

Cellular Agriculture Market Report: Trends, Forecast and Competitive Analysis to 2031

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Abstracts

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Cellular Agriculture Trends and Forecast

The future of the global cellular agriculture market looks promising with opportunities in the dairy, meat, egg, and food processing markets. The global cellular agriculture market is expected to grow with a CAGR of 38.2% from 2025 to 2031. The major drivers for this market are the rising global population, changing dietary patterns, and increasing demand for protein-rich food.

Lucintel forecasts that, within the type category, cellular agriculture products are expected to experience higher growth over the forecast period.

Within the application category, the meat industry is expected to witness the highest growth.

In terms of regions, APAC will remain the largest region over the forecast period.

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Emerging Trends in the Cellular Agriculture Market

The cellular agriculture sector is evolving rapidly, driven by consumer demand for sustainable food systems, technological innovations, and regulatory advancements.



Sustainability and Environmental Impact: The shift toward cellular agriculture is primarily driven by its potential to reduce the environmental footprint of traditional agriculture. Cultured meat, dairy, and seafood production require fewer resources, including land, water, and feed, compared to conventional livestock farming. This trend is transforming the food industry by providing a more sustainable way to meet global protein demand.

Regulatory Advances: Regulatory frameworks for cellular agriculture are evolving as governments work to establish standards for cultured food products. Countries like the U.S. and Singapore are leading in terms of regulatory approvals, while others like the EU are still developing policies. These advances are critical in ensuring product safety and enabling the large-scale commercialization of cultured products.

Technological Innovation in Bioreactors: Advances in bioreactor technology are essential for scaling cellular agriculture. Innovations aim to reduce costs and improve efficiency in cell cultivation, which is currently one of the most expensive aspects of production. Companies are exploring more cost-effective growth media and bioreactor designs, leading to improved scalability and affordability.

Consumer Acceptance and Awareness: Consumer acceptance of cellular agriculture products is still a barrier. As education around the health, environmental, and ethical benefits of cultured meat and dairy grows, more consumers are becoming open to trying these products. Consumer awareness campaigns and product tastings are helping shift perceptions, especially as products become more available and mainstream.

Investment in Scalable Infrastructure: Significant investments are being made into the infrastructure needed to scale cellular agriculture. Large-scale bioreactors, research facilities, and production plants are essential to meet the increasing demand. Companies are working to reduce capital costs, streamline supply chains, and improve production efficiency, which will allow cellular agriculture products to be more affordable for consumers.

Cellular agriculture is set to play a transformative role in addressing the growing global demand for sustainable, ethical, and nutritious food. With its reduced environmental impact, advancements in regulatory frameworks, and innovations in bioreactor



technology, the industry is well-positioned for significant growth. However, the successful scaling of production and consumer acceptance remain key challenges. As infrastructure investments increase and awareness campaigns educate consumers about the benefits of cultured products, the sector is likely to see broader adoption. With continued innovation and collaboration, cellular agriculture offers a promising path toward a more sustainable and resilient food system.

Recent Developments in the Cellular Agriculture Market

The field of cellular agriculture is witnessing rapid advancements, driven by regulatory breakthroughs, innovations in production processes, and strategic partnerships. As cultured meat, dairy, and seafood products receive regulatory approval for sale, the industry is moving closer to widespread commercialization. Key developments, such as the scaling of production facilities, breakthroughs in growth media, and collaborations with traditional food companies, are helping make these products more affordable and accessible. Additionally, focused efforts to shape public perception and highlight the benefits of cellular agriculture will be essential for gaining consumer trust and acceptance in the global marketplace.

Regulatory Approvals and Commercialization: The approval of cultured meat for sale, first in Singapore and later in the U.S., marks a pivotal moment for cellular agriculture. These regulatory wins set the stage for the commercialization of cultured products globally. This development is not only a technical achievement but also a significant legal milestone that opens doors for further innovation and market expansion.

Investment in Scalable Production Facilities: Companies are focusing on building large-scale production facilities to drive down the cost of cultured products. These facilities aim to scale up the production of cultured meat, dairy, and seafood, enabling mass-market availability. This move is crucial for achieving price parity with traditional meat products, which is necessary for widespread consumer adoption.

Breakthroughs in Growth Media: Innovations in the development of costeffective, animal-free growth media are key to making cellular agriculture more affordable and scalable. Companies are working to reduce the reliance on expensive, animal-derived ingredients like fetal bovine serum (FBS), replacing them with plant-based or synthetic alternatives that lower production costs.



Partnerships with Traditional Food Companies: Established food giants, such as Tyson Foods and Nestl?, are entering partnerships with cellular agriculture startups. These partnerships help bring technical expertise, financial backing, and distribution channels to the emerging industry. The involvement of traditional food companies lends credibility to the sector and accelerates product development and commercialization.

Public Perception and Marketing: Efforts to improve consumer perception of cultured products are a key focus of companies in cellular agriculture. Marketing campaigns highlighting the environmental, ethical, and health benefits of cultured meat are crucial for increasing public acceptance. Demonstrations and taste tests are becoming more common as companies aim to bridge the gap between innovation and consumer willingness to try new food products.

Cellular agriculture is poised to revolutionize the food industry through regulatory advancements, scalable production, and technological innovations. The sector's future success will depend on continued progress in reducing production costs, expanding partnerships with established food companies, and improving consumer understanding and acceptance. As public perception shifts and cultured products become more mainstream, the industry is well-positioned to meet the growing global demand for sustainable, ethical, and health-conscious food alternatives. With these critical factors in play, cellular agriculture is set to play a pivotal role in the future of global food production.

Strategic Growth Opportunities for Cellular Agriculture Market

As cellular agriculture continues to emerge as a transformative force in the food industry, several key growth opportunities can drive its expansion. From scaling production facilities to meet growing demand, to entering new global markets and developing a variety of alternative proteins, the sector is poised for rapid growth. Additionally, educating consumers and integrating advanced biotechnology innovations will be crucial in shaping the future of this industry. These opportunities not only promise to make cellular agriculture more accessible and cost-effective but also pave the way for a more sustainable and diverse food system.

Scaling Production Facilities: Building large-scale production facilities is a key growth opportunity, enabling the industry to meet rising demand. By reducing production costs, companies can drive down retail prices, making cellular



products more accessible to consumers. Scaling production is essential for achieving economies of scale and competing with traditional meat industries.

Expansion into Global Markets: As cellular agriculture becomes more viable, expanding into new geographic markets presents a huge opportunity. Countries with high demand for protein, such as China and India, could be key markets. Local production and distribution strategies are critical for making these products affordable and accessible to international consumers.

Development of Alternative Proteins: Developing a range of alternative proteins, from plant-based to cultured animal products, offers significant growth potential. Expanding the variety of products, including seafood, dairy, and plant-based meat substitutes, allows companies to cater to a broader consumer base and meet diverse dietary preferences.

Investment in Consumer Education: Investing in consumer education to build trust and understanding of cellular agriculture products can drive long-term growth. Campaigns to address concerns over safety, ethics, and environmental impact are essential for increasing market acceptance and boosting demand for cultured products.

Integration of Biotechnology Innovations: Incorporating cutting-edge biotechnological innovations into the production process, such as CRISPR and advanced cell culturing techniques, presents significant opportunities to improve the efficiency and cost-effectiveness of cellular agriculture. These innovations can lead to faster production times, better-quality products, and reduced costs, driving further industry growth.

The growth potential of cellular agriculture lies in its ability to scale production, diversify protein offerings, and expand into new markets. By leveraging cutting-edge biotechnology, educating consumers, and addressing key challenges such as affordability and accessibility, the industry can meet the rising demand for sustainable food solutions. As these opportunities are realized, cellular agriculture has the potential to reshape the global food landscape, providing healthier, more ethical, and environmentally friendly alternatives to traditional meat products. The next few years will be critical in determining how quickly these innovations can become mainstream.

Cellular Agriculture Market Driver and Challenges



The growth of cellular agriculture is shaped by various technological, economic, and regulatory factors. The major drivers include technological advancements, consumer demand for sustainable products, and regulatory approvals. Challenges, on the other hand, include high production costs, consumer acceptance, and the complexities of scaling up production. Addressing these drivers and challenges will determine the pace and extent of cellular agriculture's market penetration.

The factors responsible for driving the cellular agriculture market include:

Technological Advancements: Breakthroughs in biotechnology, cell culture techniques, and bioreactor technology have dramatically improved the scalability and efficiency of cellular agriculture. These advancements are reducing production costs and making cultured products more viable for mass production.

Rising Consumer Demand for Sustainability: Consumers are increasingly concerned about the environmental impact of traditional livestock farming, driving demand for sustainable alternatives like cultured meat. This trend supports the growth of cellular agriculture, as it provides a solution to reduce land use, water consumption, and greenhouse gas emissions.

Regulatory Approvals: The successful approval of cultured meat by governments, particularly in the U.S. and Singapore, has opened the door for large-scale commercialization. Regulatory support is crucial for ensuring that these products meet safety standards and can be sold to consumers worldwide.

Investment from Traditional Food Companies: Major food corporations are investing in cellular agriculture to diversify their product offerings and tap into the growing plant-based and cultured food markets. These investments provide crucial financial backing, technical expertise, and distribution channels that accelerate market growth.

Environmental and Ethical Considerations: Cellular agriculture is driven by a desire to reduce animal suffering and provide a more ethical and sustainable method of food production. As consumers become more conscious of the ethical implications of food production, this sector stands to benefit from increased interest.



Challenges in the cellular agriculture market are:

High Production Costs: Despite technological advancements, the cost of growing cultured products remains high. The need for expensive bioreactors, growth media, and cell cultures makes it challenging for producers to scale up production and make these products competitive with traditional meat.

Consumer Acceptance: Many consumers remain hesitant to embrace cultured products due to concerns over safety, ethics, and the unfamiliar nature of labgrown food. Building consumer trust through education and transparency will be essential for overcoming this challenge.

Scalability Issues: Scaling up production to meet global demand presents logistical and financial challenges. Large-scale facilities require significant investment and infrastructure, which may be difficult to achieve without further technological advances or additional regulatory support.

The major drivers of technological advancements, consumer demand for sustainability, and regulatory approval are propelling the growth of cellular agriculture, while challenges related to production costs, consumer acceptance, and scalability remain key obstacles. Addressing these issues will shape the future success of the industry, but overall, these drivers are set to transform the global food system.

List of Cellular Agriculture Companies

Companies in the market compete on the basis of product quality offered. Major players in this market focus on expanding their manufacturing facilities, R&D investments, infrastructural development, and leverage integration opportunities across the value chain. Through these strategies cellular agriculture companies cater increasing demand, ensure competitive effectiveness, develop innovative products & technologies, reduce production costs, and expand their customer base. Some of the cellular agriculture companies profiled in this report include-

108Labs

Air Protein

Perfect Day



New Culture

Real Vegan Cheese

Formo

Imagindairy

Aleph Farms

Geltor

Cell

Cellular Agriculture by Segment

The study includes a forecast for the global cellular agriculture market by type, application, and region.

Cellular Agriculture Market by Type [Analysis by Value from 2019 to 2031]:

Acellular Product

Cellular Product

Cellular Agriculture Market by Application [Analysis by Value from 2019 to 2031]:

Dairy Industry

Meat Industry

Egg Industry

Food Processing Industry

Others



Cellular Agriculture Market by Region [Analysis by Value from 2019 to 2031]:

North America

Europe

Asia Pacific

The Rest of the World

Country Wise Outlook for the Cellular Agriculture Market

The global landscape of cellular agriculture is evolving rapidly, with key players emerging in regions like the United States, China, Germany, India, and Japan. Each country is contributing to the growth of this transformative industry, driven by the need for sustainable and efficient food production methods. From the U.S. leading innovation in cultured meat and dairy to China's focus on scaling production for food security, and Germany's emphasis on sustainability, these nations are at the forefront of cellular agriculture advancements. As the industry gains momentum, regulatory support, technological innovation, and market potential are shaping the future of global food systems.

United States: The U.S. is a global leader in cellular agriculture innovation. Major companies like Eat Just, Upside Foods, and Perfect Day are pioneering the development of cultured meat and dairy products. The U.S. Food and Drug Administration (FDA) has approved the sale of cultured meat, paving the way for commercial sales. Significant investments are being made in scaling production facilities to lower costs and improve the efficiency of bioreactors and growth media. Moreover, the USDA is involved in regulatory frameworks for these products, which will shape the future of the market.

China: China is positioning itself as a strong player in cellular agriculture, with both private companies and government-backed initiatives focusing on the production of cultured meat and dairy. China's government has outlined its support for new technologies, including cellular agriculture, to ensure food security and sustainability. Companies such as Beijing Matrix Meats are



developing products, with a focus on scaling production and reducing costs. As China is one of the largest food markets, the growth of cellular agriculture here presents vast potential for disruption in the global food supply chain.

Germany: Germany is a hub for innovation in cellular agriculture within Europe. Startups like Mosa Meat and BlueNalu are advancing cultured meat and seafood technologies. The country is heavily investing in sustainable food solutions, with cellular agriculture being a key part of its strategy to reduce the environmental impact of meat production. Germany also plays a crucial role in European Union regulatory discussions regarding cultured food products. The government has shown significant support for research and development in food technology, which will help scale these innovations.

India: In India, cellular agriculture is still in its early stages but is receiving growing attention. Companies like AgriProtein and Shiru are exploring the production of protein-rich ingredients through cellular methods. While India's agriculture and food markets are traditional, there is rising interest in innovative solutions to meet the growing protein demand. The Indian government and investors are starting to support cellular agriculture through grants and policies that encourage sustainable food systems. The country's potential as a production hub for affordable cultured proteins is a key area of growth.

Japan: Japan is investing in cellular agriculture to address food security and sustainability concerns. The government and major corporations are supporting the development of cultured meat, with companies like Integriculture and Terasaki Institute leading the charge. Japan's aging population and high food import dependency create a demand for alternative protein sources, making cellular agriculture an appealing solution. The country is also exploring the use of stem cell technology for cultured seafood and meat production. Regulatory progress and public acceptance are crucial factors in driving the success of these innovations.

Features of the Global Cellular Agriculture Market

Market Size Estimates: Cellular agriculture market size estimation in terms of value (\$B).

Trend and Forecast Analysis: Market trends (2019 to 2024) and forecast (2025 to 2031)



by various segments and regions.

Segmentation Analysis: Cellular agriculture market size by type, application, and region in terms of value (\$B).

Regional Analysis: Cellular agriculture market breakdown by North America, Europe, Asia Pacific, and Rest of the World.

Growth Opportunities: Analysis of growth opportunities in different types, applications, and regions for the cellular agriculture market.

Strategic Analysis: This includes M&A, new product development, and competitive landscape of the cellular agriculture market.

Analysis of competitive intensity of the industry based on Porter's Five Forces model.

If you are looking to expand your business in this or adjacent markets, then contact us. We have done hundreds of strategic consulting projects in market entry, opportunity screening, due diligence, supply chain analysis, M & A, and more.

This report answers following 11 key questions:

Q.1. What are some of the most promising, high-growth opportunities for the cellular agriculture market by type (acellular product and cellular product), application (dairy industry, meat industry, egg industry, food processing industry, and others), and region (North America, Europe, Asia Pacific, and the Rest of the World)?

Q.2. Which segments will grow at a faster pace and why?

Q.3. Which region will grow at a faster pace and why?

Q.4. What are the key factors affecting market dynamics? What are the key challenges and business risks in this market?

Q.5. What are the business risks and competitive threats in this market?

Q.6. What are the emerging trends in this market and the reasons behind them?

Q.7. What are some of the changing demands of customers in the market?



Q.8. What are the new developments in the market? Which companies are leading these developments?

Q.9. Who are the major players in this market? What strategic initiatives are key players pursuing for business growth?

Q.10. What are some of the competing products in this market and how big of a threat do they pose for loss of market share by material or product substitution?

Q.11. What M&A activity has occurred in the last 5 years and what has its impact been on the industry?



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