

## Turning the Tables on Meat with Sustainable Plant-Based Alternatives



The worldwide appetite for meat is on the rise, with meat production having increased by over threefold in the past five decades. Currently, the globe generates more than 340 million tonnes annually and is forecasted to increase to 364 million tonnes (carcass weight equivalent) in 2023<sup>15</sup>. This growing demand was led by the increasing world population, which reached 8 billion in mid-November 2022, and is anticipated to surge to 9.7 billion by 2050<sup>16</sup>.

Consequently, there is substantial evidence indicating that our current global food systems and consumption patterns are unsustainable for human and planetary health. Therefore, to achieve a sustainable diet with positive impacts on both the environment and human/ public health, it is essential to transition toward a predominantly plant-based diet and reduce global consumption of animal-based products<sup>17</sup>.

### Exploring the Future of Plant-Based Alternatives Market

For instance, consumer concerns about healthier living, animal welfare, and environmental sustainability are driving a shift towards plant-based alternatives to meat and seafood<sup>2</sup>. In Europe, among the flexitarian, there is a growing trend to reduce meat consumption, with 46% of consumers eating less meat than the previous year. Additionally, 39% plan to further reduce meat intake, while 25% intend to increase their consumption of plant-based meat over the next six months<sup>11</sup>. Other than meat alternatives, the consumer interest in plant-

based seafood is also growing, with 60% of UK meat substitute consumers finding plant-based seafood products more appealing<sup>8</sup>.

According to a report by Grand View Research, the worldwide market for plant-based meat reached \$4.40 billion in 2022 and is projected to experience a compound annual growth rate (CAGR) of 24.9% from 2023 to 2030. The factors that contribute to this growth is because of growing consumer interests on plant-based diets with the rising awareness of animal rights promoted by various welfare organizations, is anticipated to boost market expansion<sup>1</sup>.

## Consumer Preferences

In today's era, people are expanding their culinary horizons by consuming different varieties of food. As a result, innovations in plant-based alternatives should align with consumer preferences to attract them. However, appearance, texture and flavour are the three main challenges that food scientists face when developing a plant-based meat<sup>9</sup>. In a study examining the factors that influence consumer choices for plant-based meat alternatives, attributes such as dietary fit, ingredients, taste, texture, and ethical considerations were deemed highly important<sup>5</sup>.

The taste and texture of food is crucial in consumer preferences as sensory properties play a pivotal role in food purchases<sup>6</sup>. A common reason for non-eaters of plant-based meat is their shared dislike for the taste<sup>13</sup>. As for plant-based meat alternatives, consumers not only cite flavours, including chargrilled and caramelized notes, as well as an intense meaty flavour<sup>14</sup>. Texture is equally essential in replicating the meat-eating experience. Due to the advancements in plant protein structuring technologies, researchers can explore high-moisture and low-moisture textured vegetable proteins that replicate the texture and juiciness of meat<sup>6</sup>. This can help with improvements in plant-based alternatives with respect to texture, appearance, flavour, and aroma, resembling traditional meat products.

## An Answer to Sustainable Solutions

In recent years, the market has been discovering increasingly more suitable protein sources as the development of plant-based alternatives that enhance the quality of the final products and further refine their appearance and flavour. For instance, a leading functional ingredients producer, **Beneo** provides a range of naturally sourced ingredients, with a particular focus on plant-based functional ingredients for use in food, feed, as well as pharmaceutical products.

**Beneo's textured wheat protein** serves as an excellent protein source with a meat-like texture and a pleasant, neutral taste, eliminating the necessity for flavour masking. In addition to providing a quality protein source, **Beneo** offers a nutritional solution by incorporating **inulin** and **oligofructose** – plant-based prebiotics – into meat and seafood alternatives, offering a natural fibre source for gut health. Apart from enhancing the nutritional profile of plant-based proteins, inulin and oligofructose can also improve the viscosity, stringiness, and gelation properties of plant-based alternatives.

In the development of vegan protein products, achieving homogeneity and stability can be challenging, especially when integrating vegetable fats into hydrophilic formulations designed to replicate animal adipose tissue. Hydrocolloids, which possess thickening and gelling properties, are important ingredients needed to create a cohesive and structured network within the protein matrix when combined with appropriate formulations<sup>10</sup>. **Polygal AG** offers a wide range of natural pure gums and hydrocolloid blends. One of the selections like **Polygum Carob Pro-TN** not only helps to neutralize the bitter aftertaste of plant-based protein, such as pea protein but also contains natural brown colour like the colour of real meats and toasted taste which able to mask the vegetable protein odour. Furthermore, it also has effective binding properties that binds other ingredients of the whole patty.

While taste has always played an essential role in capturing consumer attention, creating a desirable flavour profile for products in the plant-based meat category remains a longstanding challenge. Other than taste indulgence, consumers are also looking for meat alternatives that prioritize health, sustainability and crafted using natural sourced ingredients. A premier specialty food ingredient manufacturer, **Halcyon Proteins** has a full range of premium and natural ingredients to enhance the taste and flavour in food products. Their range of **Flavex Vegetable Protein Extracts** or **yeast extracts** are unique flavour enhancing ingredients, most importantly, they are all natural, no preservatives or additives added, gluten free, non-GMO and provides a top-notch product at an affordable cost.

At **DPO International**, a full-suite market enabler, we work in tandem with the world's premier specialized food ingredient producers such as Beneo, Polygal ag, and Halcyon Proteins. As a result, we are equipped to assist you in translating this trend into innovative concepts for your brand, from ideation to manufacturing stage, we are here to provide you with all kinds of solutions and support you through every phase.

## References

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