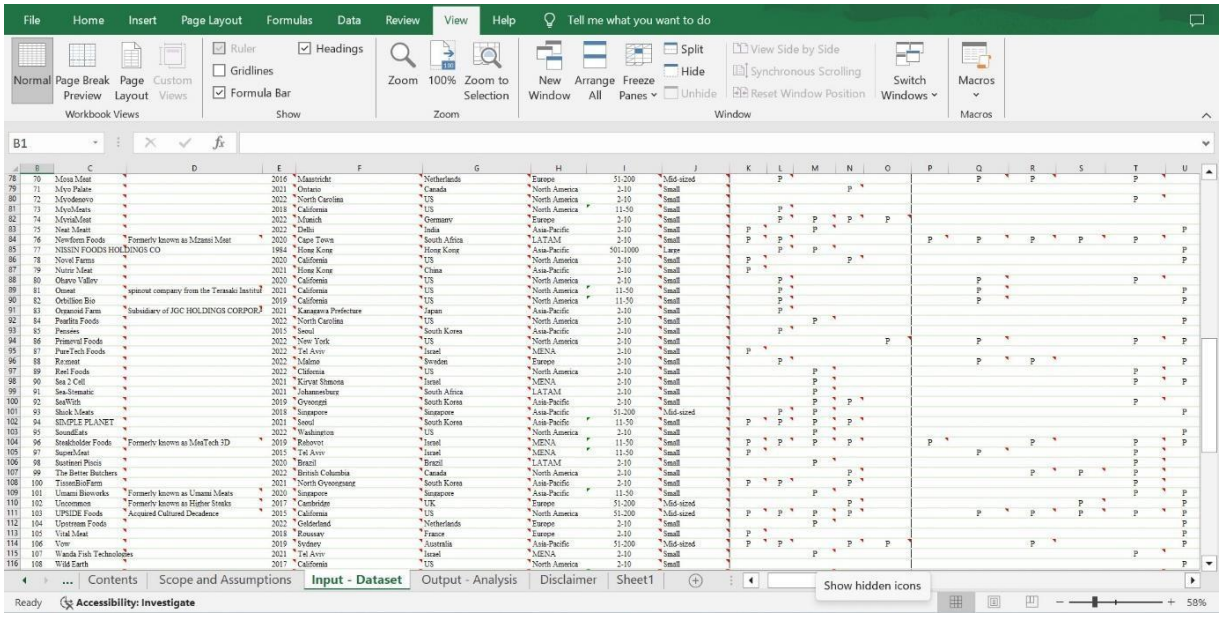


Figure 3.2 Snapshot of Database: Cultured Meat Providers (*Glimpse 2*)



Details on other cultured meat providers have been disclosed in the complete project report. However, it cannot be disclosed here due to confidentiality purposes.

3.3. MARKET LANDSCAPE MODULE

A compiled version of the major industry players actively involved in this domain is created with relevant details of parameters such as the company's headquarters, year of establishment, region, number of employees, and company size for analysis of the current market landscape of cultured meat providers.

3.4. COMPANY PROFILES MODULE

Based on a shortlisting criterion, some of the companies are shortlisted from the database for drafting company profiles. The company profiles include various subsegments such as company overview, product/technology portfolio, and service portfolio of a specific company (*as discussed below*). A sample profile from the Cultured Meat Market project report is presented below:

Table 3.1 the prominent players (*arranged in alphabetical order*) that have been discussed in detail in this chapter.

Table 3.1 Leading Cultured Meat Providers

S. No.	Company Name	Year of Establishment	Headquarters
1	Aleph Farms	2016	Netherlands, Europe
2	Company A	Year X	HQ 1
3	Company B	Year Y	HQ 2
4	Company C	Year Z	HQ 3
5	Company D	2020	HQ 4
6	Mosa Meat	2016	Netherlands, Europe

Source: Roots Analysis

3.4.1. MOSA MEAT

3.4.1.1. COMPANY OVERVIEW

Table 3.2 provides a brief overview of Mosa Meat.

Table 3.2 Mosa Meat: Company Overview

Particulars	Specifications
Company Logo	Mosa Meat
Company Overview [52], [53], [54], [55]	Mosa Meat is a Netherlands-based food technology company leading the way in producing beef through a cleaner and ethical approach. With its expertise in cellular agriculture, the company is engaged in cultured meat production by cultivating isolated cells from cows in a laboratory, negating the need for rearing and killing animals. It is worth highlighting that, in 2013, the company created the world's first cultured meat hamburger. Notably, the firm is primarily focused towards collaborating with food industry partners engaged in cultivated meat development to reduce its production costs and expand its production capabilities through extensive research and development. Recently, in 2023, the company has achieved another key milestone by securing B Corp Certification which validates their sustainable and ethical practices leading to a positive environmental impact.
Year of Establishment [56]	2016
Number of Employees [57]	51-200
Headquarters	

Particulars	Specifications
Leadership Team [58]	▪ Maarten Bosch **(**Chief Executive Officer) ▪ Peter Verstrate (Chief Operating Officer) ▪ Mark Post **(**Chief Scientific Officer)

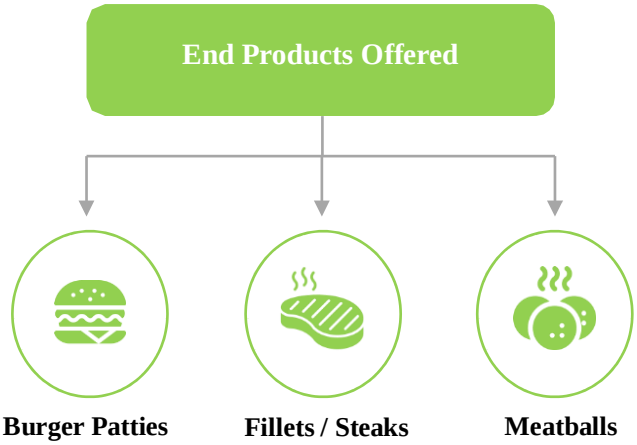
Source: Roots Analysis

3.4.1.2. PRODUCT PORTFOLIO

Mosa Meat essentially focuses on the development and production of cultured beef. While the primary source of its cultured meat product is cells isolated from cows, the company is actively looking forward to adding products derived from other meat sources, such as pork and poultry to their lineup in order to expand their product portfolio [59]. Additionally, the company produces cultured meat in minced form which is further processed to deliver different types of end products.

Figure 3.3 presents information on the different end products offered by the company.

Figure 3.3 **Mosa Meat: End Products Offered**



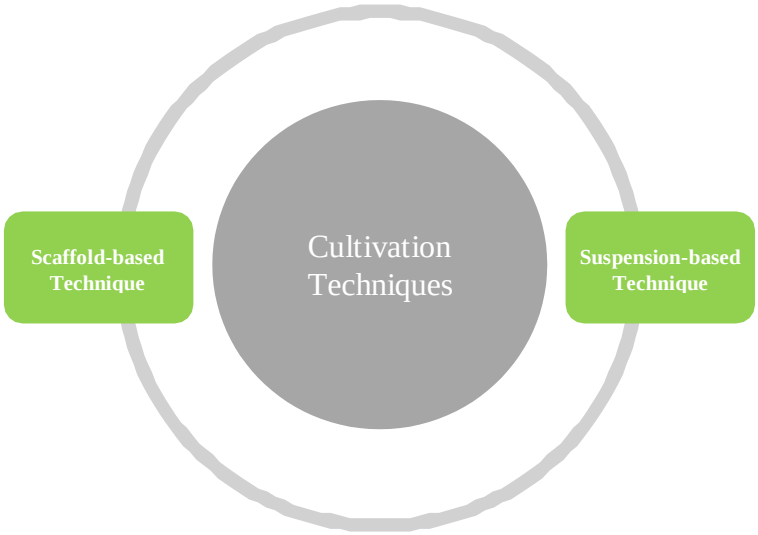
Source: https://mosameat.com/press-kit, Roots Analysis

3.4.1.3. TECHNOLOGY PORTFOLIO

The company uses advanced cell culture techniques to grow meat at various scales. At small scale production, mammalian cells typically require a supporting material / surface for attachment, which is achieved in petri-dishes and culture flasks. However, considering their unfavorable surface to volume ratio, the scale up is done by culturing cells on microcarriers suspended in a bioreactor [60].

Figure 3.4 represents the different types of cultivation techniques used by the company to produce cultured meat products.

Figure 3.4 Mosa Meat: Type of Cultivation Techniques



Source: https://static1.squarespace.com/static/5f58b0094108a94a07e7dbd2/t/5fd8831759305f0926aee7ba/1608024855856/FAQs_Mosa%2BMeat_Dec19.pdf, Roots Analysis

3.4.1.4. RECENT DEVELOPMENTS AND FUTURE OUTLOOK

Table 3.3 provides information on the various developments and strategies used by Mosa Meat to drive future growth.

Table 3.3 Mosa Meat: Recent Developments and Future Outlook

Strategic Initiatives	Recent / Past Trends	Future Outlook
	July 2023: The company entered into a collaboration with the Dutch Government to conduct pre-approval tastings of cultivated meat and seafood in the Netherlands [61].	
Entering into Strategic Collaborations	**March 2023:** The company signed LOI with Nutreco in order to create supply chain for cell feed, which will lead to a reduction in cost of cell feed and further scale up its production [62].	We expect the company to enter into more such partnerships for conducting tastings and to publicly evaluate their products.
	November 2022: The company entered into a collaboration with Esco Aster, a leading company in the cultured meat sector in order to advance the production of cultured beef using latter's resources and assets [63].	

Strategic Initiatives	Recent / Past Trends	Future Outlook
Expanding Capabilities and Infrastructure to Upgrade Existing Operations	**May 2023:** The company expanded its existing infrastructure to 29,708 square feet by opening a new scale-up facility in Maastricht, the Netherlands for upscaling advanced meat production [64].	We anticipate the company to undertake more of such capability improvement projects to support the growth of cultured meat business operations over the coming years.

Source: Roots Analysis

3.4.2. ALEPH FARMS

3.4.2.1. COMPANY OVERVIEW

Table 3.4 provides a brief overview of Aleph Farms

Table 3.4 **Aleph Farms: Company Overview**

Particulars	Specifications
Company Logo	Aleph Farms®
Company Overview [65], [66]	Aleph Farms is a cellular agriculture company involved in the cultured meat production. This Israel-based company is primarily focused on producing animal meat through a sustainable approach, aiming at causing minimum harm to the livestock animals. It is worth highlighting that in January 2024, the Aleph Farms achieved a key milestone by becoming the first company in the world to seek regulatory approval for its unprecedented, cultured steaks by the Israel's Ministry of Health (MoH). Additionally, the company plans to strategically amplify its production capabilities by initiating other facilities, allowing them to spearhead the transformation in the global food industry with a core commitment to providing sustainable and ethically sourced meat alternatives.
Year of Establishment [67]	2017
Number of Employees [68]	51-200
Headquarters	
Leadership Team [69]	▪ Didier Toubia (Chief Executive Officer and Co-Founder) ▪ Neta Lavon (Chief Technical Officer and Co-Founder) ▪ Maytal Foox (Director of Food Technology and Product Development)

Source: Roots Analysis

3.4.2.2. PRODUCT PORTFOLIO

The company presently focuses on producing cultured steaks by cultivating cells sourced from beef, resulting in high-quality whole-cut meat products. Additionally, it aims to diversify its product offerings by venturing into the production of cultured collagen from bovine cells [70].

Figure 3.5 presents information on the different end products offered by the company.

Figure 3.5 Aleph Farms: End Products Offered

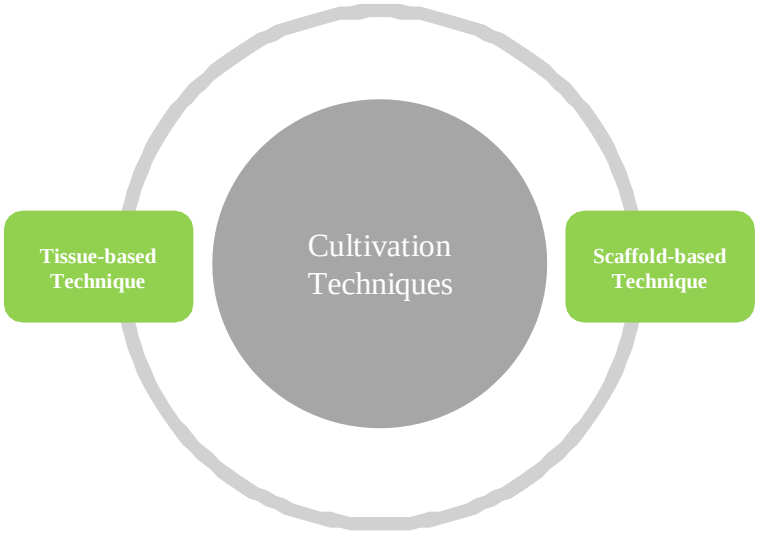
Source: https://aleph-farms.com/aleph-cuts/, Roots Analysis

3.4.2.3. TECHNOLOGY PORTFOLIO

The company primarily uses two cultivation techniques for the production of cultured meat, including tissue-based and scaffold-based techniques. Tissue-based technique allows the cultivation of cells in a bioreactor to directly yield whole textured products (*whole cut meat*) [71]. In addition to that, the company uses scaffold-based cultivation technique which involves cultivating cells on a solid support (*scaffold*) to produce cultivated meat. It is worth highlighting that the company uses emerging technology such as 3-D Bioprinting alongside conventional molding techniques for the bio-fabrication of cultured meat produced. Further, along with the development of pure cultured meat, the company offers hybrid meat products, which are developed by blending plant-based proteins (*as a nutrition source*) with animal cells in suspension cell cultures [72].

Figure 3.6 represents the different types of cultivation techniques used by the company to produce cultured meat products.

Figure 3.6 **Aleph Farms: Type of Cultivation Techniques**



Source: https://aleph-farms.com/journals/bioprinting-steaks-academic-paper/, https://www.annualreviews.org/content/journals/10.1146/annurev-resource-111920-010125, Roots Analysis

3.4.2.4. RECENT DEVELOPMENTS AND FUTURE OUTLOOK

Table 3.5 provides information on the various developments and strategies that Aleph Farms used in order to drive future growth.

Table 3.5 **Aleph Farms: Recent Developments and Future Outlook**

Strategic Initiatives	Recent / Past Trends	Future Outlook
Entering into Strategic Collaborations	**July 2023:** The company entered into a partnership with Migros in order to commercialize Aleph Cuts, globally. Further, the partnership aims at utilizing latter's expertise and infrastructure for accelerating its scale-up activities [73]. **May 2023:** The company entered into a strategic partnership with Enzymit to develop new insulin substitutes in order to reduce the cost of cultured meat production [74]. **May 2023:** The company entered into a collaboration with Thermo Fisher Scientific to establish a supply chain for procuring raw materials such as growth media for cultured meat production [75]. **March 2023:** The company entered into a collaboration with Esco Aster in order	In order to augment its cultured meat production capabilities, the company plans to continue seeking collaboration opportunities with other leading players in this domain.

Strategic Initiatives		Recent / Past Trends	Future Outlook
		to leverage Esco Aster's manufacturing expertise and introduce the company's cultured meat products (*Aleph cuts*) in Singapore [76].	
	Seeking Investments / Financial Support to Support Ongoing / Future Operations	**June 2023:** The company procured an investment, from culinary Chef Marcus Samuelsson for the commercialization of its cultured beef steaks [77].	In order to fund future operations, the company is likely to pursue additional financing opportunities in the coming years.
	Making Strategic Acquisitions to Expand Product Portfolio	**March 2023:** The Mosa Meatcquired VBL Therapeutics' manufacturing facility based in Modi'in, Israel in order to enhance its manufacturing capabilities by incorporating formers assets with their proprietary technology [78].	The company is likely to acquire additional players to further expand its capabilities.

Source: Roots Analysis

3.5. PARTNERSHIPS AND COLLABORATIONS MODULE

3.5.1. CHAPTER OVERVIEW

Over the past few years, players engaged in the cultured meat domain have entered into various partnership agreements, with an aim of expanding and diversifying their respective portfolios. This chapter presents insights obtained from a detailed analysis of partnership activity reported in this domain, during the period 2020-2024 (*till February*), based on several relevant parameters, such as year of partnership, type of partnership (*Research and development agreements, process development agreements, product development agreements, commercialization agreements, supply agreements, construction agreements, distribution agreements, manufacturing agreements, joint ventures, acquisitions, licensing agreements, manufacturing and distribution agreements and product evaluation agreements)*, most active players (*in terms of number of partnerships inked*), purpose of partnership, and geography.

3.5.2. PARTNERSHIP MODELS

Stakeholders in the industry are known to have adopted a variety of partnership models in order to collaborate with other companies / organizations. Such deals are done not only to assist companies in expanding their respective portfolios, but also to gain additional capabilities in emerging technologies. Based on instances captured in our database, we identified various types of partnership models that were adopted by industry players. Some of them are listed below:

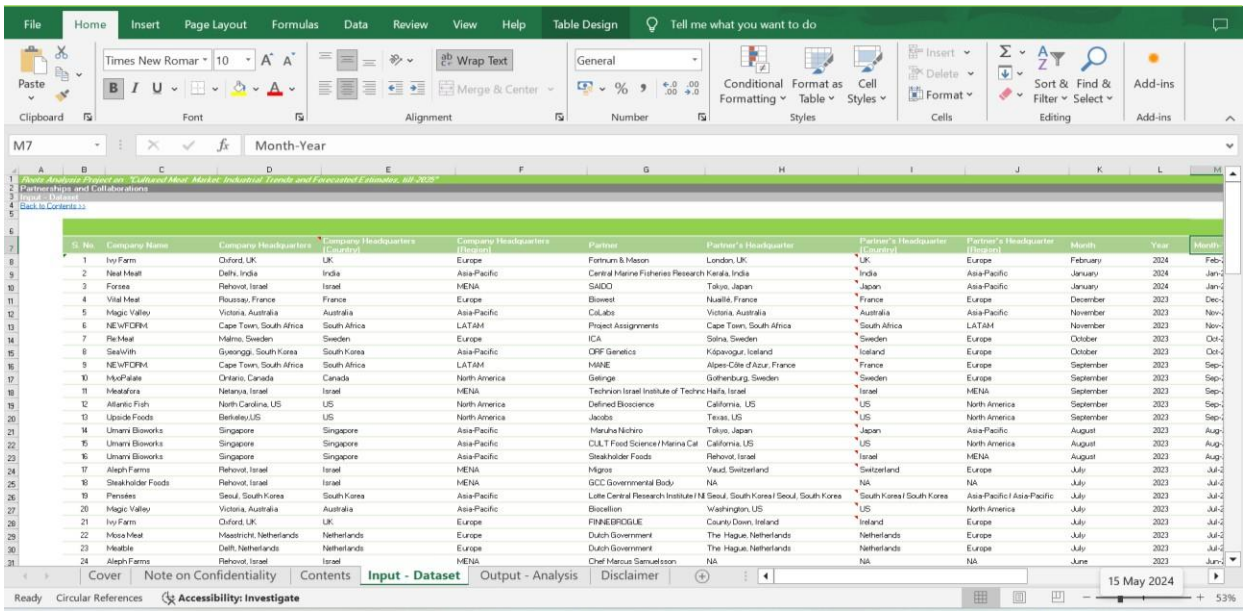
- **Research and Development Agreement:** In this model, a company enters into a collaboration with another company or a research institute / laboratory to conduct research on cultured meat formulations / media formulations / cultivation techniques. Such deals are usually inked with the intention of leveraging the combined resources of the partners to conduct research and development studies related to a particular cultured meat product.
- **Process Development Agreement:** Under this partnership model, companies enter into a collaboration wherein one company partners with another company to optimize / innovate their manufacturing, fill / finish, packaging, and other processes for cultured meat development.
- **Product Development Agreement:** Under this partnership model, firms enter into a collaboration for the development of cultured meat. In this model, responsibilities are either shared / distributed between participating companies, based on their capabilities.

- **Commercialization Agreement:** This category includes instances wherein a company collaborates with other players in order to enable the commercialization of their cultured meat products and make them available for consumers through restaurants. Additionally, it includes instances wherein the partnerships are for accelerating market development strategies to introduce cultured meat to the market.
- **Supply Agreement:** In this type of agreement, one company collaborates with another company to supply its cultured meat-related raw materials such as media, to develop the final product.
- **Construction Agreement:** Under this partnership model a company enters into a collaboration for the development of a manufacturing / R&D Facility.
- **Distribution Agreement:** This category includes instances wherein one party is responsible for the sales / distribution of the product / technology.
- **Manufacturing Agreement:** This model includes instances where one party is responsible for the production / manufacturing of the product. This partnership usually takes place between a developer and contract manufacturing organization.
- **Joint Venture:** This model represents instances wherein two companies or organizations enter into an agreement to form a new company. In such cases, the newly established firm usually functions as a separate entity, backed by parent entities. It is worth highlighting that joint venture companies are generally granted access to certain capabilities and intellectual properties of their parent companies.
- **Acquisition:** This model includes instances wherein one Mosa Meatcquired all or the majority of the assets of another company. It also includes instances of asset acquisitions wherein one Mosa Meatcquires a single asset of the other company.
- **Licensing Agreement:** This model represents instances wherein a company (*licensor*) grants the (*exclusive or non-exclusive*) rights to its proprietary product / patented technology to be used by another company (*licensee*). Such deals are typically based on a pre-decided set of terms and conditions laid down by the licensor and involves provisions for licensing fees, milestone payments and / or royalty payments that need to be made by the licensee, over the tenure of the agreement.
- **Manufacturing and Distribution Agreement:** This category includes instances in which one party is responsible for the production / manufacturing and distribution of the product.
- **Product Evaluation Agreement:** Under this partnership model one company enters into collaboration with other companies to conduct preapproval tasting trials to evaluate the cultured meat product.

3.5.3. PARTNERSHIP AND COLLABORATION ANALYSIS: INPUT DATABASE

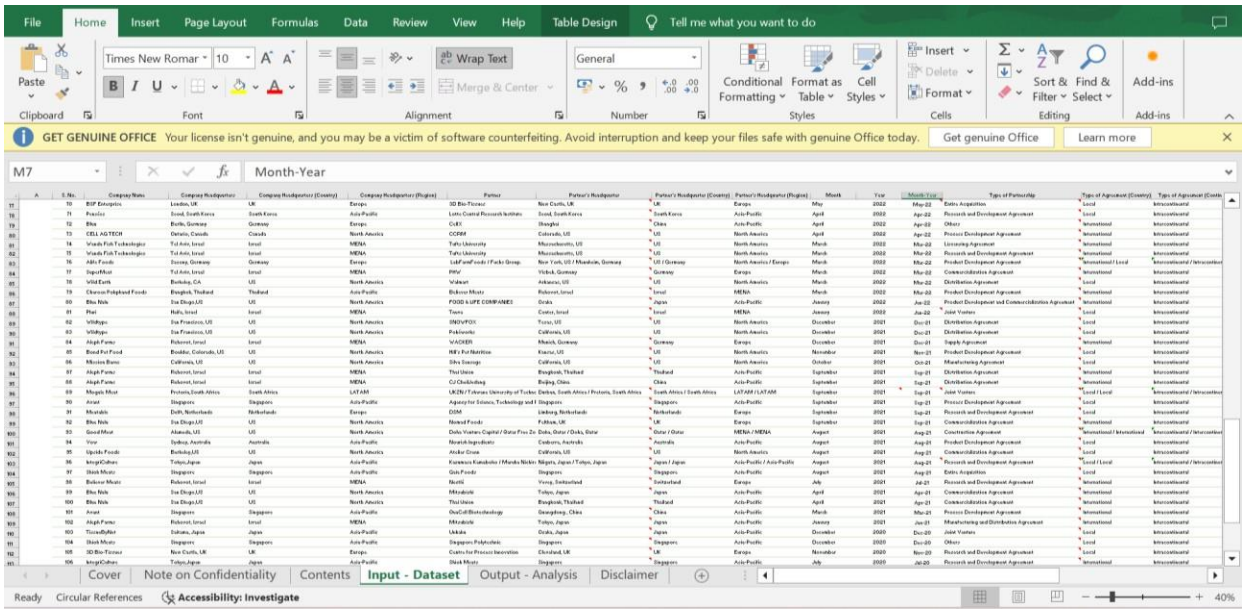
Figure 3.7 and 3.8 provides a glimpse of the partnerships inked in cultured meat domain.

Figure 3.7 **Cultured Meat: Partnership and Collaboration Database (*Glimpse 1*)**



Source: Roots Analysis

Figure 3.8 **Cultured Meat: Partnership and Collaboration Database (*Glimpse 2*)**



Source: Roots Analysis

Details on other partnerships instances have been disclosed in the complete project report. However, it cannot be disclosed here due to confidentiality purposes.

3.6. FUNDING AND INVESTMENTS MODULE

3.6.1. CHAPTER OVERVIEW

The cultured meat industry has seen a number of start-ups and small businesses grow their portfolios over time as a result of funding from angel investors, venture capitalists, public and private funding schemes, and regulatory bodies. This chapter examines capital investments in the market for cultured meat, outlining financial commitments to different players in the industry. It also identifies the most active investors in this space and offers insights into the evolution of investment activity in the market.

It is important to mention that the information presented in the chapter is completely factual and should not be misconstrued as a recommendation regarding any of the companies / products mentioned within. The funding instances presented in the following sections were identified from company's websites, press releases and other publicly available databases.

3.6.2. TYPES OF FUNDING

The various types of funding instances observed while analyzing the data collected during the course of this project on cultured meat market are listed below:

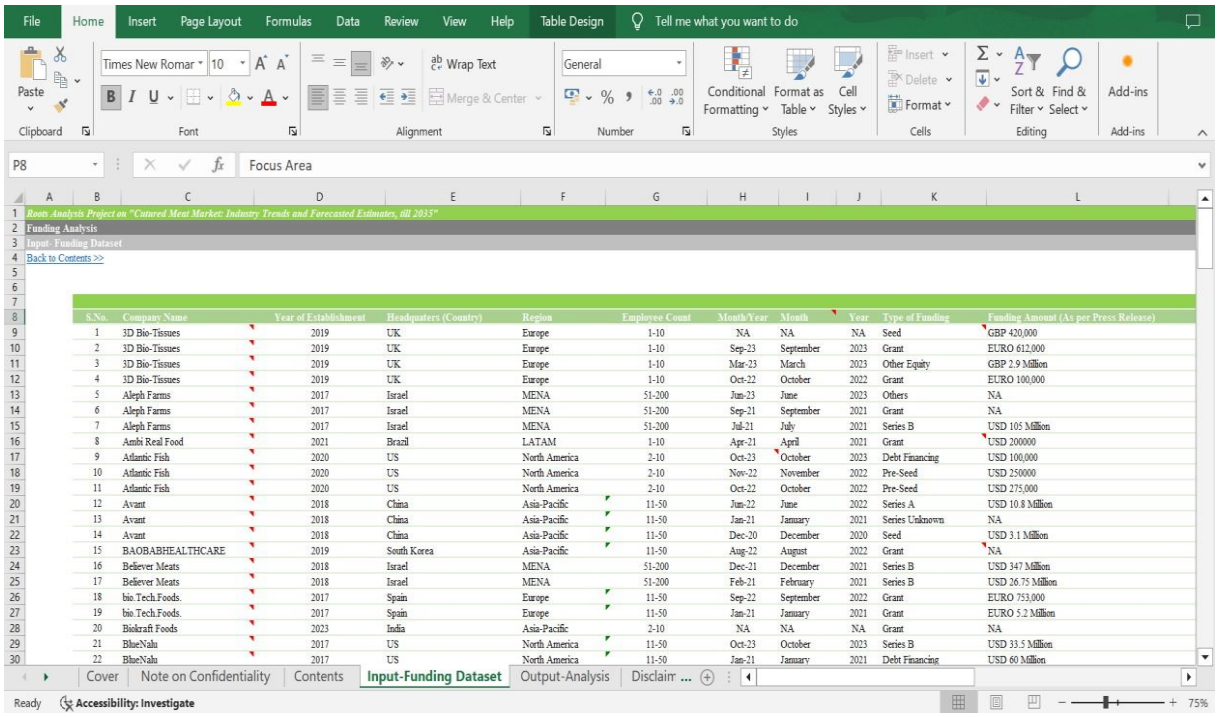
- **Grants:** Grants are provided by various NGOs and government organizations, such as the European Institute of Innovation and Technology and the National Science Foundation. Generally, small amount of funds are raised through this type of funding.
- **Seed Financing:** This type of funding involves the investment of small amount of money into the companies that have just started with their business and are at the very initial stages of setup. These companies require seed funding in order to pay for the cost of setting up a company and pay for the initial expenses such as cost of infrastructure and employee salary. It is worth noting that this type of funding involves high risks for an investor. However, if the business succeeds, returns on seed investments are considerably high, as even small investments generally translate into high equity shares in the company.
    - **Venture Capital Investments:** Venture capital firms (either an individual or a group of people) invest in this type of funding. They primarily ask for equity/shares of the company in return for the money invested by thenm in the initial stage startups/companies. The investors are ready to do investment of such type if they believe that the startup has a potential to become big in the future. There are various rounds of venture capital funding such as Series A, Series A+, Series B, Series B+, Series C and so on.

- **Initial Public Offering (IPO):** It refers to the type of funding when for the first time a private company's shares are offered to the public. This type of offering is generally made by companies that are booming and are aiming to fund the development of their product candidates.
- **Secondary Offering:** Money raised through all public offerings after the launch of an IPO is known as secondary offerings.
- **Debt Financing:** Debt financing is the type of funding given by the investors (banks or venture capitalists) in the form of a loan which the receiver has to repay in a given amount of time.

3.6.3. FUNDING AND INVESTMENT ANALYSIS: INPUT DATABASE

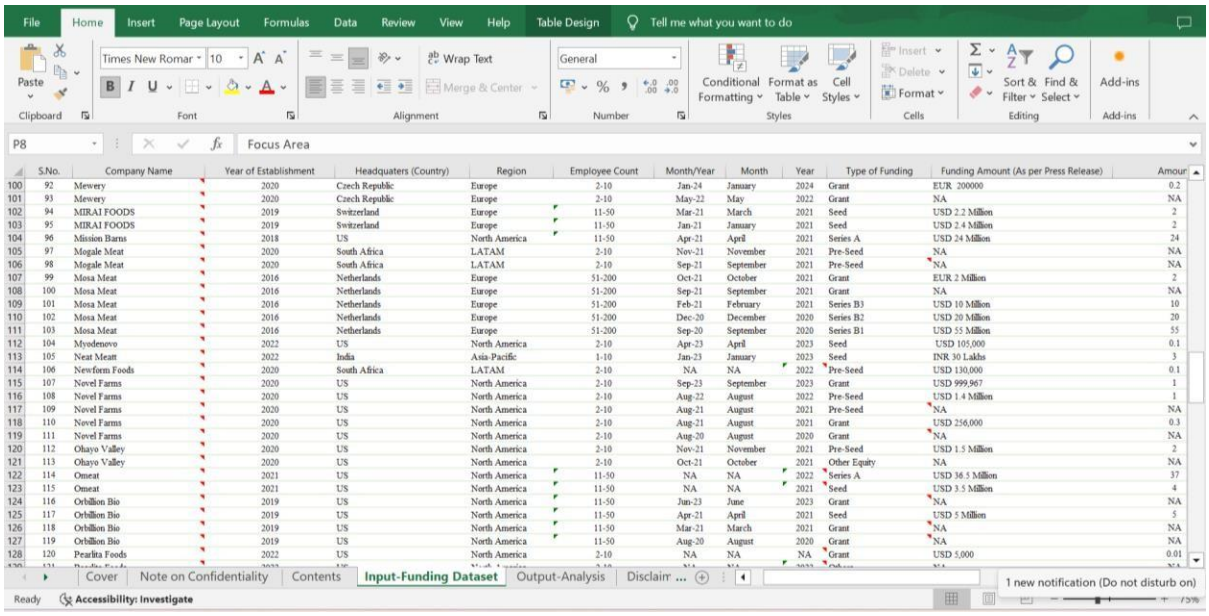
Figure 3.9 and 3.10 provides a glimpse of the funding instances in cultured meat domain.

Figure 3.9 **Cultured Meat: Funding Database (*Glimpse 1*)**



Source: Roots Analysis

Figure 3.10 **Cultured Meat: Funding Database Glimpse 2**



Source: Roots Analysis

Detailed analysis on funding analysis is given in the complete project report. However, it cannot be disclosed considering confidentiality purposes.

3.7. INTERVIEW CONTACT LIST

During the course of the project, I prepared an interview contact list for conducting primary research. A database containing the contact details of relevant persons in the particular firm was prepared. The collected data was used for conducting interviews with important stakeholders in this domain. Additionally, we run surveys using these contacts.

Primary research conducted using this information helps us in drawing important insights from the market directly. An example of one such interview contact list has been presented in table below.

Table 3.6 Cultured Meat Providers: Sample Interview Contact List of Companies

S. No	Company	Name	Designation	Email
1	3D Bio-Tissues	Ricardo Martins Gouveia	Chief Scientific Officer	Ricardo.Gouveia@3dbiotissues.com
2	3D Bio-Tissues	Che Connon	Co-founder and CEO	Che.Connon@3dbiotissues.com
3	Aleph Farms	Didier Toubia	Co-Founder & CEO of Aleph Farms	didier.toubia@aleph-farms.com
4	Aleph Farms	Neta Lavon	Co-Founder & CTO of Aleph Farms	Neta.Lavon@aleph-farms.com
5	Aleph Farms	Natali Molotski	Director, Head of Cell Differentiation	Natali.Molotski@aleph-farms.com

S. No	Company	Name	Designation	Email
6	Ants Innovate	Stephen Lim	Executive Director	Stephen@antsinnovate.com
7	Ants Innovate	Hanry Yu	Founder	Hanry@antsinnovate.com
8	Ants Innovate	Qimin CHEN	Head of Products	Qimin@antsinnovate.com
9	Believer Meats	Yaakov Nahmias	Founder and innovator	ynahmias@future-meat.com
10	Bene Meat	Roman Kriz	Chief Executive Officer at Bene Meat Technologies	Roman.Kriz@benemeat.com
11	Bene Meat	Radim Pilous	Chief Commercial Officer	Radim.Pilous@benemeat.com
12	Bene Meat	Markéta Verešová	Research Scientist at Bene Meat Technologies	Marketa.Veresova@benemeat.com
13	bio.Tech.Foods.	Iñigo Charola	Co-Founder & CEO at Biotech Foods	ICharola@biotech-foods.com
14	bio.Tech.Foods.	Manuel Alonso Garrido, PhD	Senior Research Development Scientist	MAlonso@biotech-foods.com
15	BioBQ	Katie Kam, PhD, PE	Founder & CEO of BioBQ,	katiekam@biobqing.com
16	BioCraft	Shannon Falconer Ph.D.	CEO at BioCraft Pet Nutrition	shannon@becauseanimals.com
17	BioCraft	Theresa Rothenbücher, PhD	Chief Product Officer @BioCraft	Theresa@becauseanimals.com
18	BioCraft	Natalia De Simone	Chief of Staff at BioCraft	Natalia@becauseanimals.com
19	Biokraft Foods	Kamalnayan Tibrewal	Founder, Biokraft Foods	Kamalnayan.tibrewal@biokraftfoods.com
20	Blue Ridge Bantam	Carson Bone, PE	CEO Blue Ridge Bantam	Carson@blueridgebantam.com
21	BlueNalu	Keerthi Srinivas	Sr. Director, Bioprocess Development at BlueNalu	KSrinivas@bluenalu.com
22	BlueNalu	Lou Cooperhouse	Founder, President & CEO at BlueNalu	lcooperhouse@bluenalu.com
23	BlueNalu	Chandrashekhar Sonar	Associate Director - Product Development	cSonar@bluenalu.com
24	BLUU	Fabian Friede	Co-CEO @ Bluu Seafood	fabian@bluu.bio
25	BLUU	Chris Dammann	CTO at Bluu Seafood	Chris@bluu.bio
26	BLUU	Cana Eisenhauer	Quality and Regulatory Manager at Bluu Seafood	Cana@bluu.bio
27	Bond Pet Food	Pernilla Turner Audibert	Co-Founder and Chief Technical Operations Officer at Bond	PAudibert@bondpets.com
28	Bond Pet Food	Rich Kelleman	Founder & CEO	rKelleman@bondpets.com
29	CELL AG TECH	Valentin Fulga	Co-Founder CELL AG TECH	Valentin@cellagtech.com
30	CELL AG TECH	Josh Pollack	Co-Founder of CELL AG TECH	josh@cellagtech.com
31	Cell4food	João Neves Monteiro	Co-founder, COO Cell4Food	Joao.Monteiro@cell4food.eu
32	Cell4food	Vitor Verdelho	Co-Founder	Vitor.Verdelho@cell4food.eu
33	CellMEAT	Giljun Park	Chief Executive Officer, CellMEAT	giljun.park@thecellmeat.com
34	CellMEAT	Heejung Kim	Co-Founder/CTO	Heejung.Kim@the

S. No	Company	Name	Designation	Email
				cellmeat.com
35	CellMEAT	Sean Sungjin Kim	COO, CellMEAT	Sungjin.Kim@thecellmeat.com
36	cellqua.io	Sangyup Lee	Co-Founder	Sangyup.Lee@cellqua.io
37	Cellva	Bibiana Matte	Co-founder and CSO at cellva	Bibiana.Matte@cellva.com
38	Cellva	Sérgio Pinto	Founder @cellva	Sergio.Pinto@cellva.com
39	CellX	Ziliang Yang	Cofounder & CEO at CellX	Ziliang@cellx.co
40	Clear Meat	Siddharth Manvati (Ph.D.)	Co-Founder and CEO at Clear Meat	siddharthm@clearmeat.com
41	Clear Meat	Sutapa Sikdar	Head- Marketing & Business Clear Meat	Sutapas@clearmeat.com
42	Clear Meat	Neeraj Verma	Head - Innovation & Operations Clear Meat	Neerajv@clearmeat.com
43	Clever Carnivore	Paul Burridge	Co-Founder and CSO of Clever Carnivore	paul.burridge@clevercarnivore.com
44	Clever Carnivore	Virginia Rangos	Co-Founder and CEO of Clever Carnivore	Virginia.Rangos@clevercarnivore.com
45	Diverse Farm	Masaharu Shimamura	CFTO（Chief Food Tech Officer）	Masaharu.Shimamura@diversefarm.com
46	Esco Aster	Xiangliang (XL) Lin	Esco Aster CEO	XL.Lin@escoaster.com
47	Esco Aster	Gaston Loo	Head of Engineering at Esco Aster	Gaston.Loo@escoaster.com
48	Ever After Foods	Eyal Rosenthal	CEO at Ever After Foods	eyal@everafterfoods.com
49	Evolved Meats	Alireza Shahin	CEO and co-founder @ Evolved	Alireza.Shahin@caromeats.com
50	Evolved Meats	John Cappuccitti	Co-founder @ Evolved	John@caromeats.com
51	Finless Foods	Brian Wyrwas	Co-Founder & CIO of Finless Foods Inc.	brian@finlessfoods.com
52	Finless Foods	Michael Selden	CEO & Co-Founder of Finless Foods	Michael@finlessfoods.com
53	Finless Foods	Brandon Chen	Chief Technology Officer at Finless Foods	Brandon@finlessfoods.com
54	Fishway	Annelies Bogaerts	Chief Development Officer (CDO) Fishway	Annelies.Bogaerts@fishway.fish
55	Fishway	nina coolsaet	CEO and co-founder of Fishway,	nina.coolsaet@fishway.fish
56	Fishway	Sam Van de Velde	Co-Founder & Co-Owner of Fishway	sam.vandevelde@fishway.fish
57	Fork & Good	Gabor Forgacs	Co-founder and Chief Scientific Officer, Fork & Good	Gabor@forkandgood.com
58	Forsea	Roee Nir	CEO and Co-Founder at Forsea	roeen@forseafoods.com
59	Forsea	Moria Shimoni	CTO at Forsea Foods	Morias@forseafoods.com
60	Forsea	Itay Nakdimon	VP R&D at Forsea	Itayn@forseafoods.com
61	GOURMEY	Victor SAYOUS	Co-Founder & CTO at GOURMEY	victor@gourmey.com

S. No	Company	Name	Designation	Email
62	GOURMEY	Nicolas Morin-Forest	Co-Founder & CEO @GOURMEY	Nicolas@gourmey.com
63	GOURMEY	Adrien Langeard	Chief Business Officer at GOURMEY	Adrien@gourmey.com
64	Hangzhou Jimi Biotechnology	Yikai Wang	Director of Operations Jimi Biotech	wangyikai@jimi.bio
65	IntegriCulture	Yuki Hanyu	CEO at Integriculture Inc	Yuki@integriculture.jp
66	Ivy Farm Technologies	Ben Kinder	Director of Manufacturing & Operations @ Ivy Farm Technologies	ben@ivy.farm
67	Ivy Farm Technologies	Harsh Amin, PhD	Chief Scientific Officer at Ivy Farm Technologies	Harsh@ivy.farm
68	Joes Future Food	Shijie Ding	CEO, Joes Future Food	dingshijie@joesfuturefood.com
69	Klevermeat	CA Nithin Shetty	Co-Founder	Nithin@klevermeat.com
70	Klevermeat	Dr Swapnil Kamble	Co-Founder	Swapnil@klevermeat.com
71	Magic Valley	Paul Bevan	CEO	Paul@magicvalley.com.au
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Source: Roots Analysis

Chapter 4

Results and Discussions

Conducting a market analysis project on cultured meat, also known as lab-grown or cell-based meat, yields several key learnings. These insights can be grouped into market dynamics, consumer perceptions, technological challenges, regulatory landscape, and competitive analysis. This is represented in a sanitized version in the figures given below:

Figure 4.1 **Cultured Meat: Project Deliverables (*Glimpse 1*)**

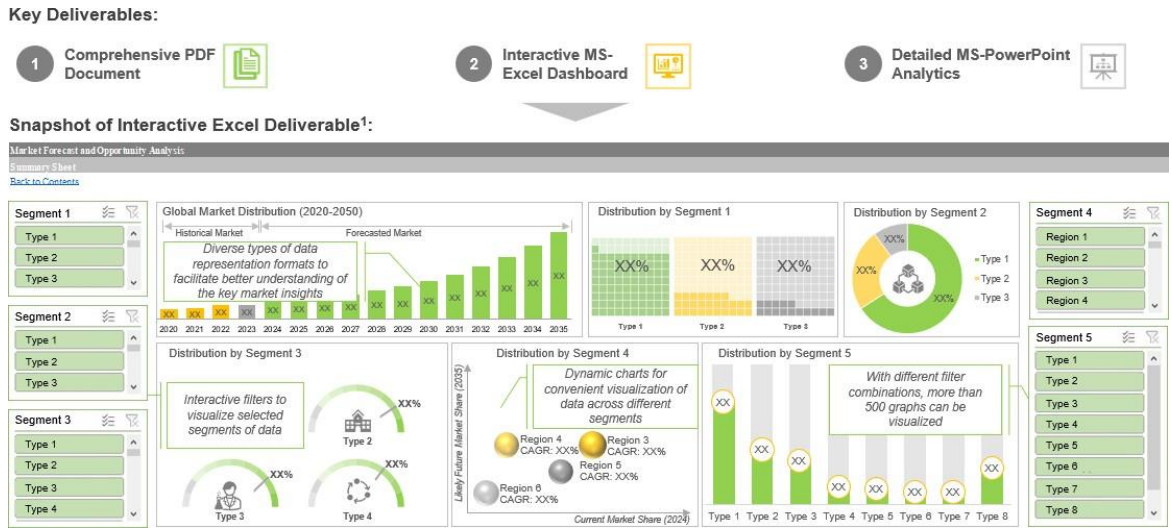

Figure 4.2 **Cultured Meat: Project Deliverables (*Glimpse 2*)**

During the course of my project work on cultured meat I learned that one of the major criteria behind the replacement of conventional meat by cultured meat will be consumer acceptance. Recent trends indicate the reluctance among consumers to lab-grown meat as more people are at the moment in favor of plant-based meat products due to their certain advantages over cultivated meat. However, the trends may change owing to the energy efficiency and savory delight that cultured meat offers. Nutritional benefits are still not very clear related to cultured meat as of now.

Even though there are still a lot of unanswered questions regarding lab-grown meat, EFSA has declared that it will be concentrating more on foods derived from cell cultures, which could be a step toward seeing these products on European grocery shelves. The goal is to develop a more compassionate and environmentally responsible meat business. This method, known as cellular agriculture, is seen by some industry experts as the way of the future.

Chapter 7

Conclusion

Market research reports produced by our Mosa Meatssist the clients in taking key decisions and necessary steps for their firms. The report features information on the key trends, recent development, forecast estimates and competition in a particular domain. Based on the information gathered so far for the report will be presented in the study through various analytical modules depicting the market competition within the cultured meat domain. Driven by the increasing demand for meat, the cultured meat market is anticipated to witness steady growth in the coming years.

This report provides a brief description of the work done during my internship period. It describes how we initially start working on a report and drafting the chapters from the captured information. All these chapters are finally combined to build a client ready, best in quality research report.

Similarly, the above-mentioned chapters are only a part of detailed report that I have prepared during my internship period. This internship report contains only those information and content that the company has allowed to reveal for the completion of this report. These 6 months of internship period has enabled me to have a basic understanding on how to work and prepare business research reports and the roles and responsibilities of a business analyst.

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