Unlocking the Potential of a Protein: How to Tap into the Protein Trend with New and Innovative Application Ideas

by Steve Mott

Soya beans have featured in the diets of Asian communities for many centuries. As part of traditional Asian diets, soya beans are a valuable source of high quality protein and cooking oil that is rich in healthy, unsaturated fatty acids. Although often considered to be a low-cost meat replacement in Europe, increasing consumer interest in health and wellbeing, as well as a steady stream of scientific studies documenting the beneficial role of proteins from all sources, has changed the perception of this versatile ingredient.

With an estimated compound annual growth rate (CAGR) of 5.7% from 2014 to 2019, the European soya protein market remains strong. In addition, technological advances in soybean processing, such as ultra-heat treatment, and the development of new soybean varieties have facilitated its use and acceptance across the food industry. With the wide range of highly functional soya proteins that are now available, there are new opportunities for food manufacturers to tap into the high protein trend with convenient, tasty and innovative application ideas.

The protein high
Driven by the overall health and wellness trend and a greater consumer awareness, the demand for protein-enriched foods has grown significantly over the past few years. Nearly 4% of global food and beverage launches in the twelve months ending 31 March, 2015, were marketed on a “high-protein” or “source-of-protein” positioning. This trend has been further fuelled by the growing number of scientific studies supporting the beneficial role of high quality protein, such as soya, including its positive role in the maintenance of bone mass, and contribution towards muscle growth and maintenance.

But it’s not just the health-conscious consumers that have propelled proteins to new heights. As the global aging population (> 65 years) continues to increase, so does the body of evidence that, relative to energy intake, older adults need more dietary protein than younger adults in order to support good health, promote recovery from illness and maintain functionality. A nutrient-rich diet is critically important for older adults because of the impact of food intake on health. Research suggests that moderately high protein intake is necessary for maintaining nitrogen balance and offsetting age-related lower energy intake, decreased ability to synthesise protein efficiently, and potential for impaired insulin action.

Besides the proven nutritional benefits of proteins, consumers are also increasingly concerned about the sustainability of their food supply. Although high-protein diets have traditionally been dominated by the meat and dairy categories, consumers are seeking alternative protein sources which put significantly less demand on the environment or which cater to the needs of vegetarian or vegan diets. Responsibly-sourced, plant-based protein is now seen as a viable alternative, creating new opportunities for product innovation and helping manufacturers to boost their “green” credentials.

Unlocking soya’s potential
Thanks to the high nutritional value and neutral flavor profile, soya proteins are the ideal choice when it comes to formulating protein-enriched foods that are in line with the latest consumer trends. With a high protein content and protein utilization score (the percentage of the available protein the body can use), the nutritional value of soya protein is comparable to that of cow’s and human breast milk. Soya protein ingredients also contain a higher proportion of essential amino acids, such as tryptophan and lysine, when compared to other plant proteins such as corn, for example.

Most protein fortified blended foods are currently formulated with a blend of corn and soya flour or soya protein isolates. Soya protein isolates can be more nutritionally beneficial than...
Ingredients

traditional soya protein ingredients when used at the same inclusion level, as they contain more protein per gram and are low in fat. Newer alternatives, such as soya protein concentrates, are also able to contribute to improving nutritional profiles and contain up to 15 per cent more protein than soya flour. By using either soya protein isolates or soya protein concentrates, the nutritional value of fortified foods can be increased significantly, while using less soya ingredient. Furthermore, with soya proteins, manufacturers are able to reduce product costs per unit of protein when compared to other sources of protein, such as animal-derived, dairy or corn, making the soya-based product a more cost-effective solution.

With more and more consumers actively looking to increase the protein content of their daily diets without consuming larger amounts of traditionally protein-rich foods such as meat and dairy products, a wider variety of protein-enriched options, tailored to meet individual needs, is now available. But what are the latest trends set to inspire the protein-packed products of the future?

Trend 1: The snackification of everything

Snacking has become a convenient and effective way to provide the body with the necessary nutrients it needs while fitting in with consumers’ increasingly hectic and fast-paced lifestyles. As such, manufacturers are required to create innovative ‘on-the-go’ products that continue to be nutritionally relevant to consumers. The snack bar market is one category which has risen to the challenge of this growing demand. According to Euromonitor International, UK sales in the energy bar and nutrition market will continue to grow in the next five years, forecasting sales worth €243 million by 2019.1

However, it’s not just bars that are proving to be the ideal platform to engage with the high protein trend. Manufacturers are also increasingly looking to incorporate proteins into a wide variety of baked goods in order to boost the nutritional profile of these products. Since baked goods are frequently consumed at the beginning of the day, inclusion of protein in these products can improve their nutritional profile while enhancing feelings of satiety. In fact, research has also demonstrated that spreading protein consumption more evenly over the day can positively affect muscle synthesis.2 Although high protein claims are currently not the most important drivers in the purchase of baked goods, a combination of protein claims and other health claims may open up new product development opportunities for food manufacturers.

While today’s consumers expect their foods to have multiple functional benefits, they still have high expectations when it comes to taste and flavor. For example, formulating cereal bars with large amounts of functional components such as fibers or protein can be difficult, as these ingredients are likely to impact the taste and texture of the end product. By using soya protein crisps, or extruded “puffs” however, manufacturers are able to customise the level of protein in their snacks, while still maintaining the crisp and crunchy texture that consumers expect from their cereal bar. Soya proteins are a higher quality protein source than many others that are commonly used as snack ingredients, such as wheat proteins, for example.

Another important consideration is taste. Proteins typically provide sensory attributes that are characteristic of the protein source, so flavors such as ‘cheesy’, ‘beefy’ and ‘milky’ that are associated with animal proteins like whey or gelatine, for example, can come through in the final product. Soya protein concentrates, on the other hand, can be more neutral in flavor, making them ideal for a wide variety of speciality food applications like nutritional bars or porridge. Additionally, the high protein content of soya protein concentrates enables formulators to use lower dosages to achieve target protein levels, which is a further aid to minimising “protein” flavors coming through in the finished product.

Trend 2: Sports beverages go mainstream

The sports nutrition market has gone through a major transformation over
the past few years. Traditionally supported by bodybuilders and professional athletes, sports nutrition is now increasingly targeting a wider group of consumers looking to maintain an active lifestyle and a healthy diet. Although nutrition bars and supplements still dominate the market, the functional beverage segment is growing and is expected to be worth $3,644.8 million by 2018. In particular, protein-based beverages have gained in popularity as consumers become increasingly aware of the benefits that protein can offer with regard to maintenance and growth in muscle mass.

Even though whey still appears to be the dominant protein source in protein-enriched beverages, blending whey protein with other proteins, such as soya and casein, is increasing in popularity amongst manufacturers. Although these other proteins have a more moderate digestion rate than whey, some research has shown that their use may enable the body to sustain an elevated blood amino acid level over a longer period of time compared with protein solutions based solely on whey. This research demonstrated an extended muscle protein synthesis period of between one and four hours during the post-exercise period for the blend used in the study versus whey protein alone. Furthermore, soya proteins in particular offer distinct benefits in protein drinks as they are not only good quality proteins, having a high protein digestibility corrected amino acid score (PDCAAS – a measure of protein quality) of 0.98, but they are also an excellent source of L-glutamine and L-arginine, which are essential amino acids.

Taste and mouthfeel are vital attributes of sport beverages if they are to maintain consumer appeal and move from niche to mainstream. However, the branched chain amino acid structure of protein molecules means that it can often be difficult to create a smooth-tasting beverage. Each protein imparts its own specific taste and texture profile. Consumers also often experience a chalky or grainy mouthfeel when drinking high protein beverages. Achieving the right balance between nutrition, taste and mouthfeel is therefore key for the product’s commercial success. Depending on the characteristics of the taste profile and the quantity of the protein ingredient used, this can pose distinct formulation challenges when it comes to beverages.
To meet growing consumer demand for great-tasting, protein-fortified beverages, new ingredients that echo the benefits of traditional proteins but are more suited to use in beverage systems and are more appealing to consumer tastes have started to emerge on the market. For example, the cleaner taste of many isolated soya protein products means that the flavor of the finished product is much less impacted by the presence of the soya proteins. This appeals to sports drinks manufacturers as it allows consumers access to higher protein contents, less fat and minimal compromise on taste.

Conclusion
As the advantages of protein are becoming well-known among health-minded consumers, manufacturers are faced with many new opportunities to tap into the protein trend. As a high quality protein source with a more neutral taste profile, soya protein is one of the most versatile protein sources available and can help manufacturers maximise the potential that the market has to offer. As the industry leader in soya protein production, ADM can provide customers with the best solutions for their needs, helping food and beverage manufacturers around the world to develop new applications without sacrificing taste or nutrition. ADM’s versatile soya proteins for diverse applications include the CLARISOY™ isolated soya protein range for protein fortification of beverage systems and the Textura™ range of protein crisps that can be customized to individual product needs.

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References
2. Innova Market Insight (June 2015)

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