

Plant Based Meat: Meat Analog for Food Sustainability

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Introduction

Between 2022 and 2030, the global plant-based meat market is anticipated a 19.3 % growth. People will be more aware of animal rights as a result of rising consumer interest in plant-based diets, as well as increased awareness through welfare organizations. People who live a vegan lifestyle free of animal-based products rely on plant-based meat as a critical component. Veganism is becoming more popular for health and ethical reasons, while vegetarian ingredients are becoming more popular to avoid animal cruelty and consume sustainable food and beverage products as vegetarian ingredients become more popular.

Protein is primarily found in egg, milk, chicken, meat, chickpeas, soybeans, cashews, and peanuts. Proteins like enzymes, antibodies, hormones, structure formers like keratin, collagen, actin, and myosin and transporters like hemoglobin and myoglobin, are the most important elements required for basal metabolism. The Indian Council of Medical Research (ICMR) suggests that an adult should consume 0.8-1 gramme of protein per kg of body weight per day. When compared to plants, animal sources contain a higher percentage of protein. As a result, many vegans do not get enough nutrition from their protein sources.

In a world where veganism is on the rise and consumers interest in non-meat protein options is growing, there is a huge and valuable market developing for Alternative Proteins. Global demand for meat products has increased dramatically in recent years. Global meat consumption is expected to rise by 1.7 percent per year through 2022, according to the FAO, United Nations. However, rising meat consumption issues such as water overuse, soil erosion, and carbon-based fuel consumption encourage the rise of alternative proteins. Food industry players who want to capitalize on the opportunity must understand changing market dynamics and determine how and where such opportunities can be tapped in the coming days.

Alternative proteins are plant-based proteins that have been developed to replace animal-based proteins. A vegan can get as much protein from plant-based proteins as from



animal-based ones. Soybeans, cottonseed, canola, sunflower seed, groundnut, flaxseed, safflower, and linseed are all high in protein. Cereal proteins include rice, wheat, barley, corn, sorghum, oats, and grain amaranth. Beans, lentils, peas, chickpeas, guar, and lupines among other legumes and pulses, are used to produce plant-based meat products. Meat analogues, which resemble meat, have recently been developed to provide a tasty alternative. Today, there are more plant-based meat substitutes than ever before. Plant-based meat is defined as products made from plant materials that are designed to mimic animal meat in every way, including taste, aroma, and texture. It makes use of one or more different protein ingredients.

Being vegan may be a dietary choice for some, while it may be a lifestyle choice for others. A plant-based diet consists of only foods made from plants, such as fruits, vegetables, beans, nuts, and seeds. Meat analogues may include water and fat binders made from soy protein isolate or concentrate, milk proteins, wheat gluten, carrageenan, xanthan gum, eggs, and other ingredients. Depending on the amounts used, some binders and extenders may be used. High-protein ingredients are primarily used to bind and network water, whereas low- or no-protein ingredients such as flour and starch bind water and fat, despite their physical entrapment of water and fat. The impact of various binding agent levels on the quality and nutritional value of plant-based analogues is being investigated continually.

Composition is critical for improving the nutrient content of meat substitutes by using natural and clean ingredients. However, in order to replicate the look and taste of meat, brands rely on a variety of ingredients, the majority of which are highly processed and/or genetically modified (GMO). Last year, there was a significant shift from GMO to GMO-free, with 39% of imported products labelled non-GMO. The naturalness of the ingredients is becoming more important as consumers associate health foods with foods that lack natural and recognizable chemicals. Accordingly, nearly 60 percent of the recently launched products are of natural sources. Within this context, the use of clean label ingredients strengthens the market position of meat analogues not only for vegans and vegetarians, but also for consumers seeking healthier food options. In recent years, some natural ingredients, including red dyes, have taken their place, and most brands now emphasize clean labels and natural red pigments. Furthermore, breeding proteins with improved nutrition and functionality can reduce anti-nutrients and dysfunction, increase functionality, and reduce the need for treatment and masking agents. More research is needed in selection of ingredient and

treatment process for obtaining fiber structure while incorporating health-promoting ingredients.

Because meat substitutes don't have as many nutritional requirements, they may be used to replace meat in a diet. The more meat is replaced with alternative products, the healthier the diet will be. Consumers are paying more attention to the health and nutrition of meat analogues. The global market share of plant-based foods is predicted to rise 6.7% annually by 2022. Vegetable proteins have anti-inflammatory and immune-boosting properties, as well as improving type II diabetes symptoms. Meat analogues do not contain saturated fatty acids, cholesterol, or purines, so the health dangers associated with high red meat consumption can be avoided if a diet is low in meat and milk. Diets with higher fibre and secondary plant substances are usually low in meat and milk.

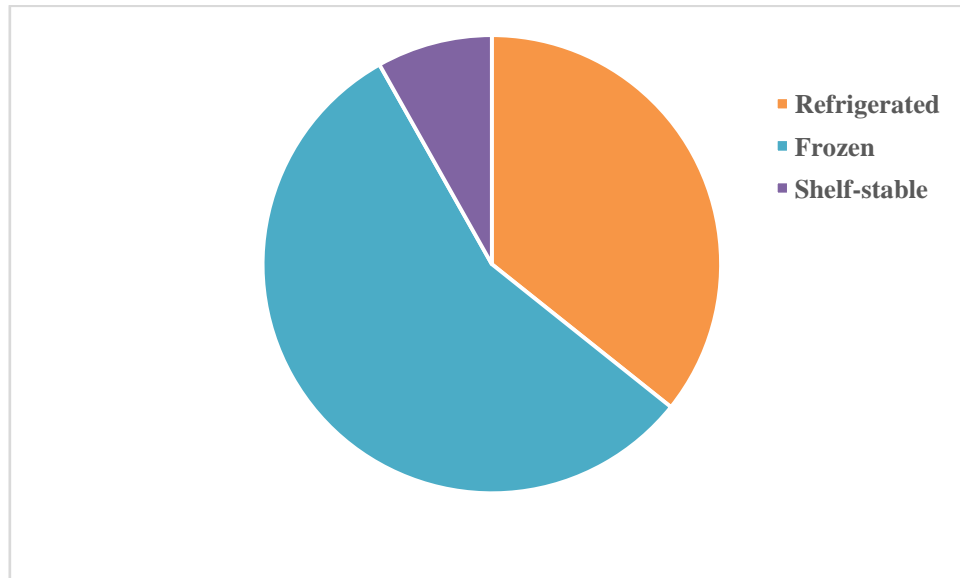
Recent trends in meat analog

According to industry experts, the meat-free option trend gaining popularity among many restaurants, fast food chains, and casual eating establishments is driving market growth. As consumers shift towards more personalized, customized service, leading firms are capitalizing on these trends. Consumers are expected to be drawn to the plant-based sausages, which look, feel, sizzle, and taste like regular pork sausages. Companies' growing interest in producing plant-based sausages with unusual flavours, like spinach pesto and hot and sweet Italian and is anticipated to increase.

In 2021, North America is predicted to garner 38.6 percent of the revenue. Consumers in this region are purchasing more meatless meat products due to their growing concerns about consuming contaminated meat products. As plant-based foods gain popularity, food safety and sustainability perceptions are expected to evolve further. Plant-based sausages are among the ingredients in a vegan sandwich that Starbucks debuted in 2020 as part of its breakfast menu in most of its US locations.

Frozen plant-based meat products accounted for 56.6% of the global market in 2021, as people sought out new vegetarian products across the ambient, chilled, and frozen categories. Consumers have benefited from an expanded selection of plant-based meat products due to the development of new products across the ambient, chilled, and frozen segments. As a result, plant-based meat products are gaining greater shelf space and

recognition. Consumers desire frozen goods because frozen meat items last five to eight months in the freezer.



Global Plant-based Meat Market Share (Percentage)

Limitations

Meat analogues are typically classified as super-processed products. However, the law is still unclear, and more research on regulatory issues is required. It has the potential to be a highly nutritious product. The lack of meat-like designations, safety standards, and regulations that define standards creates an ethical quandary that makes it difficult for consumers to understand the health status of these products.