



CURRENT AFFAIRS



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Cultured Meat

According to Data Bridge Market Research's analysis, the global market for **cultured meat** would expand at a CAGR of 15% between 2022 and 2029. The US Food and Drug Administration has now given its blessing for lab-grown beef for the first time. Up to this moment, only Singapore has allowed the selling of goods derived from domesticated meat.

Why in the news:

In its June 2020 Food Outlook Report, the UN Food and Agriculture Organization (FAO) forecast that the world's meat production will decrease to 333 million tonnes in 2020, 1.7% less than in 2019.

The interruption is primarily due to Covid-19, but it has also raised widespread fears about zoonotic illnesses, particularly deadly avian influenza and African swine fever. This will help the market for meat substitutes.

ABOUT CULTURED MEAT

Actual meat that has been generated from animal cells is known as cultured meat. Other names for it include lab-grown meat, cell-based meat, and produced meat. This meat can be made without having to raise and kill animals. Animal cells are grown in a lab to produce cultured meat, which is an alternative to consuming meat from deceased animals. This meat is produced in cell culture as opposed to being raised within an animal's body. It is nutritionally comparable and has a similar flavour, aroma, appearance, and feel to typical animal flesh.

WORLDWIDE SCENARIO

Government support for companies that produce cultured meat is significant everywhere. Among others, the governments of Israel, Japan, and the Netherlands have made investments in clean meat companies.

Additionally, regulatory agencies in countries like the US are choosing how to advertise these products. These programmes demonstrate how the clean meat sector can sustainably feed future generations.

DIFFERENCES BETWEEN CULTURED MEAT AND MEAT FROM PLANT SOURCES

While cultured meat is produced by cultivating cells in a lab, plant-based meat is produced utilising plant sources like soy or pea protein.

To feed more people, reduce the risk of zoonotic diseases, and diminish the impact of meat consumption on the environment, both initiatives aim to produce meat alternatives.

DIFFERENCE BETWEEN TRADITIONAL BEEF AND CULTURED MEAT

- With the Exceptng directly from animals, cultured or cultivated meat is identical to regular meat in terms of cellular structure.
- In comparison to conventional cattle, raised beef may reduce land use by more than 95%, greenhouse gas emissions by 74–87%, and nutrient pollution by 94%.
- Because it is grown in sanitary facilities, the possibility of cultured beef being contaminated by pathogens like salmonella and E coli is considerably reduced.
- Unlike animals raised for meat, it doesn't require antibiotics, which lessens the risk that developing antibiotic resistance poses to the general public health.

THE PROCESS OF LAB-GENERATED MEAT

- Lab-grown beef is created using the more than 100-year-old technique of in vitro muscle tissue growth.
- The initial step in the process is to separate a small number of cells from premium livestock animals, like a cow or chicken, and identify which of those cells have the can and make delectable meat food products.
- The cells are then put in a clean, controlled environment and given the essential nutrients they need to grow normally.

- In essence, the environment found inside an animal's body can be mimicked in order to cell proliferation.
- When the meat is prepared, we harvest it, process it according to standard procedures, and then package, cook, or otherwise render the meat fit for consumption.

THE SIGNIFICANCE OF CULTURED MEAT

- Among the benefits of clean meat that might be realised are sustainability, environmental friendliness, animal welfare, food safety, and inventive cuisine. Furthermore, cell-based beef claims to be better for the environment.
- The necessity for modern factory farming and issues like animal maltreatment, e. coli and salmonella diseases, and meat laced with antibiotics might be eliminated.
- Salmonella: The name given to a group of bacteria. It is the US country with the highest frequency of foodborne disease. Raw beef, raw eggs, raw poultry, and unwashed fruits and vegetables are all sources of salmonella.
- 'E. coli' (Escolicchia coli) Typically, E. coli poses no health risks. Consuming meals laced with germs can result in E. coli illnesses. To reduce the risk of illness and food poisoning, handle food properly. Avoid raw milk and fluids, properly cook your meat, wash your produce before you eat it or cook it, and wash your fruits and veggies.

ADVANTAGES OF CULTURED MEAT

The E. coli bacteria, which is present in animal faeces, and other contaminants that we can come into contact with at a meat processing facility are said to be substantially less likely to be present in cultured meat, according to its supporters.

Antibiotic use is declining

In the past, animals were regularly given antibiotics to maintain their health. When an infection is resistant to antibiotic treatment, it cannot be adequately treated.

Less environmental impact

As the world's demand for meat rises, more forested land is being converted to ranches and crop fields. Meat that has been raised on farms uses a lot less water, land, and pollution.

Even though a little amount of tissue is required for cultured meat, no animal slaughter is essential.

ISSUES AND CHALLENGES WITH CULTURED MEAT

- Because it contains animal cells, Cultured Meat is not considered to be Vegan.
- It is really expensive.
- Conventional meat continues to rule the market, and industry lobby groups have been fighting to keep hold of that dominance, even to the point of opposing the idea of alternative meats altogether.
- Organizations involved in agriculture and animal husbandry are leading the opposition against lab-grown meat, claiming that since it did not come from an animal, it is not actually instance, the US Cattlemen's Association was successful in convincing Missouri to pass legislation prohibiting the classification of cultured meat and meat derived from plants as meat.
- The Cattle Council of Australia has been exerting comparable pressure on the national government since 2018.

WAY AHEAD

There is still a number several be resolved before cultured meat is widely available, such as price, resolving consumer distrust, and conventional meat producers' objections. When laboratory-produced meat becomes available, it might be healthier for you than meat derived from animals. According to experts writing in the Journal of Scientific Research, "this is because of the power of the technology to change the profile of key amino acids and lipids and to be richer in vitamins, minerals, and bioactive substances."

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