

# SLAUGHTER FREE MEAT - INDIA'S NEW FOODIE ADVENTURE!

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## Abstract

Meat is a huge source of nutrition that humans depend on to meet their daily nutritional requirements, as meat serves as an ideal source of omega-3 fatty acids, vitamin B12, protein, and iron. But now a day's animal meat is becoming a religious controversy! What if there can be a way where people can enjoy their favorite meat without the guilt of animal slaughter or offending ones religious beliefs? Bringing us to this new concept of in-vitro meat which is grown in the laboratory by harvesting muscle cells from animal in the culture media for growth and proliferation. So given that the local population of India value their religious sentiments we shall see if we Indians are willing to give a thought to the new concept of our SFM(Slaughter Free Meat) that will not only satisfy ones need for meat but also keep in check for the same of our Indians brethren .That's why this research aims to understand the awareness & Popularity regarding SFM(Slaughter Free Meat) within India with survey method.

**Keywords: SFM(Slaughter Free Meat), India city, Meat alternates, Meat industry, Consumer awareness.**

## Introduction

Meat is a huge source of nutrition that humans depend on to meet their daily nutritional requirements, as meat serves as an ideal source of omega-3 fatty acids, vitamin B12, protein, and iron. But now a day's animal meat is becoming a religious controversy! What if there can be a way where people can enjoy their favorite meat without the guilt of animal slaughter or offending ones religious beliefs? In food industry has come up with new concept called SFM. SFMs can be categorized into 2 sub - topics namely Animal Stem cell based and plant cell based artificial meats. In this research we are going to discuss about the Animal stem cell based meat or lab grown meat .

Every year, more than 60 billion animals are reared in industrial conditions in order to produce meat that has off lately stirred up a lot of animal lovers bring up humanitarian claims that one should start valuing another life in order for the survival of humanity. Animals welfare issues with the unnatural growth of various animals at poultry farms, goat farms, cattle farms etc. have become a major concern that can be resolved as it will put a control on the Insane Slaughtering of animals just to feed the millions of population in the world. With an estimates of the global population reaching a plateau of 9 billion in the year 2050 (Anon 2004), the meat industry would need to increase production by approximately 50–73% to maintain a per capita demand of the growing populations (FAO 2009; NIAA 2012). Given the current rate of consumption of meat it is very important for one to find an alternative to get the nutrition's we need from an alternative and more effective source.

In India to meet the growing demand of meat, the poultry population in the country has grown at a rapid pace. The poultry sector has grown a lot more comparatively since 2003, while the poultry and livestock population in India were almost the same. In 2019, the population of poultry in India was more over 800 million. There was a 16 percent increase over the last five years. In 2019, the Indian state of Tamil Nadu had the largest population of poultry in India accounting for more than 100 million. ( Statista Research Department, Apr 14, 2022)

Hence we are looking into the various possibilities of SFM, Culturing meat, Artificial meat, In vitro meat that can help humanity survive without the possibilities of risking extinction of a species. That's why this research aim to understand the awareness & Popularity regarding SFM within India country with survey method.

## Objectives

1. To identify awareness level within India about SFM.
2. To understand popularity of SFM within India.
3. To familiarized the readers about growing emerging trend of SFM.

## Literature of Review

### Understanding Relation between SFM & Humans

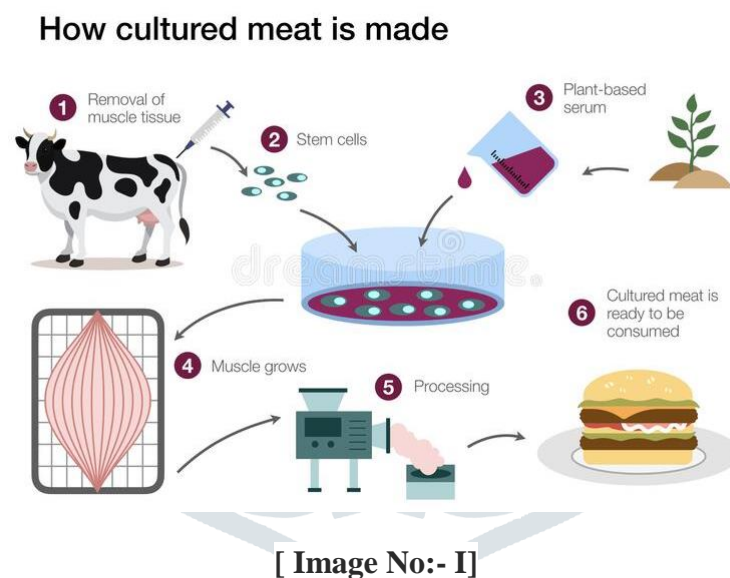
#### Concept of SFM

The concept of SFM(cultured meat) was popularized by Jason Matheny in the early 2000. In 2013, Mark Post created the first burger patty lab grown. SFM comes in several alternative names; Lab-grown meat, civilized meat, in-vitro meat, artificial meat, and is created by growing muscle cells in a very nutrient liquid body substance and inspiring them into muscle-like fibers easier animal merchandise, like artificial milk or hen-free egg whites, may be created by yeast that has been genetically altered to provide the proteins found in milk or eggs, that square

measure then extracted and merging within the right amounts. In fact, exploitation ‘cellular agriculture’, there’s no reason why scientists couldn’t grow artificial meat with characteristics from a mixture of animals, or enhance lab-grown meat with healthier fats, vitamins or vaccines. we have a tendency to may even style the flesh of rare animals that no-one would dream of slaughtering for food.

## Process of SFM

According to Dreams time's image no. 1 we can get an idea of how SFM gets cultivated. Instead of slaughtering animals, scientists can use the animal’s stem cells to make meat. Stem cells are the building blocks of cells and tissues, and by feeding them amino acids and carbohydrates, the muscle cells are going to be increased and fully grow within the laboratory. Once muscle fibers begin growing, the result's Associate in Nursing by artificial means created meat that resembles actual meat in terms of look, texture, and nutrient profile.



## Upcoming Startups Venturing into the product

There are many startups that have already begun developing & researching lab grown beef, pork, poultry and food. Not only foreign food companies like Mosa Meat, Memphis Meats, Super Meat and Finless Foods are exploiting the trendy techniques to seek out numerous ways that in developing these civilized / Artificial Meats that may be alimantal and even less harmful than regular meats. As we have a tendency to consumed an excessive amount of meat, it isn't sensible for one's health it ought to be consumed with an explicit amount of restriction. Whereas analysis conducted by NASA, where they civilized muscle tissue obtained from common gold fish (*Carassius auratus*), locomote 3-10 cm long, in petri dishes (Benjaminson et al.,2002) aim to

provide the cultivated meat for area flights and super molecule demand of inhabitants of area stations..

According to pilot review taken by Subramaniam Mohana Devi, he explain that given the consumption of meat is increasing in India in addition and agriculture is taken into account because the backbone of a majority of individuals. Placental plays a major role, and poultry and farm are the most important sectors causative to economic development. The bulk of meats consumed in India are fish, mutton, goat, pig, and poultry. In India, culture, traditions, customs, and taboos influence the meat consumption to a different level. Asian countries are the world's second largest business exporters of beef. In India, 95% of goat meat created is consumed domestically. Meat consumption, especially, is decided by the religions wherever Pork is prohibited to Muslims and Beef is prohibited to Hindus. The preference and consumption of chicken meat will be thought of as a universal development and chicken meat is greatly accepted by customers in Asian country as compared to the opposite meat consumption. The rise of chicken meat consumption is because of the flexibility of the meat, comparatively low price compared to different meat, and therefore the acceptance of the chicken meat to all or any religions.

In India, also this trend is raising hence to support this concept following few companies are looking forward to invest in the concept of SFM for better future & prevention from extinction , Centre for Cellular and Molecular Biology (CCMB), in partnership with National Research Centre on Meat (NCRM) are producing 'ahimsa meat' or slaughter-free meat – mutton and chicken that is been grown from stem cells, without the rearing of animal. It's a big move as a result of India being one among the few countries within the world where the government is funding the development of research lab meat.

More over Indian film stars also helping to rise this concept in Indian food industry. Ritesh Deshmukh & Genelia Deshmukh both has startup called Imagine Meats which have plant based product with 9 different wide range including biryani, seekh kabab, keema, chicken nuggets and burger patties that also ready-to-eat category. Imagine Meats has entered the market in Mumbai, Navi Mumbai, Thane, Pune, Delhi-NCR, Bengaluru and Hyderabad via Nature's Basket, Reliance Fresh, and its website., Wakao Foods, Blue Tribe GoodDot, Shaka Harry, Vegan Meri Jaan, Evo Foods, Oh Veg, Burger Buddy, Vegetarian Butcher, are one of many startups that we have seen stepping into plant-based products in the last few years.

### **Benefits of SFM**

Globally, most countries currently are united actively trying to find solutions to mediate global climate change impact and reducing meat consumption is amongst their prime priorities, alongside shift to cleaner energy & transport,” according to Sandeep Singh, the co-founder of Blue Tribe another start up introducing plant based meat products in the market. Some in style names within the house embody on the far side Meat, not possible Foods and Amy's room.

Compared to regular meat Lab-grown meat is more eco-friendly. The need for livestock eliminated, that could reduce the use of energy by as much as 45%, reduce use of land by 99%, and produce around 96% fewer greenhouse gases. As no animals will be harmed or treated unethically, it will also prove to be animal-friendly. Moreover, it significantly reduces the amount of water usage, as the standard production of only half a kilo of meat requires around 9000 litres of water, as compared to 94 litres required for cultured meat.

## Research Methodology

**Data collection:** Primary data is collected through feedbacks, Questionnaires, and one to one interviews.

**Sampling Techniques:** This topic of research is associated with the local foodies, culinary professionals from India So the sampling technique followed is RANDOM SAMPLING.

**Sample Size:** Questionnaires targeting responses of over 100 were collected from the population and the analysis for the same is done to support the objectives of this research paper.

**Population:** Educated, mid age, salaried/entrepreneurs people selected from all over the India to understand their opinion on the concept of SFM.

**Limitation:** As mentioned in introduction there are 2 types of artificial meat is available Plant cell based & Animal stem cell based. in this research we are focusing on animal stem cell based only.

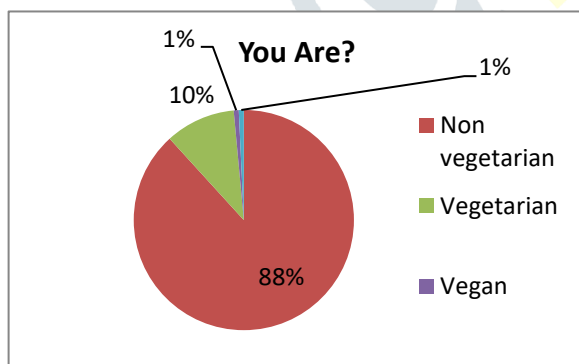


Fig. 1.1

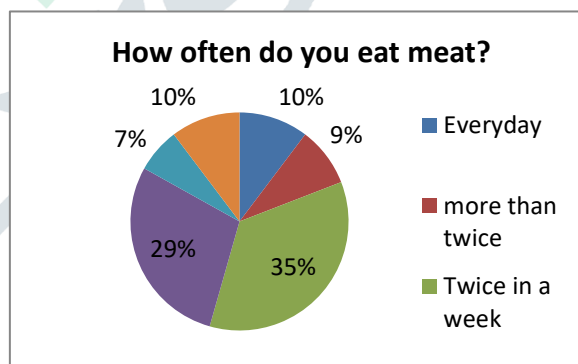


Fig. 1.2

## Analytical Findings:

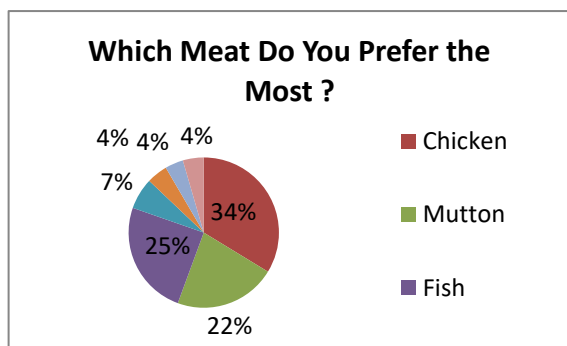


Fig. 1.3

On the basis of figs. 1.1/1.2/1.3 we can see that there are maximum percentage of the people that prefer to have non - vegetarian food as a part of their diet, of which there are 35% that will prefer to have their choice of meat at least twice a in a week: off which there are those that majorly prefer chicken, mutton and fish.

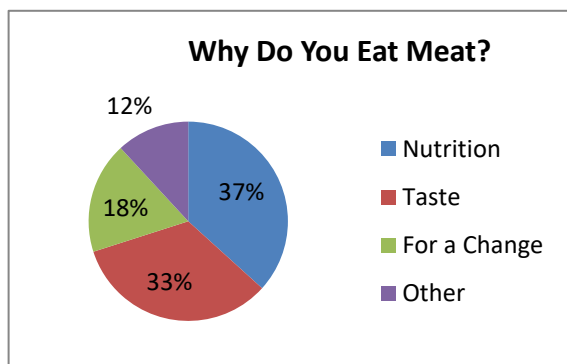


Fig. 1.4

In this illustration we can see that a major percentage of people prefer to have meat for nutrition as well as for the taste.

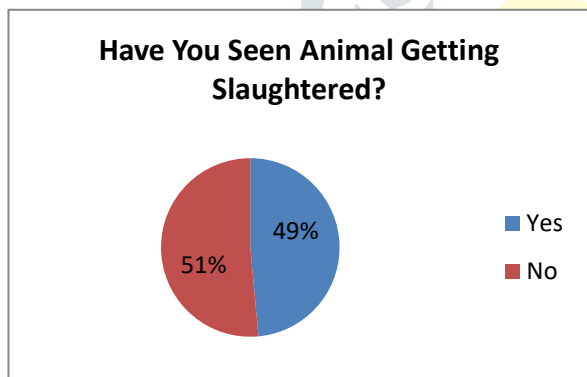


Fig. 1.5

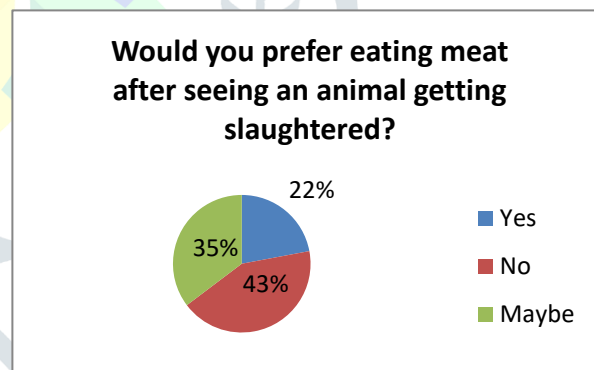


Fig. 1.6

Now a day's animal meat is becoming a religious controversy! Thus we see in the above 2 questions and the result is in front of us as mentioned in fig 1.5 & 1.6 that most of the people don't want to know of how the animals are force fed and inhumanely slaughtered to get the meat that not only nourishes us but also gives us a sense of satisfaction to the favorite meat that we relish. It is mainly this inhumane treatment given to these animals for the sole purpose of making profits in the various meet products that are available in the market by various multinationals that has given rise to a no. of animal activist fighting for the welfare of such animals that are getting



slaughtered maybe once upon a time only as a source of food or sustenance but in today's date and age solely for big profits by multinationals.

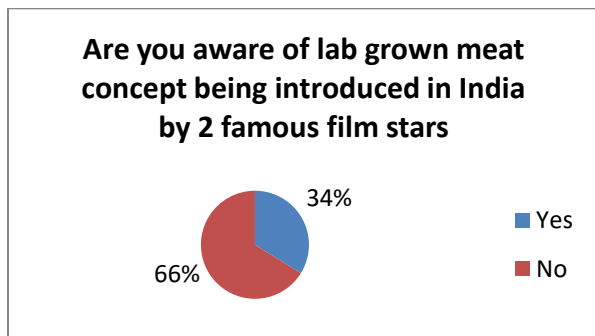


Fig. 1.7

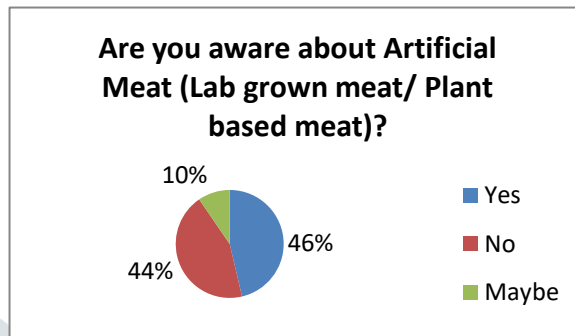


Fig. 1.8

In terms of awareness if we look at fig 1.7 it is safe to say that about 40% of the population are aware as well as not aware of new aged meat that is processed in the labs which will either be plant cell based or animal cell based while a clear 10% are clueless of the existence of any such product.

While if we consider in fig 1.8 we can see that a vast 66% of the people are barely even aware of the fact that there is a plant cell based lab grown meat that is actually available and also being endorsed by 2 famous Bollywood Star Couple.

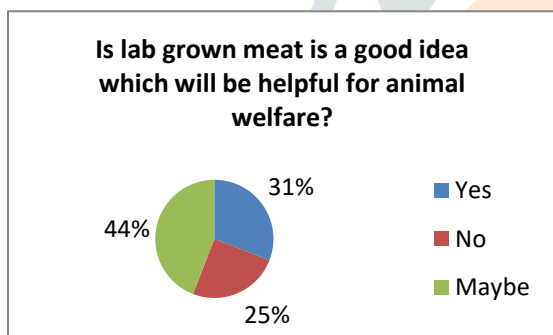


Fig. 1.9

So we see on a concise from fig. no 1.1 to fig. no. 1.9 it is safe to say that all those who are aware of this new process are either positive or hopeful of the fact that animal welfare will be greatly effected in the new age where we can expect the animals will not be tortured for the sole purpose of slaughtering to obtain the meat that is needed for sale or to feed.

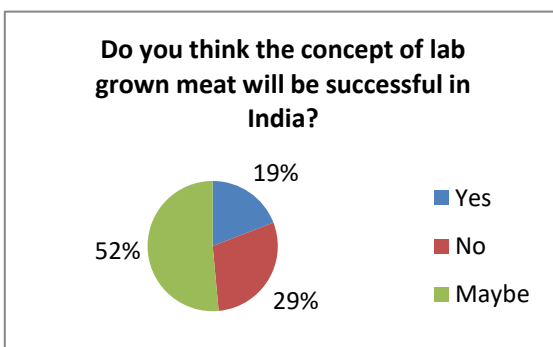


Fig. 1.10

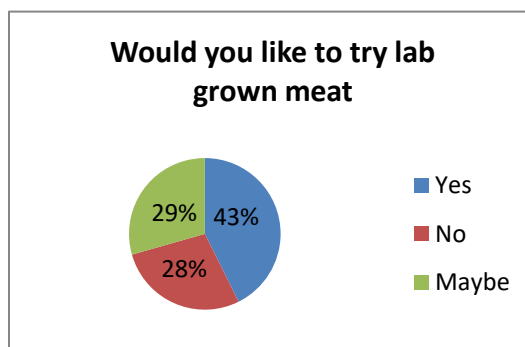


Fig. 1.11

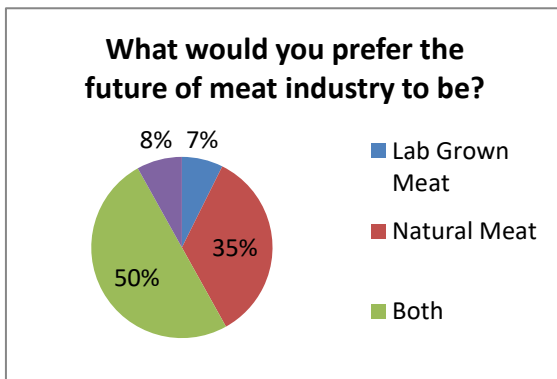


Fig. 1.12

Now if we observe fig. 1.10, 1.11 and 1.12 it is safe to assume that we have around 70% of the population that are either ready or are willing to try to move into the new age of Slaughter Free Meat. Hence we can say that this SFM is getting popular day by day.

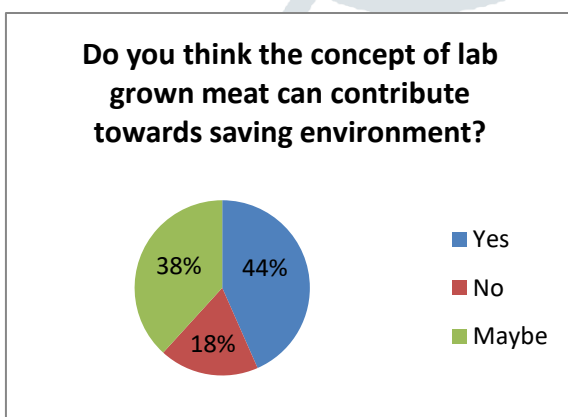


Fig. 1.13

So on the basis of our questioner we can say that there are a vast no. of people that are not sure of what actually does the concept of SFM mean or stand for or that there is even such a concept that is upcoming in the future of the meat industry which may or may not help in preserving a bit of the environment as well.

### Conclusion:

As per our research we can see that we have an increasing no. of people in India that prefer a non-vegetarian diet where we believe that India is a place with a maximum of Vegetarian preference. But even after all that we still have a large no. of population that will only prefer to have the meat without facing the reality of slaughter of any of these animals while there is also a large no of people fighting for the welfare of such animals, so the aim now is to see that if SFM can not only gain popularity amongst the meat lovers in India but also among those that are fighting for the welfare of these animals as these will be part of a lab grown process that will either be a plant based or a cell based process. So we can safely say that there is a growing and a positive scope with the SFM concept.



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