



Companies focus on good nutrition while reducing meat consumption

Strong, creative patent portfolios are essential to protect investment.

Much has been reported in recent times about the potential of reducing meat consumption in order to reduce our environmental impact. As a result of growing consumer demand, there has been an upsurge in the research and development into meat replacement food products and supplements that provide maximum nutrition and taste. This increase in R&D has been reflected in the number of patent applications filed. According to the World Intellectual Property Office, the number of food patents filed globally for meat substitute products rose from 190 in 2017 to 255 in 2018, an increase of 34%.

As noted in our article entitled [BBQs and meat free burgers](#), a growing number of startups are building businesses that aim to make lab-grown meat an affordable reality. Whilst products made using ground meat substitutes such as burgers and sausages may now be close to market reality, a fillet of meat or fish has a texture that is much harder to replicate and it derives its flavor from a number of cell types including both muscle and fat. Companies are therefore continuing to look into clever solutions and to develop technologies such as 3D printing and edible scaffolds to enable a product that better resembles the texture of a meat or fish fillet rather than ground meat.

For example, [Nova Meat](#) is looking into the potential of 3D printing and recently unveiled a plant-based steak derived from peas, rice, seaweed and other ingredients. 3D printing allows the ingredients to be laid down as a criss-cross of filaments, which imitate the intracellular proteins in muscle cells. The aim is to mimic the taste and nutritional properties of a variety of meat and seafood, as well as their appearance.

As well as the texture and the taste of the food, it is of course important that the food product provides the correct nutrition. Whilst it is possible to get adequate nutrition from a well-planned plant-based diet, many consumers welcome the growing number of foods, beverages and supplements that support healthy living and provide greater choice and flexibility.

Two of the key nutrients that are important to consider when on a meat-free diet are vitamin B₁₂ and protein. Essential nutrients are those our bodies cannot make, so we have to ingest them via the food and drink we consume. Vitamin B₁₂ is an essential nutrient that is not found naturally in plant-based foods. Therefore, vegans especially should eat an adequate intake of B₁₂ fortified foods or take a vitamin B₁₂ supplement to avoid the risk of vitamin B₁₂ deficiency. With regard to proteins, it's not the actual protein that we require but the individual amino acids. Nine of the amino acids are considered essential. Moreover, there are two essential amino acids that are lower in some plant-based protein sources.



[Legumes](#) tend to be lower in the amino acid methionine, and most other plant-based proteins are lower in lysine. With the global plant-based protein market predicted to reach [\\$40.6 billion](#) by 2025, food brands big and small are looking to innovation to meet rising demand from health-conscious consumers, with companies such as [Abbott Nutrition](#), [Unilever](#), [Nestlé](#), [Tyson Foods](#) and [Archer Daniels Midland Company \(ADM\)](#) investing in science-based solutions.

Strong, creative patent portfolios in order to protect the investment made in innovation is essential; something that is well recognized by the leaders in the sector. Quorn, one of the first companies to bring meat substitutes to the market, first patented mycoprotein back in 1985.

While the original patents expired some time ago, the company has been able to maintain a market leading position thanks in part to a solid patent portfolio protecting its derivative products and processes. Another big player in the market, Impossible Foods, has been investing in a series of European patents to protect the use of heme, a genetically modified molecule which is used in the company's food additives, flavoring, and meat substitutes. In this competitive sector, it is more vital than ever that innovators implement a comprehensive IP strategy.

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