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RESISTANT STARCH: LET US FIND GOOD THINGS ABOUT PROCESSED FOODS

There is a trend now to show food industry in bad light. Some have resorted only to find what is the problem with the food products made by industry. They would accept the same products prepared at home or by commercial kitchen but if it is made by a company and marketed it after packing, it is branded unhealthy.

There are many things that are good about most products made by food industry including safety, quality and cost effectiveness among many others. There are examples of making the food safe by destruction of pathogens and also getting rid of antinutritional factors. Food sometimes not quite easily edible becomes not only edible but nutritious as well. Sometimes lack of nutrients could be mitigated by fortification.

One really good example is resistant starch. Plenty of research has been done on rice when cooled after cooking and reheated, form resistant starch that adds to the dietary fibre as we don't digest that but gut microbes can. Traditionally we encourage consumption of only freshly cooked rice and not stale. However, now we find that leftover rice when kept in fridge and reheated may be even healthy if not healthier.

In fact, there are many starchy staples and foods that show this tendency. Many cereals, pulses, fruits and tubers are showing this tendency on cooking and chilling or freezing giving rise to formation of resistant starch that adds to dietary fibre.

There are reports showing even white bread when frozen and toasted shows substantial increase in resistant starch. Potatoes when fried, baked or heated show good amount of resistant starch formed in it.

There is a contest among some social media influencers and health advocates to show which food products made by industry are unhealthy. Sometimes material is taken out of contest to show this just to gain popularity.
People have tried to show that heat treatment including baking, frying, toasting etc. may be causing changes that may be unhealthy or even harmful without proper verification.

Many researchers are showing interest in pursuing formation of resistant starch in many of our foods during preparation and storage. This is a good direction as this is not just updating our knowledge about food and nutrition but as many of the foods are going to be processed in some way or the other, it would be helpful to know what happens under different processing conditions, so we could optimize the conditions of food preparation at home or in a factory, to minimize the destruction of nutrients and forming healthier and safe foods.

We should not just try to find not just the unhealthy changes but healthier changes that take place in food manufacture.

Prof Jagadish Pai, Editor, PFNDAI

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WHAT MOTIVATES INDIA'S PURSUIT OF FOOD SAFETY

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When media questioned the ten-fold revision of maximum limits for spices from 0.01mg/kg to 0.1mg/kg, the Authority responded with having strict standards.

Debating limits, high or low, completely misses the point of consumer safety. Drunk driving is unsafe even at low speeds as it exposes pedestrians and others to unacceptable risks. Speed limits are higher on expressways but set much lower near schools as risks increase. Likewise, maximum limits are risk management options proportionate to the risk presented. Since limits were not available for ethylene oxide in spices, FSSAI set it at 0.1mg/kg, the limit of quantification (LOQ), which is the lowest amount measurable with statistical certainty. A proper explanation should have followed instead of an unconvincing response. But more worrying is the convoluted selection of limits from Codex/US/EU/Japan/FSANZ, and whether the pesticide is registered or lacks field trial data. Consumer safety is based on exposure to harm, not this or that.

Every country, region (EU) or global (Codex) agency sets maximum limits, which may differ based on dietary exposure. EU set a limit of 5µg/kg (2006) for Ochratoxin A (OTA) based on its agricultural capabilities and consumption data. On reviewing EFSA's Scientific Opinion on emerging toxicological evidence, the limits remained the same, but more products (2022) were included for wider monitoring of total dietary intake.India revised OTA limits of 20 µg/kg (2020) for wheat to 5µg/kg (2024), extended to wheat bran, barley, rye and coffee. Wheat consumption in India is significant; barley and rye are not, but majorly consumed in the EU, and so is coffee. The limit for coffee is 5µg/kg, whereas instant coffee is 10µg/kg (EU), a distinction ignored.

A study (Food Control, 2012) in five northern States found 58% of wheat samples with detectable amounts and 26% failing the EU 5µg/kg limit, attributable to poor agricultural practices and storage conditions. NSS report (2011-12) estimates per capita wheat consumption is 4.29kg/30 days, amounting to 1.07kg per week. Consumer safety is knowing the total dietary intake and the percent contributions of wheat at 20 µg/kg and 5µg/kg. The Scientific Panel's estimate of dietary intake, compared with the Provisional Tolerable Weekly Intake (PTWI), would indicate whether population safety is close to or exceeding PTWI. This measure is more reassuring to consumers than max limits.

Agricultural capability to meet the standard is critical. For example, the EU set a maximum total limit for Aflatoxins B1, B2, G1, and G2 at 4µg/kg and 2µg/kg for B1. India set an MRL of 15 µg/kg for total Aflatoxins and 10µg/kg for B1 for foods directly consumed, similar to Codex. Yet India, through the APEDA-certified supply chains, exports peanuts to the EU, complying with stricter limits - demonstrating agricultural capability. However, creating dual food safety supply chains, one stricter for export and another less for domestic consumption, is discriminatory.

Years ago, an outcry over stricter limits in Europe than in Indian beverages attracted Parliamentary attention, resulting in a new food law dedicated to building safe supply chains. Limits are set for achieving a public health goal through improving infrastructural capabilities. Are these motivating the setting of limits?

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THE FUTURE OF FOOD
CONSUMER TRENDS, INNOVATION, AND LABELLING

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The Indian Food Processing Landscape and Its Future Scope

India, with its thriving economy and burgeoning food processing sector, has the potential to shape the global food landscape through innovation and manufacturing. The demand for packaged food is rising tremendously, and with food accounting for a significant portion of India's consumption pattern (46%), its importance and impact are undeniable. India's raw material advantage, being a top exporter of several Agro commodities, coupled with its status as a hub for key global manufacturers, positions the country as a formidable force in the global food industry. We are moving forward in the right direction at full speed, ready to seize the opportunities ahead.

Rising Consumer Trends in the Food Industry

The consumer mindset is shifting toward healthier options as we move ahead. This shift is influenced by several factors, starting with increasing purchasing power, a growing demand for convenient food amidst busy lifestyles, urbanization, technological advancements, and the rise of social media. Social media, in particular, has increased awareness among consumers, guiding their choices like never before.

However, India remains a price-sensitive market. Innovation tailored to this region is essential, given the diversity in taste and preferences that vary from one region to another. Striking the right balance between taste and cost, creating products that appeal to the general

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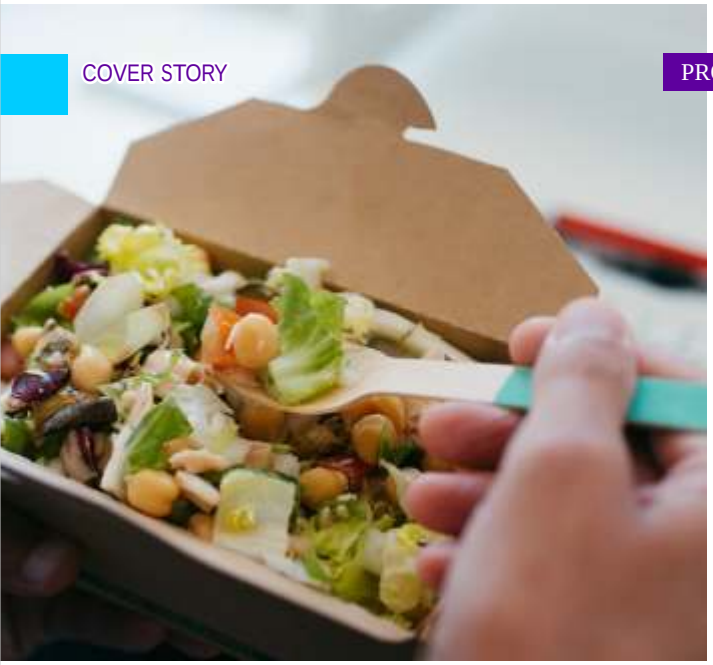

consumer irrespective of regional differences, is a significant innovation goal in itself.

Sustainability and sustainable choices are also playing a crucial role in shaping consumer preferences. The industry is increasingly leaning toward greener choices for a sustainable future, as the health of the planet is a key concern in consumers' minds. There is a notable focus on diets, with consumers striving to reduce the intake of negative nutrients while exploring traditional grains like millets, daliya, and even global grains like oats and quinoa.

The coming generation, often referred to as Gen Z, is particularly adventurous and rebellious with their choices. They are open to experimenting with new taste profiles and product formats, driving demand for innovation in the food sector. This generation's willingness to embrace novelty presents exciting opportunities for the industry to push boundaries and create offerings that cater to their dynamic preferences.

The Role of Innovation in Product Development

Where there are complexities, there are ample opportunities as well. In product development, creating a win-win solution for the entire family is paramount. The eternal debate of taste versus health finally seems to be nearing a resolution. The earlier perception that something tasty was bound to be unhealthy or unpalatable is being challenged. Today, some of the tastiest products on shelves are also loaded with healthy ingredients.

A prime example of this is the rise of multigrain offerings, particularly those incorporating millets in breakfast cereals, snacks, and bakery segments. These products exemplify the balance between nutrition and taste, making mothers happy with the nutritional value and kids delighted by the flavour. This is what we define as a true win-win in product development.

"Apart from the technical aspects, consumer attitude and preference play a huge role in innovation as well. Convenience often is the need of the hour due to busy lifestyles; people don't have enough time to prepare food, hence the inclination towards ready-to-eat and ready-to-cook options is increasing. This busy lifestyle is leading people to skip breakfast and meals, especially breakfast, three times more than lunch, data suggest that more adolescents (32%) skip breakfast compared to adults and children, which is a concerning pattern being observed. A convenient andwell-balanced breakfast provides the nutritional foundation for a productive and healthy day to strike the balance right, at any age.

Innovation must harmonize the factors of nutritional science, consumer preferences, and technical advancements, while setting the bar high with proactive measures. By addressing these elements, the industry can play a key role in shaping India's future, contributing to healthier lifestyles and long-term well-being.

The Evolution of Food Labelling and Future Trends

The regulatory framework in the food industry is evolving rapidly, encompassing several critical aspects such as licensing /, certifications, good manufacturing & handling practices, claims and communications, product specifications including raw materials, Packaging materials focusing on green practices, trainings and testing. This comprehensive framework ensures that products are safe, nourishing, and aligned with consumer expectations.

One major trend is the rising emphasis on offering a portfolio of choices to cater to diverse consumer needs. Products with 'no added sugar,' 'no maida,' enriched with fruits, nuts, seeds, multigrain, and high fibre are becoming increasingly popular. Additionally, there is a growing focus on enrichment of vitamins and minerals, as consumers become more aware of the importance of both macronutrients and micronutrients. Key nutrients like Calcium, Vitamin C, several B vitamins, and iron are now frequently highlighted on labels, addressing common deficiencies and supporting overall health. Portion size is another key focus area, as balanced meals with appropriate nutrient composition are essential for maintaining positive energy intake and promoting overall well-being.

The regulatory landscape in India has undergone a significant transformation over the years. It has transformed from "Following a regulation" to a "Self-compliance" status for food business operators. From the initial drafting of the FSSAI framework in 2006 to the enforcement of regulations post-2011, the focus was on providing a wholesome food to consumer and ensuring the safety of food products. By 2016, the concept of proprietary food was introduced, along with the addition of new categories and an approval process for novel ingredients and products. During this period, the FSSAI also became more streamlined, with technology playing a pivotal role in offering instant solutions.

By 2018, the emphasis shifted toward informed consumer choices and making consumer regarding right practice of food consumption with initiatives like "Thoda Kam" by FSSAI. Food companies showed their commitment for reduction of sugar, salt and fat by signing pledge with FSSAI. Which reflects a proactive approach, where companies are improving their products to meet consumer demands rather than merely reacting to regulatory changes. Innovations like IoT, digitalized labelling, and the integration of QR codes are significantly transforming the industry. In the meantime, explicit guidelines were established for claims and advertising in 2018, addressing ingredients/ food products, nutritional & health aspects etc. These comprehensive standards aim to ensure transparency and promote responsible practices in labelling & advertising.

This shift marks a new era for Indian food safety landscape, transitioning from simply following rules to taking the initiative in innovation, adopting to emerging challenges, empowering consumers and proactive self-compliance. It highlights the tremendous progress and transition in the regulatory space, creating a safer, healthier, and more responsible food ecosystem for all.

THE PLANT-BASED PROTEIN REVOLUTION

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Protein is the cornerstone of vitality—a powerhouse nutrient essential for energy, muscle growth, and even oxygen transport in our bodies. Made up of 20 amino acids, nine of which our bodies cannot produce, protein fuels us in ways we often take for granted. For a healthy life, experts from the Indian Council of Medical Research (ICMR) and the National Institute of Nutrition (NIN) recommend consuming 0.83 grams of protein per kilogram of body weight daily. -

Yet, in a world increasingly sedentary and saturated with refined carbohydrates[1], India finds itself at a crossroads. The challenge? A dual burden of protein deficiency and rising obesity. But within this challenge lies an extraordinary opportunity to reshape our diets—and our futures—with the power of plant-based proteins.

The Protein Paradox

Despite its importance, over 80% of the population is protein deficient. The average protein consumption of the population is 47 grams/day against 60 grams/day. Almost 60% of Indians derive their protein from cereals and consume more carbohydrates and less protein[2]. The Right to Protein study reveals that while 95% of mothers are aware of protein, only 3% understand its vital functions.

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Traditional meals like roti or rice with dal are often considered sufficient, but they frequently fall short of the protein our bodies need. Add to this is the myth that "protein is only for bodybuilders".

However, the tide is turning. Walking, yoga, and running are increasingly popular, and studies show that individuals who exercise more frequently also prioritize higher protein intake. Government initiatives like the Mid-Day Meal Scheme, Fit India Movement, Eat Right India, and Poshan Abhiyaan are paving the way for a better future, with a focus on nutrition education and improving protein intake for children and families alike.

Plant-Based Proteins: The Future of Nutrition

In a post-pandemic world, health-consciousness is skyrocketing. Nearly 34% of Indians are exploring plant-based diets, driven by health benefits and environmental sustainability. With the world's largest vegetarian population, India is well positioned to lead the plant-based protein movement. According to research by IFF, soy remains the top plant-based protein of interest for use in foods and beverages. 84% of Indians say that increasing protein intake is a motivator for consuming plant-based foods and drinks[3].

Plant-based proteins such as soy, pulses, and legumes are rich sources of essential amino acids, sustainable, and easy to digest. Consider this: producing 100g of pulses emits just 0.84kg of greenhouse gases, compared to 19.85kg for lamb. These proteins not only nourish our bodies, but in a plant-based diet, also reduce the risk of chronic diseases like diabetes, hypercholesterolemia, and certain cancers[4].

A Thriving Market: From Tradition to Transformation

The Indian plant protein market is poised for growth, projected to rise from $0.91 billion in 2024 to $1.21 billion by 2029 at a CAGR of 5.85%. Soy protein dominates with over 60% of the market, while hemp protein is emerging as a fast-growing segment. Younger consumers are embracing veganism and plant-based alternatives, driving demand for dairy-free milk, yogurt, ice cream, and even plant-based meats.

Global innovation is pushing boundaries too, with products like plant-based eggs, bacon, and seafood taking center stage. In India, local flavors are being reinvented with options like plant-based keema, mutton biryani, and stuffed parathas, proving that healthy can be delicious.

The Call to Action: A Healthier You, A Healthier Planet

India's agricultural diversity, combined with a growing middle class and heightened awareness of fitness, makes the country a fertile ground for the plant-based protein revolution. As we embrace these sustainable alternatives, we're not just improving our health; we're reducing our environmental footprint.Yet, challenges remain—such as low consumer awareness, limited market penetration in lower-tier cities and allergenicity.

Consumers also perceive plant proteins as having inferior taste and texture, highlighting the need for innovation in product development to enhance both flavour and mouthfeel. But with innovation and education, these barriers can be overcome.The benefits are too significant to ignore; better health, a sustainable planet, and a more inclusive future for all. Plant-based proteins are more than a trend—they're a movement toward living better, together.

So, are you ready to fuel your body and protect the planet, one plant-based meal at a time?

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PRECISION FERMENTATION, THE FUTURE IS HERE

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Fermentation has been one of the oldest methods of food preservation (1), (2).

Evidence of winemaking by fermentation of fruit, honey, and rice has been found in neolithic China, dating back to 7000 to 6600 BCE. Humans were fermenting the milk of camels, goats, sheep, and cattle in 10,000 BCE. That was fermentation happening inadvertently by natural microflora present in the milk.

Scientific understanding of fermentation came to light in 1856 when Louis Pasteur found a correlation between yeast and the process of fermentation and defined it as “respiration without air”.

Cheese, bread, beer, and vinegar were some of the fermented foods in the West, that did not require refrigeration. The bacteria or yeast convert carbohydrates into alcohol or acids which act as preservatives.

In the case of most fermented foods, the knowledge and procedures of making these foods were passed on from generation to generation. In the mid-nineteenth century Because of industrialisation, there was a population shift from villages to towns and cities. Also, there was a better understanding of the process of fermentation.

The practice of making these foods conventionally was no longer feasible. That led to the development of processes for fermented foods on a large scale. In the late nineteenth century, isolation of starter cultures and manufacturing on a large scale was initiated.

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Conventional fermentation has been producing products that are consumed from time immemorial. That is how wine, bread, or traditional Indian products like Idli, dosa, and bhatura are made. Fermented products are also known for offering several health benefits (3). They are easy to digest and many anti-nutritional factors are removed. During the fermentation process, many enzymes, vitamins, and bioactive peptides are synthesized. Peptides like conjugated linoleic acid lower blood pressure, exopolysaccharides exhibit prebiotic properties, and bacteriocins have anti-microbial effects. Whereas, “Precision Fermentation” is more precise and gives specific ingredients or products (4).

Genetic engineering techniques are sometimes used to programme microorganisms giving them specific genetic codes to produce a particular compound of interest when fermented under precise conditions. This genetic code could be an exact copy of the DNA sequence found in the digitised database of the desired animal or plant DNA sequence. Therefore, molecularly identical ingredients are produced by microorganisms. At the end of the fermentation, the genetically engineered microorganisms are filtered out leaving behind only desired compounds or ingredients. Therefore, final products cannot be considered as a GMO product. The best example is scientists were able to isolate the “rennet” genes from animals and introduce them into microorganisms. Then during fermentation under specific conditions produce “chymosin” which is microbial rennet.

Reb M and Reb D, are glycosides in Stevia's leaves responsible for the sweetness. The content is less than 1%. Making sweeteners by traditional agronomic approach may not make it commercially viable. These compounds can be produced by the use of specifically crafted yeast. This can be used to produce the sweetener on a large scale. One Israeli company developed two strains of baker’s yeast. One was modified to secrete water-soluble yellow pigment and another to produce purple pigment. The combination of these two can give colours ranging from red, pink, and oranges which are stable across a wide range of pH. Such an effort will create healthy alternatives to manufacturing synthetic dyes in a sustainable way.

Precision fermentation technology is not restricted to producing chemicals. It can be used to replicate whole foods. Bio albumin which has the same functional and nutritional properties as egg white has been developed. Globally companies are involved in developing interesting and value-added products (5). Lactoferrin a functional food ingredient that is less than 100 mg per litre of milk, can be produced using genetically modified fungi. The product has obtained self-GRAS status in 2023 in the US and is expected to be released in the US market by 2024. There are many such examples where many target products are being developed. Following could be a few: beta globulin (whey protein), A2 beta casein, egg white protein, Type XXI collagen, bovine myoglobin, palm oil, animal fats, etc. This ability of precision fermentation to produce genuine animal proteins is generating interest in this technology. Precision fermentation can also be used to replicate whole foods such as animal-free beef burgers.

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With a rising global population worldwide and fears of climate change, feeding a growing population has become challenging. Precision fermentation will provide the probable solution (6). This does not require natural resources. It does not require land but it needs water in fermentation which is much less than the water needed for animals & plants to grow. It also needs nutrients to be fed to produce the final products. A high yield of food products can be achieved by using fewer resources. Reducing the carbon dioxide footprint of food production will reduce greenhouse gas emissions.

There are challenges in Precision fermentation technology. The most difficult one is scaling up to large-scale manufacturing. The process must achieve the same productivity and quality as a small-scale process while maintaining control over physical, biochemical, and process factors. Large-scale production requires high financial investment which is another big hurdle. There are safety and regulatory concerns and rigorous testing and approval processes are required. The use of genetically modified organisms will have ethical concerns from consumers. Each country has its regulations that affect the market development in that country. US FDA is relatively tolerant with a short review period of six months to one year. In contrast, the European Food Safety Authority is stringent. The taste acceptance by consumers could be another challenge.

There is another way of producing such products. With the help of the tissue culture technique, we can produce many such products without using genetically modified organisms. (6) Stem cells of animals or seafood are grown in bioreactors to mimic real meat. The first cultured meat burger was in 2013 by Mark Post, a Dutch scientist. Singapore Food Agency has approved these kinds of products in 2022 and products are sold in the eateries.

Both the “precision fermentation” and “cell culture” produce similar end products and are going to be the future of producing agricultural products in a sustainable and environment-friendly manner. They differ in many aspects. Precision Fermentation is mainly used to produce high-value products such as egg and milk proteins, colours, flavours, whereas cell culture is used to produce low-value products like textured meat cells. Precision Fermentation is easier to scale up, has faster growth cycles, has low carbon print, can use waste byproducts, and can claim animal free. The R&D cost of cell culture is high and the culture media may require non-vegan ingredients like Fetal Bovine Serum (FBS).

The precision fermentation market is growing rapidly. The market which was estimated to be worth USD 293 USD Million in 2021, is projected to expand at a CAGR of 38.73%. Many factors are responsible for growth including rising consumer demand for environment-friendly foods and drinks and veganism with fewer dairy products.

There are challenges like regulatory and safety concerns or scaling to get an ingredient or product at an affordable price. However, “Precision Fermentation”, which has been around for thirty years has immense potential to shape food ingredients and products in the future.

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EVOLUTION & OVERVIEW: HEALTH SUPPLEMENTS / NUTRACEUTICALS REGULATIONS

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Prior to FSSAI and the Regulations thereunder, products such as supplements or nutraceuticals were marketed as Proprietary foods under Prevention of Food Adulteration (PFA) Act 1954 & Rules 1955. There were different other sectoral regulations under various other ministries like Fruit Products Order or FPO, Meat & Meat Products Order or MFPO, Milk & Milk Products Order or MMPO etc.

Further, in early 2002 -03 with a definite objective to integrate food regulations under one authority, FSSAI was created under Food Safety & Standards Act 2006. All food and food products were categorized and shifted under the administrative control of FSSAI. The mandate of FSSAI was to create science-based standards and ensure safe wholesome food for consumer.

With the understanding to particularly differentiate between CONVENTIONAL and SPECIALISED products, a specific provision of specialised products like supplements, nutraceuticals etc. was included under Section 22 of FSS Act 2006 to define these products.

Under FSSAI specialised products were endorsed as "Proprietary Products" for licensing purpose. However, due to industry requirements, the proposal drafting of Nutraceutical Regulation started way back in 2012 under Section 22 and 92 of the FSS Act. Further, in 2016, the regulations were notified after due consultation with stakeholders and with a clear note that the regulation is an evolving process.

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The FOOD SAFETY AND STANDARDS (HEALTH SUPPLEMENTS, NUTRACEUTICALS, FOOD FOR SPECIAL DIETARY USE, FOOD FOR SPECIAL MEDICAL PURPOSE, FUNCTIONAL FOOD AND NOVEL FOOD) REGULATIONS, 2016 were first notified in December 2016 with an implementation date of 1st January 2018.

There were various amendments & directions were also issued with respect to the regulations. 2016 regulations had brought relief to this newly recognised sector but there were couple of limitations such as mere combinations of vitamins & minerals (supplement) were kept out of the purview of the regulation, which was eventually allowed and notified at a later stage vide orders/directions.

Post notification, the evolution of the regulation continues and there were couple of ingredients / nutrients etc. were added/deleted (including other amendments) till 2021.

A major overhaul was proposed in late 2021 with an objective to have a simple but harmonised regulation which is to be based on global best practices. In March 2022 new overhaul regulations Food Safety and Standards (Health Supplements, Nutraceuticals, Food for Special Dietary Use, Food for Special Medical Purpose, and Prebiotic and Probiotic Food) Regulations, 2022. [FSSAI (Nutra) Regulations, 2022] were operationalized superseding the 2016 regulations.

However, this regulation was very complicated with many challenges like certain additives and ingredients were removed/restricted having detrimental impact on existing formulations. Industry is still look forward to work with FSSAI to address these changes and have a harmonized regulation for ease of doing business.

FOOD EMULSIONS: THE SCIENCE OF MIXING THE IMMISCIBLE

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Introduction

Oil and water do not mix. However, foods like milk have proved otherwise. Milk has water with around 5% fat mixed. Many other convenience foods, such as frozen desserts, sauces and spreads, contain a mixture of water and oil that usually don't combine well and form separate layers. But how do fats and water stay evenly mixed without separating? These everyday delights are food emulsions, interesting mixtures of oil and water that create many delicious foods we enjoy every day. Food foams, such as whipped egg whites, contain gas (usually air) dispersed in a liquid, similar to emulsions. The same factors affecting the stability of emulsions also apply to foams. Some foods, like ice cream and whipped cream, are both emulsions and foams (1).

How Emulsions Are Prepared

Preparing an emulsion involves dispersing tiny droplets of one liquid within another liquid that do not mix forming a single consistent layer. In food emulsions, the two liquids are typically water and oil. The droplets are referred to as the dispersed phase, while the surrounding liquid is known as the continuous phase. If water serves as the continuous phase, it's termed an oil-in-water emulsion; if oil is the continuous phase, it's a water-in-oil emulsion. To achieve this mixture and ensure stability, an emulsifier is often added to prevent separation. This is carried out by the process of homogenization using a mixer or homogenizer.

Homogenization can be categorized into primary homogenization, where two separate liquids are mixed (e.g., salad dressing), and secondary homogenization, which reduces the droplet size in an existing emulsion (e.g., raw milk fat globules). High-speed blenders are the most common homogenizing devices in the food industry. They are effective for intermediate to low-viscosity products. Ribbon mixers are specialized powder blenders with helical ribbons on a central shaft. The ribbons move materials inward and outward as well as in forward and backward motion for efficient blending. Commonly used for dry blending, they are also used to prepare pastes (e.g., cake batter), and beverage formulations like protein shakes, iced tea, and energy drinks.

The colloid mill is ideal for homogenizing medium to high-viscosity food products. Achieving finer droplets may require a slower flow rate or multiple passes, which can increase manufacturing costs. High-pressure valve homogenizers are ideal for homogenizing small droplets in premixed emulsions, commonly used for milk. These homogenizers are well-suited for low to intermediate-viscosity products. Microfluidizers are also used to create stable emulsions (1,2).

Key Factors and Methods for Stabilizing Food Emulsions

The stability of an emulsion can be defined as the capability of the phases of the emulsion to remain mixed together. Emulsions can become unstable due to processes like flocculation, creaming, sedimentation, coalescence, and Ostwald ripening. Flocculation occurs when droplets cluster together forming flocs that can lead to separation. Creaming and sedimentation result from gravity, causing lighter droplets to rise and heavier ones to sink, forming distinct layers. Coalescence involves droplets merging into larger ones, reducing the emulsion's stability. Ostwald ripening happens when smaller droplets shrink, and larger ones grow due to solubility differences. These mechanisms of destabilization occur due to several factors such as the nature and concentration of the emulsifier or stabilizer, pH of the system, temperature, and interaction of dispersed with the continuous phase. Hence, maintaining temperature and pH is crucial in maintaining the stability of emulsions. Food emulsions can be stabilized using various methods to ensure product quality and shelf life. Emulsifiers along with thickeners and stabilizers play an important role in the stabilization of the emulsion. Emulsifiers reduce the interfacial tension between oil and water, allowing the formation of smaller droplets.

The hydrophilic-lipophilic balance (HLB) of an emulsifier is a key factor in determining its suitability. Emulsifier has both hydrophilic (water liking) and lipophilic(oil liking) groups. HLB system indicates proportion of these going from 0 to 20. Lower numbers indicate better oil solubility and higher better water solubility. Low HLB values 3-6 are good for water-in-oil (w/o) emulsions whereas high values 8-18 are suitable for oil-in-water emulsions. Lecithin has HLB value of 4 and polysorbate 80 has 15. Emulsifier of proper HLB value will enable more stable emulsion of oil and water.

Proper emulsifier concentration is also crucial as excessive amounts can destabilize emulsions due to over-emulsification. Thickeners and stabilizers enhance emulsion stability by increasing viscosity and slowing droplet movement. Stabilizers, like proteins and polysaccharides, form protective layers around droplets, mitigating freeze-thaw instability and coalescence (3,4).

Applications of Food Emulsions

- **Beverages:**

Beverage emulsions are a special type of emulsions designed for consumption in a highly diluted form. They are initially made as a concentrated emulsion, which is then mixed with a sugar solution to create soft drinks, either carbonated or noncarbonated.

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This adds flavour, colour, and cloudiness to the beverage. While other diluted emulsions like coffee cream are consumed quickly and don't need long-term stability, beverage emulsions must maintain their quality over time. In beverage emulsions, the difference in density between the flavour oils and aqueous phase poses a major challenge to its stability.

To adjust the density, Brominated vegetable oil (BVO) was previously used. After the ban on BVO, alternatives like ester gums and sucrose acetate isobutyrate (SAIB) are being used. Lecithin is a versatile emulsifier commonly used in various beverages, enhancing the creamy texture of products like chocolate milk and protein shakes. Mono- and diglycerides are found in coffee creamers and flavoured milks, contributing to a rich mouthfeel and improved sensory experience. Polysorbate is essential in the beverage industry for stabilizing emulsions and ensuring a consistent mixture in flavoured waters, energy drinks, and certain juices.

Beverage concentrates

are liquid or powdered products that consumers dilute with water before drinking. These formulations may include flavours, sweeteners, colour additives, and nutrients, resulting in a drinkable beverage. Due to their concentrated ingredients, they can spoil quickly, requiring stabilization with emulsifiers and polysaccharides like whey protein isolate and Gum Arabic to improve stability (5).

Functional Beverages

Functional beverages often contain add-ins such as vitamins, herbs, and proteins, and stabilizers keep these ingredients suspended to avoid settling and a gritty taste. Common stabilizers include hydrocolloids like xanthan, gum arabic, and gum acacia, pectin, carrageenan, modified starches, and casein. They enhance viscosity and body in beverages, maintain emulsification, and prevent sedimentation (6).

Fruit Drinks

Consumers today want beverages with added health benefits, which makes the formulation process more complex. The beverage industry responds by cutting calories and simplifying ingredient lists. A drink's cloudy look and thick texture suggest functionality to consumers. To make fruit juices appear freshly squeezed, manufacturers add specific cloud emulsions to imply that the juice is made from ripe, natural ingredients. Xanthan gum, a natural thickener, is often used in these drinks as a stabilizer for flavour and aroma, while also enhancing the texture (7,8).

- ## Bakery:

Emulsions are an important part of bakery products. For example, cake batter is an oil-in-water emulsion, where fats like oil or shortening are dispersed in water. Emulsifiers play a crucial role in mixing these fats with other ingredients by breaking them into smaller particles. While lecithin in eggs is sufficient for some homemade recipes, additional stabilizers or emulsifiers are often used in more intricate recipes or commercial production to ensure optimal texture, stability, and shelf life.

For instance, cakes that are moist, soft, and light are preferred by customers. Cake batters without emulsifiers may have large, uneven, and coarse fat particles scattered throughout, compromising the quality of the product.

Without emulsifiers, baked products can become dry, crumbly, and less appealing. They enhance the overall eating experience. Without them, there can be increased variability and waste during production, leading to higher costs.Different emulsifiers work in different ways, so it's important to choose the right one. The quality of the finished product might be compromised if an incorrect emulsifier is selected leading to improper development ofdough, texture or shelf life of the baked product.

Common emulsifiers include mono- and diglycerides, polysorbates, sodium stearoyl lactylate (SSL), and DATEM (Diacetyl tartaric acid ester of monoglycerides). When developing low-fat baked goods, adding emulsifiers can improve texture and mouthfeel. Stabilizers enhance the texture, appearance, and shelf life of food products. Common examples include gelatine, agar-agar, pectin, xanthan gum, hydroxypropyl methylcellulose (HPMC), and carboxymethyl cellulose (CMC). Stabilizers are essential ingredients in buttercreams and frostings, as they enhance stability, elasticity, and anti-sticking properties. They are used in various types of icings, such as flat icings—which are water-based and low in fat, making them suitable for cakes and rolls; fudge and fondant icings—which have a low-fat content and are partially aerated, resulting in high stability; and cream icings (9,10).

- **Spreads:**

  Spreads often complement products such as breads, and crackers. Typical spreads include dairy spreads (e.g. cream cheese and spreadable cheese), butter, margarine, and nut butters (e.g. peanut, hazelnut, and almond). Cream cheese is commonly used as an ingredient in products such as flavoured spreads and cheesecakes. However, the separation of serum (whey) following packaging is considered a significant defect that should be minimized. The primary role of stabilizers in cream cheese is to prevent syneresis during storage. The addition of stabilizers helps to reduce syneresis by increasing the viscosity of the aqueous phase. The most commonly used stabilizers in cream cheeses include xanthan gum, locust bean gum, guar gum, and carrageenan (11).

Peanut butter can separate into two layers if left at room temperature for too long, with oil floating on top and solid peanut bits settling at the bottom. To stop this separation, manufacturers add stabilizers, like partially hydrogenated vegetable oil, mono-, di-, or triglycerides of vegetable oils. These compounds can crystallize at low temperatures and allow to formation of a matrix that holds the oil in place and prevents it from separating (12). Mayonnaise is an oil-in-water emulsion. Ingredients like vinegar and salt play an important role in the stability and structure of the emulsion.

Vinegar's main role is to adjust pH, mayonnaise achieves peak stability when the pH reaches the isoelectric point of egg yolk proteins, reducing their surface charge and preventing flocculation. Salt disperses egg yolk granules, neutralizes protein charges for better adsorption on oil droplets, and brings oil droplets closer together for stronger interactions.

As health consciousness grows, formulators are increasingly developing low-fat products. In the case of low-fat mayonnaise, reducing the oil content impacts the sensory properties and the stability of the emulsion. Lowering fat levels increases the water content, which reduces the firmness and thickness of the emulsion. For low-fat versions, smaller droplet sizes can improve stability and create a creamier look. Additives like hydrocolloids can increase viscosity and emulsion stability by preventing droplet coalescence. Some commercially used emulsifiers and stabilizers include Hydroxypropyl distarch phosphate, starch sodium octenyl succinate, guar gum, and xanthan gum (13).

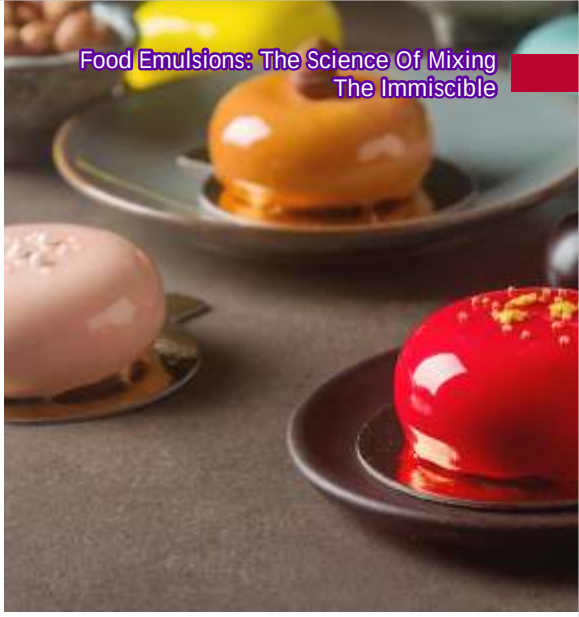
- **Processed Meat:**

A meat emulsion is a mixture where fat is evenly distributed within a protein matrix, though it differs from a classic emulsion as the phases are not liquids. Some of the examples include sausages, meatloaf, and salami. Meat proteins, actin and myosin serve as the emulsifying agents in a meat emulsion. Salt solubilizes proteins, which allows fat to mix with salted, chopped meat, forming an oil-in-water emulsion, which is stabilized by heating. pH significantly impacts the stability of meat emulsions. At optimal pH levels, meat proteins are more soluble, allowing better water retention, fat binding and a stable emulsion.

Additives like phosphates raise pH, improve water retention, and stabilize meat emulsions. Mono- and diglycerides of fatty acids effectively prevent fat and water separation and are commonly used in hot dogs, bologna, and meat spreads. Guar gum is a popular stabilizer that controls syneresis and prevents fat migration. Other additives like soy protein, starch, carrageenan, sodium caseinate, and whey further bind water and fat, improving emulsion stability(14).

Conclusion

Food emulsions are a fascinating concept involving science as well as culinary art. They have led to the production of many everyday foods like beverages, baked goods, spreads, and processed meats. The versatility of emulsions also supports the development of innovative products like low-fat and functional foods, meeting evolving consumer preferences for health and convenience. Understanding the science behind food emulsions not only improves product quality but also helps innovation in the food industry.



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NEWER PROSPECTS FOR SPORTS NUTRITION PRODUCTS:

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Sports nutrition products market has grown rapidly in recent years largely because more people are participating in sports and demanding proper nutrition for their activity. Another reason for this sudden interest is because of Covid pandemic that forced people indoors and they needed to keep fit by physical activity and to nourish the body with proper nutrients in order to acquire immunity to ward off any possible viral infections.

Global market has been estimated to be around 17 billion to 24 billion dollars currently, and is expected to reach as high as $45 billion. Although there are differences in estimates, they all show a very healthy growth in market for sports nutrition products.

Although present market for India may be small compared to global figures and estimated to be around Rs 1300 crores. However, the rate of growth is expected to be very high. The reason for this, besides Covid, is the interest in many sports and athletic activities especially younger generation. Many Indians have won international sports competitions besides cricket and that has encouraged youth to practice and participate in various physical activities not just to become fit but to play well. The interest has also spread into eating better food and as awareness of sports nutrition increased these products supplemented the diets as well.

Persons Requiring Sports Nutrition

Sports nutrition was originally developed for sportsmen. Their requirements depending of the kind of sports or events, their weight etc. were considered for recommendation. Some sports need bursts of energy such as swimming or sprinting short distances, gymnastics, etc.

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They need a lot carbs especially high GI or sugars. There are many team sports that may need moderate energy for longer periods. There are also long-distance races that require not just carbs of low GI but also replenishing them. Their hydration requirements are also different. So, depending on all these factors the products may be designed to suit the application.

Why Sports Nutrition Instead of Ordinary Diet

Although sports nutrition has been practiced for long, there have been many developments in the science that have advanced the knowledge of sports nutrition and the application to maintain fitness and peak performance of sportspersons. Earlier aim was to provide energy for physical activity and replenish the loss of water from body by perspiration to avoid dehydration. As more was known about nutrients and health promoting substances, many supplements became common ingredients in these products.

There are different types of sports, some requiring short bursts of intense activity and others needing longer duration of less intense physical activities. Each would need energy which is predominantly supplied by carbohydrates and to some extent fats and proteins. For shorter intense requirements e.g. 100 m sprint, only carbohydrates, especially glucose could be used. However, for milder activities glucose with fat could be used in brisk walks or long-distance events or slower sports like cricket.

Water was definitely needed as sportspersons perspired profusely in many sporting activities and unless this water loss is replenished, they may experience severe problems of dehydration. This would affect their performance and in long run may cause disabilities requiring treatments. Along with water several nutrients can help not only absorption of water but also improve performance. Water can also be a vehicle for providing energy nutrients and other substances.

Protein has now been recognized as essential nutrient not just for muscle building but even other sports to delay fatigue and to recover from wear and tear. Protein is an integral part of tissues and muscles and also part of enzymes that play vital role in various physiological activities during sports event.

Sports nutrition needs to be considered in three parts. Firstly, during practice sessions the body needs to condition and store some nutrients in body. Protein requirements per day are more than an average individual going over 1 g/kg bw/day. Body builders, weight-lifters, boxers etc. may need even 2 g/kg bw/day.

Carbohydrate storage as glycogen in liver and muscles needs to be built over time, so one must have fairly high level. During long duration event this store can sustain sportsperson without tiring out too soon. When glycogen stores are inadequate then energy is derived from body proteins.

Just before and during event also nutrition planning is important performing without loss of mental and physical alertness. The meal prior to event should not be heavy with protein and fat as it may cause gastric disturbance. Finally, after the event, recovery needs special nutrition to prevent any damage and aftereffects. For recovery, proteins are essential especially branched chain amino acid containing whey proteins. For certain events classified as per athletes' weight, nutrition becomes even more critical in all three stages.

There are some additional supplements that could improve performance but care must be taken to avoid any restricted substances.

Nutrients & Supplements

As mentioned earlier, protein requirements for sportspersons are much more than a sedentary person, depending on the kind of sporting activity. Also, as plant sources of protein have deficiencies in certain amino acids, in order to fulfil their requirements, one needs to consume much more plant-based food than animal food like milk, meat, egg and fish. The exception is soy protein which is equivalent to animal protein in quality.

Different proteins also have different digestion rates. Whey proteins get digested rapidly so the essential amino acid concentration in blood rapidly goes up. However, these drop soon, whereas casein digestion is slower but it remains in blood for a longer period so suitable for longer duration sports. Soy protein has shown intermediate behaviour. A mix of all three can provide essential amino acids at high level for a longer duration than any of these individually.

Carbohydrates could also be beneficially used. For immediate requirement high GI carbs or sugars are useful so for replenishing the lost energy during breaks, these would be useful. Even just prior to intense event, these may be useful. For long duration events, high GI carbs can slowly and continuously provide energy.

Besides protein, carbs and water sportspersons need other nutrients. As the person perspires, there is not just loss of water but also minerals such as sodium and potassium and others. These need to be replenished along with water to restore their balance but also when they are used water absorption is better. If plain water is consumed after heavy perspiration, blood will be diluted excessively, so the minerals from tissues will dissolve into blood rather than water diffusing into tissues.

Besides sodium and potassium, which may be needed during the sporting event, additional micronutrients may be needed during preparation and practice. Calcium, vitamin D and iron may be particularly useful for bone health and care should be taken to include these in diet.

Among other useful ingredients, caffeine has been shown to improve strength and endurance in many sporting events. Fish oil with omega-3 may improve sports performance and recovery from intense exercise. An important compound creatine which is an amino acid produced by body and also found in meat and fish is found to help energy production during short, high intensity activities. Beta-alanine, another amino acid found in meat and chicken, helps in forming carnosine which protects muscles in high intensity exercise when acid is produced.

Newer Opportunities

Times have changed since people were drinking isotonic salt beverages and eating fruits like bananas. There are pre-workout foods, products consumed during workout or sporting event and foods for recovery and so many formats including total meal replacement especially for those watching their weights for events. Generally, it is recommended that the normal diet with some changes to incorporate additional macro- and micronutrients or provided by supplements should be adequate. However, such a regimen is sometimes difficult so there are all kinds of sports nutrition products available to provide nutrition before, during and after workout or event.

As for different sports such as intense and mild, short and longer duration etc. there are different requirements these can be made ready. The easiest and most liked format can be snacks. These are easy to carry and consume at any place. Even liquid products could be consumed for providing nutrients along with the water that is so essential for any sports activity. There could be a large number of variable formats and nutrient contents that could be offered for different consumers.

Women in sports and physical activity have created additional opportunity as their requirements are different. There are many considerations concerning physiology that are different from men in sports. Thus, a range specially for female sportspersons and athletes are emerging.

Many consumers who are sports or exercise enthusiasts are demanding sports nutrition products. As they have started workouts in gyms, the instructors there may recommend many products to improve their performance. Care must be taken to get the proper advice from qualified nutritionists to avoid many side-effects when some of the potent sports nutrition products are consumed when not necessary.

In general, the future looks very bright for the sports nutrition products market as science is revealing their requirements and benefits for safe and highly competitive sports activity.

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REGULATORY ROUND UP

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Dear Readers,

PFNDAI wishes you all a very happy, healthy, and prosperous new year 2025!

Please find below new notifications, orders, etc. since the last round-up

Advisory for e-commerce FBOs on Strengthening Food Safety Compliance : The advisory urges e-commerce businesses to strictly adhere to food safety compliance. Several measures are suggested including i) training the delivery staff about food safety and hygiene practices and ensuring that food and non-food items are delivered separately. ii) product claims to align with the product's physical label, iii) The products sold must have at least 30%- or 45-day remaining shelf life at the time of delivery, iv) To prominently display FSSAI License/ Registration numbers and hygiene ratings.

Validity of FSSAI recognised Food Testing Laboratories : A list of FSSAI approved laboratories along with the validity of the NABL accreditation as of 12th December 24 is published. These laboratories will carry out the analysis of samples taken under FSSA 2006 and Rules and Regulations.

Revised list of FSSAI notified laboratories for testing of fortificants in Fortified Rice (FR), Fortified Rice Kernel (FRK), and Vitamin-Mineral Premix for FRK : The list of FSSAI approved laboratories that are approved to analyse fortificants in FR, FRK, and Vitamin-Mineral premix for FRK. This order supersedes the previous order dated 18.10.2024.

Sample Quantity of Imported Vitamin D2 : Vitamin D2 falls under the "food nor specified" category in FSS Laboratory regulations and as per the regulation the sample quantity to be drawn for analysis is 500g.As vitamin D is expensive, there was a request from the industry to draw lesser quantity for analytical purpose. Therefore, AOs are directed to draw only 50 g i.e. two samples of 25g each for the imported consignment. If the sample is cleared, the remaining sample to be returned to the food importer.

Provision for Quarterly Submission of Data Regarding Rejected and Expired Food Items : This is an important advisory regarding rejected, expired, and market-returned food items. The FSSAI licensed Food manufacturers (including repackers and relabellers)and importers are required to submit the information regarding quantity of rejected and expired food items on the FoSCoS system on a quarterly basis once it is made online. Till then, FBOs are required to maintain records of disposal of expired and rejected food items. This should be detailed report including details regarding quantities destroyed, auctioned or directed for alternative uses. It shall be uploaded as soon as soon the submission as the online provision is ready. This will enable food authorities to track such information on real time.

When is iron most bioavailable?

When it comes to essential nutrients, its vital to understand when they are at their most bioavailable. Iron is no exception. Iron is an essential nutrient for human health. A lack of it can lead to low energy, heart palpitations and shortness of breath, and even anaemia. Iron deficiency can also have long-term effects on the growth of children. For a human to take in enough iron in the food they eat, it must be bioavailable to allow for its absorption.

Bioavailability is an important concept in nutrition, as it determines how effectively the body can absorb and utilize nutrients like iron from the foods we eat. Factors such as the type of iron, presence of absorption inhibitors or enhancers, and a person's iron status can all affect the bioavailability of iron. Understanding bioavailability can help individuals make informed choices about their diet to ensure they are getting the nutrients they need for optimal health and well-being. Researchers continue to study and measure the bioavailability of various nutrients to better understand how they can be maximized for overall nutritional benefit.

According to Baumgartner, there are various factors that can affect the bioavailability of iron in the diet. Consuming non-haem iron along with vitamin C can increase absorption, while avoiding inhibitors like polyphenols and phytic acid can also improve bioavailability.

Additionally, processing methods such as fermentation and dephytinisation can enhance the absorption of iron. Iron fortification, while not always increasing bioavailability, can still increase the amount of iron absorbed by the body. Food manufacturers must consider not only the bioavailability of iron compounds added to foods, but also their impact on colour and flavour. Overall, there are several strategies that can be employed to improve the bioavailability of iron in the diet and ensure adequate intake for physiological functions.
How bioavailable iron can be incorporated into diets

The impact of nearly two years of elevated food inflation in India is felt keenly in government-funded school meals, as rising prices of essential ingredients like vegetables, fruits, and pulses force cutbacks in the quality of food provided to impoverished children.

The mid-day meal program, designed to entice children from economically disadvantaged backgrounds into school by offering them a basic meal, is now struggling to maintain its standards due to stagnant meal budgets. As a result, schools are forced to compromise on key ingredients, serving meals that are often lacking in essential nutrients. Families like Ranjit Nayak's, who already struggle to make ends meet on meagre daily wages, are feeling the pinch of rising food prices as well, relying on schools to provide their children's first meal of the day. The widening inequality in the world's fastest-growing major economy is starkly evident in the struggle of these families to put nutritious food on the table, despite the best efforts of the government to support them.

The persistent food inflation in India has had a significant impact on the government's school meal program, which has not seen a budget increase since October 2022. Despite the rising prices, the allocation for each student remains stagnant, making it challenging for schools to provide nutritious meals. The delay in increasing allocations for the current year, attributed to upcoming elections, has further exacerbated the situation.

Teachers have reported difficulties in serving fruits and green vegetables, resorting to cheaper alternatives like pumpkin, and raising concerns about the quality of milk given to students. This situation highlights the challenges faced by the education system in ensuring students have access to adequate nutrition in the face of rising food prices.

The government scheme mandates specific calorie and protein requirements for primary school meals, aiming to provide adequate nutrition to students. However, despite periodic audits, the daily nutritional levels are not consistently monitored or recorded. With limited data available on the impact of higher inflation and cutbacks in mid-day meals, concerns arise about the potential consequences on student health.

Given that a significant portion of the Indian population struggles to afford a healthy diet, the importance of nutritious school meals becomes even more pronounced. The combination of rising food prices and low wages further exacerbates the issue, as millions of workers earn below the recommended minimum floor wage needed for a balanced diet. With the lack of political will to address these challenges, there is a pressing need to prioritize and bolster nutritional schemes in times of economic hardship.

https://www.reuters.com/world/india/indias-high-food-inflation-leaves-less-lunch-boxes-poor-school-children-2024-10-11/

The science to overcome the global iron deficiency

Choosing the right iron ingredient for your supplement formulation is not as simple as it sounds. Balchem explains how to choose the right solution to deliver optimum absorbability and tolerability.

Iron is crucial for many biological functions, particularly for transporting oxygen around the body. Iron deficiency, which can lead to anaemia, affects a large portion of the global population, especially women and pregnant women. Traditional iron supplements often fall short in terms of absorption and tolerability.

Importance of Iron: Essential for energy metabolism, immune health, and cognitive function. Necessary for unleashing our full physical and cognitive potential. Anti-Nutrients Compounds like phytates in our diet can inhibit iron absorption by binding to it. Phytates are common in plant-based diets, making supplementation even more crucial.

Chelation Process: Binds minerals to the amino acid glycine, enhancing absorption and reducing interference from anti-nutrients.

Ferrous Bisglycinate shows up to five times greater absorption compared to conventional iron forms. Traditional iron salts can cause gastrointestinal discomfort.

Ferrous Bisglycinate offers better tolerability with a significant reduction in adverse gastrointestinal events.

A well-studied brand of Ferrous Bisglycinate, marked for its exceptional chelates and validated by extensive data. Supports enhanced bioavailability and high tolerability, helping consumers reach their full potential.

Chelation approach ensures that iron supplements are not only effective in terms of absorption but also gentle on the digestive system, making them a valuable choice for combating global iron deficiency.

https://www.vitafoodsinsights.com/vitamins-minerals/strike-while-the-iron-is-hot-the-science-to-overcome-the-global-iron-deficiency

Combining ingredients for synergistic health benefits

The growing trend of consumers seeking out products with synergistic ingredients for better health benefits has led to companies exploring innovative ways to combine ingredients to target multiple health areas.

With experts from key industry players emphasizing the importance of combining ingredients for enhanced efficacy and added value, consumers are increasingly looking for products that offer a holistic approach to wellness. This trend is particularly evident in the active and sports nutrition space, where multifunctional products combining different ingredients such as magnesium, creatine, vitamin K2, collagen, and sulphur are gaining popularity.

As consumers become more educated on ingredient synergies, companies are focusing on providing science-backed combinations that offer wider and greater efficacy, while also ensuring rigorous testing to validate the claims of synergy between ingredients. By carefully selecting and testing ingredient combinations, companies can create products that cater to the needs and demands of educated consumers seeking high-quality, effective, and convenient solutions for their daily health and wellness routines.

Balchem's Cole emphasizes the importance of ingredient synergies in delivering superior health benefits in products. By combining ingredients like collagen with MSM or vitamin K2 with minerals like magnesium, brands can create innovative solutions that offer holistic benefits and stand out in the market. Balchem is continuously exploring the synergies of its portfolio to help consumers optimize their health and performance.

The company's "Vital Trio" concept, which combines vitamin K2 with chelated magnesium bisglycinate and vitamin D, is a prime example of how brands can support consumers in achieving optimal well-being. By understanding how different ingredients interact and complement each other, brands can create products that offer enhanced nutritional value and promote overall health.

Maggie McNamara, VP of marketing at Gencor, emphasizes the importance of combining advanced delivery systems with key ingredients to enhance formulations' effectiveness. These delivery systems, such as LipiSperse, AquaCelle, Compressible Powered Oils, and PlexoZome, are backed by multiple human studies and significantly improve bioavailability and uptake by the body.

McNamara discusses popular ingredient combinations like collagen and curcumin for joint health and curcumin, PEA, quercetin, and resveratrol for anti-inflammation. She also highlights the potential of synbiotics, where pre- and probiotics are combined to support gut health and overall well-being.

By incorporating these synergistic ingredient combinations, products can provide comprehensive support for consumer health.

https://www.nutritioninsight.com/news/multifunctional-supplements-combining-ingredients-for-synergistic-health-benefits.html

Fortified food and supplement users had better nutrient intake profile

The study found that Japanese adults who consumed fortified foods, supplements or both had a more balanced and higher intake of essential vitamins and minerals compared to those who did not use these products.

The participants who incorporated these “health foods” into their diet showed an increased intake of fibre, vitamins, minerals, fruits, fish and seafood, and dairy products from their basic meals.

The fortified foods and supplements also played a crucial role in meeting the recommended intake levels of key nutrients such as thiamine, riboflavin, vitamin B6, vitamin C, and calcium.

However, there was a potential risk of overconsumption of vitamin B6 among some users, underscoring the importance of monitoring nutrient intake levels. The findings of the study could help guide future strategies for improving overall micronutrient intake in Japan and lay the groundwork for further research on a broader scale.

The study published in BMC Nutrition by researchers from Toho University, Japan, focused on analysing the dietary intake of 392 Japanese adults aged 20–69.

They estimated nutrient intake from four-day dietary records, taking into account intakes from base diets and total intake, which includes fortified food and dietary supplement intake.

Among the participants, 10% consumed fortified foods, 24% used supplements, and 31% consumed either product. Users were older than non-users, but gender and educational level were similar between the groups.

The study found that users were more likely to meet estimated average requirements for several nutrients, both from their base diets and total intake.

However, over 30% of participants still consumed inadequate levels of vitamin A, calcium, magnesium, and iron.

To address these deficiencies, various interventions are being explored, such as fortifying flour with dry vitamin A and incorporating beans and pulses into the diet to boost iron, zinc, magnesium, calcium, and fibre intake.

In their study, the researchers acknowledge several limitations that may have impacted the results.

One limitation was the short duration of the dietary record, only lasting four days, which may not accurately reflect participants’ overall eating habits. Additionally, the use of fortified foods was not taken into account if participants did not provide brand names, potentially underestimating nutrient intake.

The omission of supplement use in the study may also have affected the accuracy of sodium and potassium intake measurements. The sample size of the study was small and non-random, with all participants coming from welfare facilities, raising concerns about the generalizability of the findings.

Furthermore, seasonal effects on food choice in winter and potential misreporting of nutrient intake due to changes in dietary habits over the assessment period were noted by the researchers.

Despite significant differences in nutrient intake observed between users and non-users in the study, the authors suggest that further research with larger sample sizes is needed to confirm their findings.

https://www.nutritioninsight.com/news/research-reveals-that-fortified-food-and-supplement-users-had-better-nutrient-intake-profile.html

Targeted infant probiotics address colic

29 Oct 2024 Nutrition Insight

A blend of Bifidobacterium longum KABP-042 and Pediococcuspentosaceus KABP-041 has been proven to be an effective solution in reducing crying and fussing time in colicky infants.

The combination of these strains not only have protective effects on the intestinal epithelium but also possess anti-inflammatory benefits. Studies have shown that these probiotics inhibit a wide range of pathogens associated with colic and neonatal infections, produce acetate with anti-inflammatory and antimicrobial effects, and strengthen the intestinal barrier. Additionally, the strains have been found to mediate adhesion to human intestinal cells and induce the expression of important proteins for the immune system. The blend shows promise in treating Functional Gastrointestinal Disorders in infants and improving their gut health.

Another probiotic blend containing B. longum KABP-042, has been shown to have protective effects on the intestinal epithelium and provide anti-inflammatory benefits. A study highlighted by Espadaler focused on how the polyphosphate in B. longum KABP-042 is involved in energy storage functions and biosynthesis. This particular strain also contains an enzyme that digests human milk oligosaccharides, promoting a healthy gut colonization and increasing beneficial bacteria populations. HMOs are important for infant nutrition, supporting immune function and cognitive development. Comparing AB-Kolicare to other probiotics, including L. reuteri DSM17938, showed that AB-Kolicare is more effective in reducing crying and fussing time in colicky infants.

Ongoing studies are exploring AB-Kolicare's ability to modulate the microbiota, with promising preliminary evidence suggesting it can increase beneficial bacteria and reduce pathogenic bacteria to help reduce gastrointestinal discomfort. Parents seeking to improve the quality of their child's sleep may find AB-Kolicare to be a valuable solution.

https://www.nutritioninsight.com/news/targeted-infant-probiotics-ab-biotics-uncovers-how-ab-kolicare-addresses-colic.html

Vitamin D supplements may lower blood pressure in older people with obesity

Science Daily November 12, 2024

Vitamin D supplements may lower blood pressure in older people with obesity and taking more than the Institutes of Medicine's (IOM) recommended daily dose600 International Units (IU) per day, does not provide additional health benefits, according to new research published in the Journal of the Endocrine Society.

This research is significant as it sheds light on the potential benefits of vitamin D supplementation in specific populations, particularly older individuals with obesity and low vitamin D levels. The findings suggest that taking more than the recommended daily dose of vitamin D may not necessarily provide added health benefits, emphasizing the importance of following established guidelines. The study underscores the importance of addressing vitamin D deficiency, which is a common issue globally and has been linked to various health conditions.

The researchers studied 221 older people with obesity taking vitamin D supplements at either 600 IU/day or 3,750 IU/day over the course of a year and found supplementation decreased their blood pressure.The researchers found higher doses of vitamin D did not provide additional health benefits.

Overall, the study adds to the growing body of evidence supporting the role of vitamin D in maintaining cardiovascular health and potentially lowering blood pressure in certain populations. Further research is needed to fully understand the mechanisms underlying these effects and to determine the optimal dose of vitamin D supplementation for different individuals. In the meantime, healthcare providers may consider screening for vitamin D deficiency in older patients with obesity and low vitamin D levels and discussing the potential benefits of supplementation based on individual risk factors and health needs.

Rahme et al. Journal of the Endocrine Society, 2024; 8 (12)
DOI: 10.1210/jendso/bvae168

Children's gut bacteria may hold the key to diarrhea treatment

Science Daily November 13, 2024

Diarrhea claims the lives of 500,000 children each year in low- and middle-income countries. Danish and Ethiopian researchers have linked chronic diarrhea to a specific pattern of gut bacteria, a discovery that could pave the way for new treatments capable of saving lives.

The research conducted by Nielsen and Tesfaw highlights the critical role that the gut microbiome plays in the health of young children, particularly in relation to chronic diarrhea.

By identifying the specific bacterial imbalances associated with this condition, there is hope for developing more targeted and effective treatment strategies in the future. Understanding the complex interactions between our bodies and the bacteria that inhabit our intestines is crucial for promoting overall health and well-being, especially in vulnerable populations such as young children in developing countries. This study sheds light on the importance of maintaining a diverse and balanced gut microbiome for optimal immune function and disease prevention.

The findings of this study highlight the importance of a healthy balance of bacteria in the gut for overall gut health. By using DNA sequencing, researchers were able to pinpoint specific bacteria that are either beneficial or harmful to the gut microbiome in children with chronic diarrhea.

This knowledge could potentially lead to new treatment options that focus on replenishing beneficial bacteria and promoting the production of short-chain fatty acids in order to restore gut health and alleviate chronic diarrhea.

Further research is needed to fully understand the causes of this imbalance in gut bacteria and develop targeted interventions to help those suffering from persistent diarrhea.

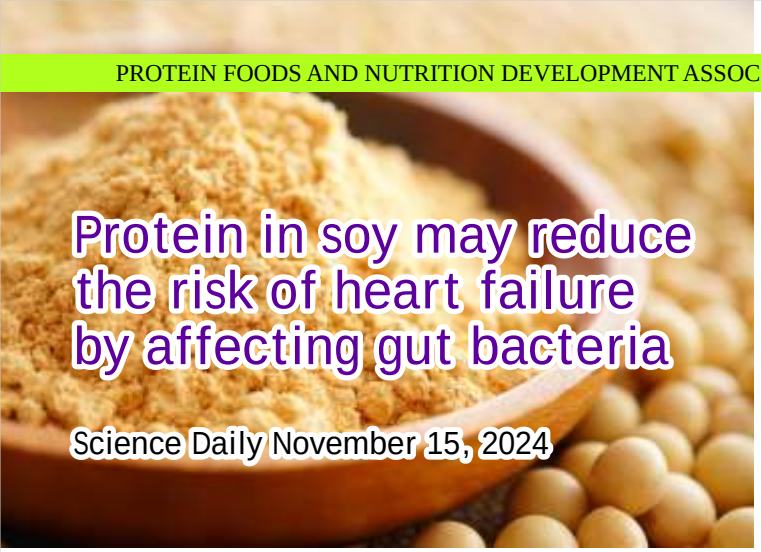
Mapping the gut bacteria in children with chronic diarrhea represents a significant advancement in understanding the underlying causes of this health issue.

By pinpointing the specific strains of bacteria that are out of balance in these children, researchers can now develop targeted treatments that aim to restore a healthy gut microbiome. One promising avenue of treatment is through the use of an optimal diet, with teff, a nutrient-rich grain from Ethiopia, identified as a potential key ingredient.

By focusing on developing a diet that is both familiar and sustainable for the local population, researchers hope to provide an effective solution for chronic diarrhea in children.

Further studies are necessary to fully explore the potential of teff and other dietary interventions, and securing funding for ongoing research is crucial for advancing our understanding and treatment of this prevalent health issue.

Tesfaw et al. Nature Communications, 2024; 15 (1)
DOI: 10.1038/s41467-024-51464-w



Protein in soy may reduce the risk of heart failure by affecting gut bacteria

Science Daily November 15, 2024

Researchers have found a potential method to slow heart failure progression. They fed mice a diet high in soybean protein, which influenced gut bacteria and supported heart health. Analysis showed that this diet increased the production of the short-chain fatty acids in the gut that help to protect the heart.

A team of researchers from Nagoya University Graduate School of Medicine discovered a promising approach to slowing down heart failure progression in mice. By feeding the mice a diet rich in soybean protein β-conglycinin (β-CG), which can impact the gut bacteria and support heart health.

Through their analysis, they found that the soybean protein-rich diet led to an increase in the production of short-chain fatty acids (SCFAs) in the intestines, which are important for heart protection. These findings were published in Clinical Nutrition.

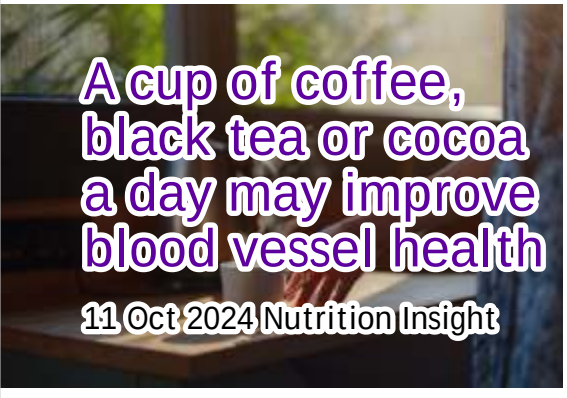
Furukawa and colleagues found that β-CG may help prevent heart damage by promoting the growth of SCFA-producing bacteria in the intestines.

SCFAs are known for their anti-inflammatory properties and role in maintaining intestinal health, but this study suggests they may also offer protection against heart damage caused by high blood pressure.

The researchers believe that their study could pave the way for novel approaches to managing heart disease by focusing on diet and gut health. By emphasizing the link between nutrition and bodily responses, particularly when it comes to heart health, there is potential for significant advancements in the treatment and prevention of heart failure.

Given that heart failure ranks among the leading causes of mortality globally, these findings have the potential to transform how we promote cardiac health.

Furukawa et al. Clinical Nutrition, 2024; 43 (12): 124
DOI: 10.1016/j.clnu.2024.09.045



A cup of coffee, black tea or cocoa a day may improve blood vessel health

11 Oct 2024 Nutrition Insight

A new investigation into the effects of caffeine on the cardiovascular system of immunocompromised patients reveals that regular consumption may have a positive effect.

In particular, vascular health — that concerning the functioning of blood vessels — may be boosted by drinking coffee, black tea or cocoa, it says.

The findings of this study offer a potential natural and simple way for patients with inflammatory rheumatic diseases to improve their vascular health and reduce their risk of cardiovascular events. This could be particularly important for those who are unable to tolerate certain medications or would like to incorporate additional lifestyle changes into their treatment plan. However, it is important to note that more research is needed to fully understand the impact of caffeine consumption on the disease course and to establish clear recommendations for patients.

In the meantime, patients with inflammatory rheumatic diseases may consider discussing their coffee consumption with their healthcare providers and incorporating moderate amounts of caffeine into their diet if they are not already doing so. If confirmed through further research, these findings could potentially lead to new dietary recommendations for patients with inflammatory rheumatic diseases, giving them more control over their disease management and potentially improving their overall quality of life.

https://www.nutritioninsight.com/news/a-cup-of-coffee-black-tea-or-cocoa-a-day-may-improve-blood-vessel-health-study-suggests.html

Scientists call for rigorous research to validate promising probiotic effects

03 Oct 2024 Nutrition Insight

The potential benefits of probiotics on mental well-being through the gut-brain axis are becoming increasingly evident, with promising results from research studies.

However, researchers emphasize the need for further in-depth and longitudinal studies to fully understand and clarify the beneficial effects of probiotics on the gut-brain axis and mental health. Despite the variability in methodologies and limited sample sizes in existing studies, functional MRI research shows that probiotics may have a positive impact on emotional regulation, cognitive processing, and brain function in conditions such as major depressive disorder and IBS. The findings suggest a potential link between probiotics, gut health, and brain function, prompting the need for interdisciplinary research to explore this connection further.

The review published in Frontiers in Nutrition highlights the growing interest in the effects of probiotics on brain activity. By analysing a total of 12 studies and 24 reports, the authors found that probiotics have a significant impact on functional connectivity in the brain, with potential implications for cognitive functions and psychiatric conditions. Despite the promising results, the authors acknowledge the need for more precise methodologies and better-controlled trials to fully understand the relationship between probiotics and brain health. They also emphasize the importance of addressing research gaps, such as the limited number of studies and the need for larger sample sizes and longer intervention periods. By conducting more rigorous studies with diverse populations and controlling for confounding factors, researchers may gain a better understanding of how probiotics can be used as a supplementary treatment in gastrointestinal and mental health care.

Crocetta highlights the challenges and complexities of researching the gut-brain axis, noting the limited number of studies due to the advanced techniques required. However, she emphasizes the potential for probiotics to influence not only gut health but also cognitive and emotional well-being, leading to an increase in research in the field. Market developments indicate a growing interest in products targeting the gut-brain axis, with companies collaborating with research institutes to develop science-backed biotics. The review offers new opportunities for companies to create specialized probiotics that target specific areas of brain function, suggesting the potential for personalized probiotics based on individual microbiome composition and cognitive indexes in the future. https://www.nutritioninsight.com/news/gut-brain-axis-scientists-call-for-rigorous-research-to-validate-promising-probiotic-effects.html

Citrus pectin may reduce anxiety and inflammation:

The potential benefits of pectin extracted from citrus peels are far-reaching, according to a new pilot study.

Researchers found that doses as low as 10 g per day may reduce anxiety and depression scores in healthy individuals, while higher doses showed potent anti-inflammatory activity. This study, conducted by the University of Nottingham and University College Dublin, focused on low-methoxy (LM) pectin found significant effects on a range of cytokines at a dose of 20 g per day.

The study suggests that pectin supplementation could offer a safe and cost-effective non-pharmacological approach to improving mental well-being in individuals dealing with anxiety. However, further research is needed to determine if these effects are also observed in clinical populations.

Pectin's chemical structure, particularly the ratio of esterified to non-esterified galacturonic acid units, plays a crucial role in its properties and behaviour, making it a versatile and potentially beneficial substance for various applications.

It suggests that LM pectin supplementation may help reduce anxiety and inflammation in healthy individuals. Key findings from this study include:Anxiety and Depression: A daily dose of 10 g of LM pectin was found to reduce anxiety and depression scores.Anti-inflammatory Effects: A higher dose (20 g/day) led to significant decreases in pro-inflammatory markers such as TNF-alpha, IL-1 beta, IL-6, and INF-gamma, along with increases in the anti-inflammatory marker IL-10.

The study involved two cohorts: one consuming 20 g/day of LM pectin or 10 g/day of a maltodextrin control, and another with increasing doses of LM pectin (5 g/day to 15 g/day) over six weeks.

https://www.nutraingredients.com/Article/2024/10/02/Citrus-pectin-may-reduce-anxiety-inflammation-Pilot-study/

High levels of omega-3, omega-6 may protect against cancer

Science Daily November 4, 2024

Fish oil supplements could help guard against overall risk of developing cancer. In addition to lowering your cholesterol, keeping your brain healthy and improving mental health, new research from the University of Georgia suggests omega-3 and omega-6 fatty acids may help ward off a variety of cancers.

Overall, the study provides strong evidence that higher levels of omega-3 and omega-6 fatty acids in the diet are associated with a reduced risk of developing cancer.

This finding reinforces the importance of incorporating these healthy fats into one's daily diet through foods such as fatty fish, nuts, and oils. For those who may struggle to consume enough of these foods, fish oil supplements can be a convenient and effective way to increase their intake of omega-3 and omega-6 fatty acids.

However, it's important to note that the benefits of fish oil supplements may vary depending on factors such as age, gender, and specific health conditions. The study highlights the need for personalized dietary recommendations, as some individuals may need to be cautious about increasing their intake of omega-3 fatty acids due to potential risks like prostate cancer.

Ultimately, individuals should consult with their healthcare provider to determine the most appropriate approach to incorporating omega-3 and omega-6 fatty acids into their diet in order to reduce their risk of developing cancer and improve overall health.

Zhang et al. International Journal of Cancer, 2024; DOI:

DOI: 10.1002/ijc.35226

Should men and women eat different breakfasts to lose weight?

It’s not a bad thing if you pick a toasted bagel for breakfast, while your partner chooses eggs.

In fact, according to a new study from the University of Waterloo, that difference could help you lose some weight.The study, which employed a mathematical model of men’s and women’s metabolisms, showed that men’s metabolisms respond better on average to a meal laden with high carbohydrates like oats and grains after fasting for several hours, while women are better served by a meal with a higher percentage of fat, such as omelettes and avocados.

“Lifestyle is a big factor in our overall health,” said Stéphanie Abo, an Applied Mathematics PhD candidate and the lead author of the study.

"We live busy lives, so it's important to understand how seemingly inconsequential decisions, such as what to have for breakfast, can affect our health and energy levels.

Whether attempting to lose weight, maintain weight, or just keep up your energy, understanding your diet's impact on your metabolism is important."

The study builds on an existing gap in research on sex differences in how men and women process fat.

"We often have less research data on women's bodies than on men's bodies," said Anita Layton, a professor of Applied Mathematics and Canada 150 Research Chair in Mathematical Biology and Medicine.

"By building mathematical models based on the data we do have, we can test lots of hypotheses quickly and tweak experiments in ways that would be impractical with human subjects.

Since women have more body fat on average than men, you would think that they would burn less fat for energy, but they don't," said Layton.

"The results of the model suggest that women store more fat immediately after a meal but also burn more fat during a fast."

Going forward, the researchers hope to build more complex versions of their metabolism models and extend beyond the consideration of biological sex by incorporating an individual's weight, age, or stage in the menstrual cycle.

https://uwaterloo.ca/news/media/should-men-and-women-eat-different-breakfasts-lose-weight

Locally made baby food in Cameroon addresses food insecurity in early childhood.

Science Daily October 15, 2024

Kayvey Nutri Foods is making significant strides in the fight against early childhood hunger in Cameroon with its locally produced and affordable baby food products.

With nearly 400,000 children at risk of acute malnutrition in the country, the need for accessible and nutritious food options is critical. By utilizing locally grown crops and strategic partnerships with research institutes and health organizations, it has been able to develop a high-quality product that meets the nutritional needs of young children.

The company's flagship product, Delight Cereal, is a nutritious porridge mix made from soybeans, corn, sesame seeds, Moringa leaves, and stevia.

This combination of ingredients provides a balanced source of protein, healthy fats, and essential vitamins and minerals to support the health and development of young children.

With a one-year shelf life and a focus on food safety and quality control, the company is able to distribute its products to hospitals, supermarkets, and retailers throughout Cameroon, reaching thousands of mothers and children in need.

Through continued innovation and expansion, the company is poised to make a lasting impact on childhood nutrition in Cameroon and beyond.

Scaling Up Cameroon's Locally Made Baby Food - IFT.org

The expanding universe of HMOs: From early life nutrition to innovative adult health applications

17 Oct 2024 Nutrition Insight

HMOs have long been recognized for their health benefits, particularly in infant nutrition and gut health.

As research in this field continues to expand, the applications for HMOs are also broadening. Experts from dsm-firmenich and Novonesis are exploring new uses for HMOs beyond infant formula, including in young children's milk, complementary foods, and adult supplements. There is growing interest in the potential health benefits of HMOs for conditions such as irritable bowel syndrome and inflammatory disorders, like atherosclerosis.

Additionally, HMOs are being investigated for their potential use in skincare products. With the global demand for HMOs on the rise, companies are working to increase accessibility to these beneficial ingredients, especially for infants who are unable to breastfeed.

The market for HMO ingredients in baby and toddler products is expected to continue growing, with a focus on creating products that closely mimic the composition of breast milk. This increase in demand is driven by a growing awareness among parents of the importance of HMOs for their children's health and development.

Mikš highlights that HMOs are stable and manageable in both production and application. The primary challenge is their high production cost, but efforts are underway to reduce expenses and expand their inclusion in more finished products. dsm-firmenich is leading the way as the only HMO supplier authorized to offer eight unique HMO structures in markets around the world.

These structures include neutral fucosylated HMOs like 2'-fucosyllactose, as well as neutral core HMOs such as lacto-N-tetraose and lacto-N-neotetraose. Additionally, there are acidic sialylated HMOs like 6'-sialyllactose available.

Batchelor emphasizes that all currently marketed HMOs are produced through microbial fermentation, and while there are over 150 HMOs found in breast milk, the commercialized ones are relatively simple in structure. However, future HMOs are expected to be more complex as they undergo multiple fucosylation or sialylation modifications.

Batchelor reveals that the future of HMOs is deeply rooted in science and clinically proven benefits, such as the recent clinical study on its MyOli5 HMO Mix. Collaborating with prestigious universities, Novonesis conducted a study to evaluate short- and long-term health outcomes with HMO supplementation. The study focused on the mechanism of action of HMOs, analyzing microbial metabolites and immune system maturation.

This dedication to research highlights a strong commitment to enhancing the understanding and efficacy of HMOs for promoting infant well-being. Looking ahead, synbiotics and specialized medical nutrition applications are expected to trend as science uncovers more ways HMOs can address specific health challenges.

With continuous advancements in research, the future of HMOs looks promising, offering more precise nutrition solutions that mimic breast milk for formula-fed infants and exploring synergies between HMOs and probiotics for enhanced health benefits.

The ongoing progress in biotechnology and fermentation processes also allows for the production of more complex and diverse HMO structures that closely mimic the diversity of oligosaccharides in human breast milk, further improving infant formula formulations for optimal growth and development.

https://www.nutritioninsight.com/news/the-expanding-universe-of-hmos-from-early-life-nutrition-to-innovative-adult-health-applications.html

FOOD SCIENCE & INDUSTRY NEWS

Researchers eliminate the gritty mouth feel: How to make it easier to eat fibre-rich foods

Science Daily November 20, 2024

Fiber is something that most of us get far too little of. To change that, we need to actually enjoy eating it. Food researchers from the University of Copenhagen have now invented a "disguise" that solves the problem of the dry and gritty mouth feel of fibres.

By finding innovative ways to incorporate fibres into foods and beverages without sacrificing taste and texture, we can help to address the global lack of fibre intake.

This can have a significant impact on reducing the risk of various chronic diseases and improving overall health. With the right approach, we can make consuming fibre-rich foods more enjoyable and accessible to people of all ages and backgrounds.

So, next time you think of drinking a juice with wheat bran in it, imagine a smooth and refreshing sensation that not only tastes good but is also good for your health.

Ahrné and a team of research colleagues have developed an innovative way to disguise fibres by encapsulating them in a gel coating inspired by foods like chia seeds.

The gel coating gives the fibres a velvety texture, masking their gritty sensation and reducing dryness in the mouth. This breakthrough has the potential to revolutionize the food and beverage industry, as the gel coating can be adjusted for different purposes and is quick and simple to produce.

With promising results from taste tests, this new method could lead to the widespread use of disguised fibres in various products, offering a solution to the challenge of incorporating healthy ingredients into foods without compromising on taste and texture.

In the long run, researchers are hopeful that their innovative idea of using gel coating to disguise dietary fibres in liquid foods could help tackle the growing health dilemma of inadequate fibre intake, especially among the elderly population.

Lilia Ahrné emphasizes the importance of developing fibre-rich products that are appealing to consumers to prevent digestive issues, unintended weight loss, and frailty in the aging population.

By incorporating fibre-rich by-products like bran from grains into everyday foods, this approach not only promotes better health but also contributes to a more sustainable and plant-based diet.

As the world's population continues to age and face nutrition-related challenges, finding practical solutions like camouflaged fibres in food products could have a significant impact on public health and well-being.

D'Oria et al. Food Hydrocolloids, 2024; 156: 110366 DOI: 10.1016/j.foodhyd.2024.110366

Industry spots technology solutions, delivery methods and up-and-coming omega-3 alternatives

31 Oct 2024 Nutrition Insight

The scientific community widely agrees on the importance of omega-3 fatty acids, specifically EPA and DHA, as essential nutrients with numerous health benefits.

These benefits include improving heart health, reducing triglycerides, supporting brain and eye development in infants, and protecting cognitive function later in life. As research continues to uncover new advantages of omega-3s, such as promoting better sleep, mood, and muscle recovery, the market for these supplements is experiencing significant growth.

Consumers are increasingly recognizing the value of omega-3 fatty acids for their overall health and well-being, driving the demand for products containing these important nutrients. With a wealth of clinical studies supporting their efficacy in various areas of health, omega-3s remain a popular and trusted supplement choice among consumers worldwide.

The shift towards plant-based sources of omega-3s is a key trend in the nutraceutical industry, driven by consumer interest in sustainable and alternative options. MacDonald points to the rising demand for algal omega-3 EPA and DHA products as a response to the supply shock in the fish oil market. Gelita'sJunginger also notes the increasing popularity of plant-based omegas as concerns around the sustainability of fish oil sources grow. GC Rieber VivoMega's Søfting highlights the company's focus on both fish-derived and plant-based omega-3 alternatives to meet the changing dietary preferences and environmental concerns of consumers.

With a commitment to quality, sustainability, and innovation, the industry is poised to continue diversifying omega-3 sources to meet the evolving needs of consumers.

The partnership between GC Rieber VivoMega and dsm-firmenich emphasizes the crucial role of technology in driving innovation in the omega-3 supplement industry. By leveraging advanced technologies, they are able to develop new consumption formats and high-dose powders that enhance the consumer experience and offer a wider array of health benefits.

Additionally, Gelita's expertise in gelatin and collagen peptides showcases the latest encapsulation trends for omega-3 supplements, with a focus on protecting the oils from oxidation and improving bioavailability.

Their innovative enteric solutions and customized gelatin products present efficient and cost-effective alternatives to traditional capsule production methods, ultimately leading to a more streamlined production process and improved quality of omega-3 products for consumers worldwide.
https://www.nutritioninsight.com/news/industry-spots-technology-solutions-delivery-methods-and-up-and-coming-omega-3-alternatives.html

Ella Foods elevates Indian offerings using age-old processes and modern science

24 Oct 2024 Nutrition Insight

Ella Foods by Bharat Biotech is at the forefront of revolutionizing Indian food, culture and science with its innovative use of technologies such as cryogenics, cold pasteurization and fermentation.

Dr. Jalachari Ella, company director, is showcasing their product portfolio at the SIAL trade show in Paris, highlighting the bridging of science and age-old recipes to create healthier foods for global consumers. Their cryogenically ground spice powders and natural fermentation pickles are examples of their commitment to quality, transparency and purity.

By combining cutting-edge technology with traditional preparations, Ella Foods is bringing the best ingredients to consumers worldwide, regardless of their cultural background. Their range of products, such as their gongura pickle, are not only delicious but also good for the gut, making them a versatile addition to any kitchen. Ella Foods is truly changing the landscape of Indian food and making it accessible to a global audience.

Indians have a wide array of ready meal options available on the market, but Ella Foods stands out by utilizing millet-based raw ingredients, which are gluten-free and offer a healthier alternative. The inclusion of pro- and prebiotics in their products sets them apart, as these ingredients are temperature stable and maintain their nutritional value when prepared. Ella Foods also takes pride in using real clarified butter in their formulations, giving their meals an authentic taste reminiscent of traditional Indian home-cooked dishes.

In addition, the company prioritizes sustainable ingredient sourcing by working closely with local farmers in India to ensure high-quality, low-residue ingredients free of unnecessary pesticides. Ella Foods' dedication to transparency and the well-being of their farmers sets them apart in the ready meal market, making their products not only delicious but also ethically produced.

https://www.nutritioninsight.com/news/sial-paris-2024-ella-foods-elevates-indian-offerings-using-age-old-processes-and-modern-science.html

Nutrition industry explores novel nutraceuticals

23 Oct 2024 Nutrition Insight

In a booming nutraceutical market, companies are leveraging technology and scientific research to develop innovative solutions that cater to changing consumer trends and demands.

According to Tammi Higgins from Lycored, challenges arise when exploring novel nutraceuticals and innovative delivery formats, particularly for nature-based solutions like their Lumenato Emulsion. Meanwhile, Maggie McNamara from Gencor highlights the significant growth and innovation in the industry, with a focus on personalized nutrition, clean label ingredients, targeted functional benefits, and technological advancements like nanotechnology and liposomal technology. Regulatory bodies are also tightening standards to ensure product safety and credibility.

Rob Brewster from Ingredients By Nature emphasizes the importance of keeping up with rapid changes in consumer trends and the impact of AI on the industry. With increasing demand for personalized nutrition, sustainable practices, and scientifically-backed claims, companies are continually evolving to meet the needs of consumers in the ever-changing nutraceutical market.

Juliana Erickson, global product innovation manager at Lonza Capsules & Health Ingredients, believes that the societal shift towards holistic health and well-being creates opportunities for brands to develop nutraceutical supplements that target multiple health benefits. She emphasizes the importance of technology in product development to meet evolving consumer trends and stand out in the competitive nutraceutical landscape.

Erickson highlights the benefits of capsule-in-capsule technology, such as Lonza's CapsugelDuocap dual-release capsules, which allow brands to create multi-ingredient, multi-benefit supplements to support holistic health needs.

Additionally, she stresses the need for effective delivery of complex ingredient combinations and the role technology plays in enhancing the efficacy of supplements.

Gencor's McNamara also emphasizes the importance of technology in improving bioavailability, functionality, and purity in the delivery format of nutraceutical supplements, citing the example of Rhodiola and the sustainable, ethical approach taken by Gnosis by Lesaffre in harnessing its benefits through innovative fermentation processes.

Overall, the combination of natural ingredients, scientific research, and technological advances is driving the development of innovative nutraceutical solutions to meet consumer demand for holistic health and wellness.

https://www.nutritioninsight.com/news/nutrition-industry-explores-evolving-consumer-demand-to-unlock-novel-nutraceuticals.html

Baking ingredient able to mimic gluten properties

16 Oct 2024 Nutrition Insight

A game-changing gluten replacer promises to revolutionize the gluten-free baking industry.

With its specialized HPMC blend that mirrors the properties of gluten, this innovative ingredient can seamlessly be incorporated into existing baking recipes without the need for reformulation. Trish Fellowes, ACI Group's food sales manager, is excited about the potential of Synevo to enhance product quality across a range of gluten-free bakery applications.

By streamlining the ingredient list and offering improved process stability, Synevo GR1 is set to give bakers the competitive edge they need in today's volatile market. With an unwavering commitment to innovation and customer satisfaction, ACI Group continues to lead the way in providing cutting-edge solutions for the baking industry.

Celiac disease, or gluten intolerance, can have a significant impact on an individual's ability to maintain a healthy diet. This autoimmune disorder can make it challenging for patients to consume the necessary nutrients for their body to function properly. In the US, there has been a push for gluten to be recognized as a major food allergen and labelled on all packaged foods to help those with celiac disease avoid potential risks. However, a recent report has revealed that some products labelled as gluten-free still contain traces of protein that could be harmful to individuals with this condition. As a response, advocacy groups like Moms Across America are calling for better quality control in the manufacturing of gluten-free foods.

On a brighter note, innovations such as gluten-free wheat starch and flour made from sweet potatoes offer potential solutions to help individuals with gluten intolerance maintain a balanced diet. These advancements demonstrate the continued effort to support those affected by celiac disease and provide them with safe and nutritious food options.

https://www.nutritioninsight.com/news/aci-groups-new-synevo-gr1-baking-ingredient-able-to-mimic-gluten-properties.html

How Asian trends are driving food tech adoption

The rotary evaporator can craft unique spirits that cater to specific tastes. Manufacturers in Asia are increasingly turning to advanced tools that were once confined to labs in order to meet demand for flavours, textures, and food safety, Swiss lab and production specialists BUCHI works with major brands as well as small and medium-sized enterprises. These firms are leading the way in using lab-grade tools in their production lines.

By using innovative scientific tools such as the rotary evaporator and freeze dryer, manufacturers in the F&B

industry are able to push the boundaries of traditional food production. The use of these tools not only allows for the creation of new and exciting flavours and textures, but also enhances safety, quality, and shelf life of products. The rotary evaporator, typically used for distilling solvents, can now be found in the kitchen where it helps concentrate ingredients and infuse beverages with pure essences.

This results in more potent and refined flavours, consistent batches, and extended shelf life. On the other hand, the freeze dryer, originally developed for preserving pharmaceuticals, is now being used to preserve the flavour, texture, and nutrients of ingredients in food production. Food brands are leveraging these advanced tools to create unique and appealing products that cater to the modern consumer. By blending tradition with science, manufacturers are able to streamline production processes and deliver high-quality products that meet consumer demand for innovation in the F&B industry.

As brands strive to meet evolving consumer demands, automation and digitalisation have become essential in streamlining operations and ensuring consistent quality. Dai noted that this trend is driven in part by the ongoing shortage of manpower in the industry, prompting a need to adapt quickly to maintain a competitive edge in a rapidly changing market. Near-infrared (NIR) technology is a prime example of how automation can enhance efficiency by allowing manufacturers to continuously monitor production processes instead of relying on post-production testing.

By passing NIR light through a sample and measuring how much light is absorbed by different components within the material, such as moisture, fat, protein, and sugar, this technology provides rapid, accurate insights into the composition of food products without the need for extensive sample preparation or laboratory testing.

With its ability to offer real-time data during food production, NIR sensors can help manufacturers detect and correct issues immediately, reducing waste, improving efficiency, and ensuring consistent quality standards are met. The X-Sential™ process sensor, a recent advancement in NIR technology, provides food producers with precise, real-time information about raw materials and in-process products, allowing for faster decision-making, improved control over processes, and better traceability of production batches.

In an industry where quality control and efficiency are critical, NIR technology is becoming an essential tool for staying competitive and meeting evolving consumer expectations.

https://www.foodnavigator-asia.com/Article/2024/10/02/from-lab-to-factory-how-asian-trends-are-driving-food-tech-adoption/

Food manufacturers return to a focus on innovation, invention

Food companies this year are launching new products and inventing new brands more so than they were two years ago, when supply chain disruptions and demand for food at home brought on by COVID-19 made keeping items on retail shelves the main goal. However, cost remains a major focus in 2024.

During the pandemic, the food industry faced numerous challenges, with supply chains and labour becoming increasingly complex.

However, as the world begins to emerge from the pandemic, there is a concerted effort to simplify and stabilize these systems. David VanenEinde, of Cargill, highlighted the importance of taking complexity and volatility out of supply chains to focus on growth.

While many companies initially cut back on SKUs during the pandemic, there is now a shift towards creating targeted products for consumers. A recent survey showed a return to innovation in the food processing industry, indicating a renewed focus on product development and meeting consumer needs. As the industry rebounds and adapts to the changing landscape, companies are finding new ways to thrive and grow.

Participants in the survey were asked to rate the importance of innovation, renovation, and invention to their companies in the upcoming months. The majority of respondents, 67%, rated invention as either a four or a five on the scale, which was an increase from the previous year's survey. Marjorie Hellmer, the president of Cypress Research, noted the significant change in professionals prioritizing invention. When asked about the factors influencing their product development and R&D strategy, cost reduction was the top concern at 59%, followed by clean label and convenience.

Additionally, the survey revealed that ingredient costs had risen by more than 10% for nearly half of the participants. In terms of ingredients prioritized for new product development, whole grains, ingredients to reduce calories, organic ingredients, and dietary fibre were among the top choices.

The survey results indicate a strong focus on innovation and strategic planning within the industry.
VanenEinde's statement that "There is no silver bullet" when it comes to addressing the various needs identified by consumers around health and wellness is a reminder that there is no one-size-fits-all solution. Each ingredient in the health and wellness industry has its own unique value proposition, and no single ingredient can drive a significant outcome on its own.

While there are clear trends emerging in the health and wellness space, there is still uncertainty about the best way to address these needs. VanenEinde emphasized the importance of a reliable supply chain and pointed to new technologies like precision fermentation and cellular meat as potential solutions. He highlighted the need for invention to solve these complex problems and provide stability in the supply chain.

https://www.meatpoultry.com/articles/30871-food-manufacturers-return-to-a-focus-on-innovation-invention

How are manufacturers making sugar reduction tech pay?

Sugar reduction has become a necessary part of food and beverage manufacture, but what technology is being used and how does it affect sales?

Manufacturers are cutting food and beverage sugar content for many reasons. One of the main reasons, however, is cost. The cost of sugar has risen sharply in the past year, with poor growing conditions central to the hike and likely to continue due to changing climates. Added to the higher input cost of sugar is an enforced tax in some EU nations on food and drink containing high levels of fat, salt and sugar. Manufacturers are also responding to calls from the EU to reduce sugar levels in food and beverages, as part of the Member State-led Sugar and Calorie Reduction Network, to make products healthier.

Reasons for Sugar Reduction: Rising Costs: Poor growing conditions and climate changes have driven up sugar prices. **Regulations and Taxes:** Some EU nations have taxes on high fat, salt, and sugar foods, prompting manufacturers to reduce sugar content. Health Initiatives: Calls from the EU to reduce sugar levels as part of the Sugar and Calorie Reduction Network.

Technological Innovations: Enzymatic Process: Nestlé's technology reduces intrinsic sugar in ingredients like malt, milk, and fruit juices by up to 30%, without adding sweeteners or bulking agents.

Gut Health Benefits: Sugar reduction generates prebiotic fibres that support the microbiome, adding a health benefit.

Consumer Preferences: Autonomy: Many consumers prefer to make their own health choices rather than having them imposed by governments or manufacturers.

Range of Products: Offering options from full-sugar to no-sugar can foster a sense of autonomy and satisfy diverse preferences.

Marketing and Sales: Health by Stealth: Reducing sugar levels without prominently labelling the changes can help consumers gradually adjust to the taste without rejecting the products.

Successful Examples: Gradual sugar reduction in children's yogurts and shift towards zero or low-sugar drinks demonstrate the potential for consumer acceptance.

Challenges and Considerations: Health and Environmental Concerns: There are concerns about the health effects and environmental impact of some sweeteners. **Consumer Trust:** Educating consumers and earning their trust is crucial for the success of reduced-sugar products. Navigating sugar reduction is complex but essential, and manufacturers are innovating to meet this challenge while maintaining product appeal.

Amano Enzyme USA's presence at the SupplySide West Exposition demonstrates their commitment to advancing the plant-based food industry through innovative enzyme technology.

By showcasing their tailored solutions for enhancing the taste, texture, and nutritional benefits of plant-based products, the company is proving itself as a valuable partner for manufacturers striving to meet the demands of health-conscious consumers.

The education session led by Amano Enzyme at the event will provide valuable insights into how enzymes and biotechnology are revolutionizing the plant-based food sector. By offering solutions to complex formulation and processing challenges, the company is helping its customers create tastier and healthier plant-based options that rival traditional animal-based products.

With a focus on optimizing mouthfeel, enhancing protein stability, and boosting flavour profiles, Amano Enzyme is at the forefront of driving innovation in the plant-based food industry.

https://www.foodingredientsfirst.com/news/amano-enzymes-microbial-innovations-elevate-plant-based-food-taste-and-texture.html

The sweetener industry has been facing increasing scrutiny due to health concerns and potential environmental impact.

However, new research from the Leibniz Institute for Food Systems Biology at the Technical University of Munich has identified potential anti-inflammatory effects of the natural sweetener thaumatin.

This discovery could potentially help restore the industry's reputation and open up new opportunities for product development.

The research team found that peptides generated during the digestion of thaumatin in the stomach can stimulate acid secretion in human stomach cells and affect inflammatory responses. This research sheds light on the health effects of sweeteners and highlights the importance of understanding how food compounds interact with the body's metabolism. As functional foods and beverages continue to grow in popularity, the industry will need to prioritize research and development to meet consumer demand for healthier alternatives.

Helicobacter pylori is a bacterium that can cause inflammatory stomach diseases, including stomach cancer, and is able to survive in the acidic environment of the stomach. With around half of the world's population infected with this pathogen, finding a way to treat it is crucial. Thaumatin, a natural sweetener, could be a potential solution as it has been found to reduce gastric inflammation.

This presents a huge opportunity for the food and beverage industry to develop and market functional products targeted towards consumers concerned about inflammation. The rise in popularity of functional foods and beverages can be attributed to consumers seeking products that offer health benefits beyond basic nutrition, fitting in with their healthy, active lifestyles. Functional foods and beverages claim to have additional health-promoting functions, making them a key trend in the industry.

[Could anti-inflammatory effects of thaumatin boost sweetener industry?]

Industry experts explore emerging ingredients in mental health supplement space

08 Oct 2024 Nutrition Insight

Consumers are increasingly prioritizing their mental health and are seeking out dietary supplements that can support mood and overall mental wellness.

The nutrition for mental health category is becoming more important, with consumers realizing the strong connection between their body and mind. As science continues to uncover new possibilities around the gut-brain axis, products like psychobiotics are gaining popularity for their ability to support mental health. The future of microbiome research is promising, with more advancements expected in the field of mental wellness.

Consumers are now looking for supplements that are effective, natural, sustainable, and safe without any negative side effects. The conversation around mental health and the microbiome is still in its early stages, but there is a growing understanding of the importance of taking proactive care of mental health through supplements.

As research continues to advance, there are exciting possibilities for the development of innovative products that can further enhance mental wellness.

As the popularity of wellness beverages and mood-lifting gummies grows, Gnosis by Lesaffre's product manager for SAMe, Lorena Carboni, highlights the increasing attention and praise that SAMe is receiving. She references recent meta-analyses that demonstrate the potential efficacy of SAMe in alleviating depressive symptoms, both as a monotherapy and in combination with antidepressants.

Carboni emphasizes the importance of considering an ingredient's safety profile and quality when formulating mental health products, and she touts Gnosis' SAMe as a green choice that meets strict quality control measures.

Their Adonat Premium SAMe is produced in a European factory under cGMP standards, ensuring superior quality and efficacy. With a commitment to maintaining the high quality of their SAMe products, Gnosis is dedicated to providing a potent asset for supporting healthy mood and mental well-being.

As assistant manager of international business at EnovateBiolife, Russtam Irani emphasizes the importance of ingredients with substantiated research in the mental health category. He highlights the long-standing use of adaptogenic botanicals like ashwagandha and ginseng to support a healthy stress response. Additionally, Irani notes the increasing interest in nootropics such as bacopa and ginkgo for cognition and memory support. With a growing awareness of the connection between omega-3 fatty acids and mood support, he emphasizes the essential roles of vitamins, minerals, and amino acids in mental and emotional well-being.

Looking ahead, Irani sees opportunities for brain health products to cater to a wide range of consumers, including younger individuals seeking cognitive support and working professionals in need of stress relief and improved focus. He stresses the importance of consumer education to drive familiarity and acceptance of natural ingredients that can enhance mental energy, brain function, focus, and mood across different age groups. Overall, Irani believes that the demand for ingredients supporting both physical and mental performance will continue to rise as healthy aging becomes a global priority.

https://www.nutritioninsight.com/news/industry-experts-explore-emerging-ingredients-in-mental-health-supplement-space.html

Four health conditions helping to drive functional products growth in Asia

Asia consumers' holistic approach to healthy living is increasingly driving demand for functional products, with sleep, immunity, hydration and gut health trending.

People are taking preventive actions to address health concerns before they impact their well-being, fuelling demand for products that meet these needs, says market intelligence firm Innova Markets Insights.

Consumers in Asia are increasingly looking for food and beverages with functional benefits that can help them improve their overall health and well-being. According to Fellicia Kristianti, customer success manager for APAC at Innova Markets Insights, trends and consumer attitudes revealed by surveys conducted from 2023 to 2024 show that consumers are focusing on products that can help improve sleep, boost immunity, promote hydration, and support gut health.

With 59% of consumers in Asia eating more whole plant foods and a significant percentage consuming products that support body functions, it is clear that there is a growing demand for multi-dimensional functional products. Brands across Asia have been responding to these demands by offering products that make multiple health claims, such as the yuzu honey water from Japanese brand LB and the Oiishi Immune Care series from Kirin. With a focus on nutritious, fresh, natural, balanced, and safe products, consumers in Asia are taking proactive steps towards maintaining their physical and mental well-being.

As consumers in Asia become increasingly health-conscious, the demand for products containing beneficial ingredients like Omega-3, herbal and botanical extracts is on the rise. From protein shakes for children in Malaysia to fibre-infused drinks in the Philippines and zero-sugar beverages in China, innovative functional beverages are continually being introduced to the market.

Omega-3 supplements are also gaining popularity, with claims of supporting skin and brain health. Additionally, herbal and botanical ingredients like moringa, aloe vera, and mushrooms are being incorporated into products to support digestive health and overall well-being.

The focus on preventive nutrition is driven by a desire to age well and feel good at every stage of life. With a shift towards prioritizing mental health alongside physical well-being, products with mood-enhancing and stress-relieving properties are becoming more prevalent.

Brands are launching products that claim to improve sleep, reduce anxiety, and promote inner calm to cater to the growing demand for holistic wellness solutions. The emphasis on healthy ageing is also evident, with products targeting skin and eye health gaining traction among consumers.

Overall, the trend towards functional and mood-boosting ingredients reflects a broader shift towards a more holistic approach to health and well-being in Asia.

In India, Slimza has introduced a high-protein cream and onion flour snack that not only tastes great but also claims to prevent skin ageing and hair loss. This exemplifies the trend of brands prioritising taste while also delivering nutrition to consumers.

According to Kristianti, health brands are now focusing on providing indulgent treats that come with added benefits for both emotional and physical wellbeing.

Other innovative products include Neutrogena's 3D-printed skin-nutrient gummies, Boke's probiotic dark chocolate, and Greenfields' UHT Extra Milk with various health claims.

Asian consumers are increasingly seeking nutritional benefits in their food products, with younger consumers in particular prioritising mental health and wellness.

Going forward, functional ingredients with mood-related benefits are expected to become more prevalent in the food and beverage sector.

https://www.foodnavigator-asia.com/Article/2024/10/01/prioritising-prevention-trends-and-opportunities-for-targeted-health-

Personalised diet breakthrough signals future of industry

29 Oct 2024
Food Ingredients First
by Gaynor Selby

New gut health research could be beneficial to personalised nutrition brands fighting for consumer interest.

Personalised nutrition has gained traction in recent years, popular with consumers looking to improve their health through foods and beverages. Such is the appeal of personalised nutrition to consumers, Statista valued the global market at $8.2bn in 2020, predicting the figure to double by 2025. Now, researchers at Yale University believe they've made a breakthrough, which could revolutionise personalised nutrition, increasing its importance and further strengthening its appeal.

The research conducted by Yale Microbial Sciences Institute could greatly boost the personalised nutrition industry by providing a deeper understanding of how individual gut bacteria interact with dietary molecules. By mapping out how different gut microbes metabolically process various food compounds and understanding how that process impacts health, researchers can use this information to develop personalised nutrition plans based on an individual's unique microbial genes and responses to different foods and beverages.

This new knowledge could help address diseases such as diabetes and other health conditions by guiding individuals towards dietary changes that are specifically tailored to their microbiome. With the growing interest in gut health and the interconnectedness of the gut microbiome with overall wellbeing, this research could have a significant impact on the way people approach their health and nutrition.

Personalised nutrition, also known as precision nutrition, is a tailored approach to dietary advice based on an individual's genetic makeup, lifestyle, and environmental factors.

By taking into account factors such as dietary habits, health status, gut microbiome, and genotype, personalised nutrition aims to promote overall health and well-being. The future of personalised nutrition looks promising, with researchers focusing on understanding how metabolic reactions vary between individuals and how these differences impact the composition of gut bacteria.

This knowledge may lead to custom dietary recommendations that could help prevent diseases such as cancer, diabetes, and gastrointestinal infections. As the personalised nutrition industry continues to grow, advancements in technology, such as AI, are expected to drive further innovation in this field.

Additionally, maintaining a healthy gut microbiome, which plays a crucial role in digestive health and immune function, is essential for overall well-being.

Consuming prebiotics, probiotics, and postbiotics can help support the growth of beneficial bacteria in the gut and maintain a healthy balance of gut flora.

Researchers are also exploring the connections between gut health and other bodily systems, such as the gut-brain axis and the gut-skin axis, highlighting the importance of gut health in preventing chronic diseases and promoting overall health.

https://www.foodnavigator-usa.com/Article/2024/10/22/personalised-diet-breakthrough-could-boost-industry/

Reducing methane emissions from cattle is a crucial step in fighting climate change, and the use of seaweed supplements in cattle feed could be a game-changer.

The results of the University of California, Davis study show that this simple addition to the diet of grazing beef cattle can significantly reduce methane emissions without negatively impacting their health or weight.

With the potential to cut emissions by almost 40%, this research offers a practical and sustainable solution for ranchers looking to lessen the environmental impact of their livestock.

The widespread adoption of seaweed supplements in cattle feed could have far-reaching implications for the livestock industry and help to reduce the carbon footprint of pastoral farming worldwide.

By making this additive easily accessible to grazing animals, ranchers have the opportunity to play a significant role in combating climate change while meeting the global demand for meat.

As we continue to explore innovative solutions for reducing greenhouse gas emissions, the use of seaweed supplements in cattle feed could be a key component in creating a more sustainable and environmentally friendly future for livestock farming.

https://www.foodingredientsfirst.com/news/feeding-cows-seaweed-cuts-methane-emissions-by-almost-40-study-reveals.html

Plant-based alternatives found to match or surpass animal products nutritionally worldwide

03 Dec 2024 Food Ingredients First
By Venya Patel

Latest research highlights the benefits of plant-based meat and milk alternatives, demonstrating their potential to offer healthier and more sustainable options compared to animal-based products.

The study found that plant-based alternatives generally have a lower environmental impact, requiring less land and water while producing fewer greenhouse gas emissions.

Additionally, plant-based meat substitutes were found to contain less saturated fat and more fiber than traditional meats, offering a more beneficial nutritional profile.

However, the research also identified key challenges facing the plant-based industry, including inconsistent fortification practices and high levels of salt and sugar in certain products.

This highlights the importance of fortifying plant-based alternatives with essential micronutrients such as vitamin B12, iron, and calcium, to ensure they provide a well-rounded nutritional profile.

The report emphasizes the need for industry cooperation and government support to promote the development of healthier and more sustainable plant-based products, urging manufacturers to prioritize health and environmental sustainability in their formulations.

https://www.foodingredientsfirst.com/news/plant-based-alternatives-found-to-match-or-surpass-animal-products-nutritionally-worldwide.html

Soy does not raise risk of estrogen-related cancers, says USDA-funded study

02 Dec 2024 Food Ingredients First
By Benjamin Ferrer

This University of Toronto study provides important reassurance to women about the safety of consuming soy foods, particularly after menopause, when concerns about estrogen-related cancers may arise.

The analysis of over 3,000 participants across 40 randomized controlled trials found that soy isoflavones, which have estrogen-like properties, did not have any impact on key markers related to estrogen-related cancers.

This dispels the common myth that soy consumption may increase the risk of developing these types of cancers, showcasing the safety of soy as a food and even as a potential therapy for menopausal women.

The study's findings also highlight the dual benefits of soy consumption during menopause, as it can help alleviate symptoms like hot flashes and may reduce the risk of developing cardiovascular disease.

With the beneficial effects of soy on both the cardiovascular system and menopausal symptoms, this research supports the inclusion of soy foods in a balanced diet as a plant-based protein source.

Overall, the study contributes to a growing body of evidence supporting the safety and potential health benefits of soy consumption for women, particularly during the menopausal phase of life.

https://www.foodingredientsfirst.com/news/soy-does-not-raise-risk-of-estrogen-related-cancers-says-usda-funded-study.html

Scrutinizing sodium: Food formulators target reduced salt alternatives without compromising taste

04 Dec 2024 Food Ingredients First
By Gaynor Selby

As the deadline for the US Food and Drug Administration's (FDA) sodium reduction targets approaches in January 2025, the food industry is already making strides to reduce salt content across various food categories.

With over 70% of total sodium intake coming from processed and commercially prepared foods, the push for lower sodium options is more important than ever. Consumers are increasingly aware of the health risks associated with high sodium intake and are looking for tasty, healthier options on store shelves.

Manufacturers are focusing on reducing sodium in everyday food items like bread, meat products, snacks, sauces, and beverages to meet this demand. Brands are getting creative with innovative solutions that maintain taste while cutting sodium levels.

Companies like Kemin Food Technologies and ADM are offering sodium-reducing solutions and technologies to help food processors reformulate products with less salt without sacrificing flavor or quality. With consumer demand for reduced sodium options on the rise, the industry is proactively working towards meeting regulatory guidelines for healthier food choices.

ADM, like Kemin, recognizes the increasing demand for sodium reduction in various food categories, particularly in savory and salty snacks. This demand presents a unique challenge as consumers still expect a certain level of saltiness in their snacks. To address this challenge, ADM is focused on developing flavor modulation methods that can help brands balance the salty taste with lower sodium content.

Additionally, ADM is working on reducing salt in convenient products like ready meals, soups, dips, and more. With the expansion of alternative protein options, ADM also sees a need for reduced sodium content in meat and plant-based alternatives. Looking ahead, ADM believes that sodium reduction solutions will continue to be a key focus in food innovation, and manufacturers must proactively incorporate these solutions in their formulations to meet evolving consumer trends and expectations.

https://www.foodingredientsfirst.com/news/scrutinizing-sodium-food-formulators-target-reduced-salt-alternatives-without-compromising-taste.html

Health experts welcome UK's "long overdue" junk food advertising ban to curb obesity in children

04 Dec 2024
Food Ingredients First
By Gaynor Selby

Overall, the response from health officials and nutritionists to the UK government's crackdown on junk food advertising has been positive, with many viewing the new legislation as a step in the right direction towards reducing childhood obesity rates.

The stricter guidelines set to be enforced from October 2025 have been welcomed as a long-overdue move to prioritize children's health and well-being.

However, there is some confusion and mixed reactions surrounding the inclusion of certain products in the restrictions, with many arguing that foods like porridge and yogurt, which contain important nutrients despite small amounts of sugar, salt, or fat, should not necessarily be classified as junk food.

Despite this, the majority of health professionals agree that for too long, unhealthy products have been allowed to dominate children's screens, influencing their eating habits and contributing to rising childhood obesity rates. The measures are expected to remove billions of calories from UK children's diets and prevent thousands of cases of childhood obesity, highlighting the potential impact of tighter advertising restrictions on public health.

https://www.foodingredientsfirst.com/news/health-experts-welcome-uks-long-overdue-junk-food-advertising-ban-to-curb-obesity-in-children.html

Consumer concerns around AI use in food manufacturing pose threat to industry, shows research

05 Dec 2024 Food Ingredients First
By Louis Gore Langton

The survey results highlight the importance of transparency and education when it comes to the use of AI in the food and beverage industry.

With a large portion of consumers believing that products made with AI may be less safe, it is clear that there is a need for companies to communicate more effectively about the benefits and safety of using AI in production. Failure to do so could result in public fear and misunderstanding, similar to what happened with GMOs in the past.

The generational divide in attitudes towards AI in the food industry also points to the need for tailored communication strategies. Younger generations are more likely to view AI positively, while older generations are more skeptical.

By engaging with consumers and providing clear information about the use of AI in food production, companies can build trust and allay fears.

Ultimately, it is crucial for the F&B industry to approach the use of AI cautiously, ensuring that the public is kept informed and that any cost savings are passed on to consumers without negatively impacting employment.

https://www.foodingredientsfirst.com/news/consumer-concerns-around-ai-use-in-food-manufacturing-poses-threat-to-industry-shows-research.html

Boosting senior nutrition: Multivitamin food fortification solution in Japan

08 Nov 2024 Food Ingredients First
By Benjamin Ferrer

In Japan, Rohto Pharmaceuticals and dsm-firmenich debut Vision R — multi-layered micronutrient granules designed to address nutritional insufficiencies among seniors. The food fortifying ingredient utilizes dsm-firmenich's patented Sprinkle It Technology (SIT).

SIT is based on a proprietary low-moisture, short-time extrusion process, which produces stable, highly compacted nutrient granules. Instead of traditional capsules, tablets or encapsulated products, SIT's patented technology uses a natural matrix made from semolina and wheat starch, enabling vitamins to be integrated "seamlessly" into food.

This innovative Sprinkle It Technology (SIT) developed by Rohto Pharmaceuticals and dsm-firmenich offers a unique solution to address micronutrient insufficiencies in the Japanese population. The multi-layered matrix of each granule not only protects the micronutrients from environmental elements but also ensures their potency is retained without compromising taste or texture.

With nearly 90% of the ingredients being sourced from Europe, the product upholds high quality standards and adheres to strict European regulations. The launch of this product in Japanese medical institutions this month is expected to make a positive impact on the nutrition and overall health of the country's aging population.

By 2050, dsm-firmenich highlights 2.1 billion people — more than 20% of the global population — will be over 60. However, the company notes that research shows there is a ten-year gap between life expectancy and health expectancy, or those years lived in good health feeling well and mostly free of disease.

The statement highlights the significant impact of lost years to ill health on public health systems and the resulting heavy burden on governments. It is important to have solutions like SIT in bridging the gap between life expectancy and health expectancy through dietary interventions.

Xampla's innovative micro plant polymer shells offer a solution to preserve the quality and efficacy of vital ingredients in food enrichment, ensuring that probiotics remain effective until digestion.

This technology not only extends the shelf life of ingredients, but also protects them from sunlight and degradation during transportation and storage, making it a valuable tool for enhancing the nutritional value of food and beverages.

https://www.foodingredientsfirst.com/news/boosting-senior-nutrition-dsm-firmenich-unveils-multivitamin-food-fortification-solution-in-japan.html

Consumers are rejecting fat-free foods and beverages

This shift in consumer preference means that manufacturers need to adapt and innovate to meet this new demand.

They need to focus on creating products that are not only low in fat but also low in sugar and other unhealthy additives. The days of relying solely on a reduced-fat or fat-free label to sell products are over.

Manufacturers need to be transparent about the ingredients in their products and ensure that they are truly healthy options for consumers. This means re-evaluating their recipes, reformulating their products, and investing in research and development to stay ahead of the curve. The era of reduced-fat and fat-free products may be over, but it presents an opportunity for manufacturers to evolve and provide consumers with truly nutritious and wholesome options.

However, as consumers have become more educated about nutrition and the importance of including healthy fats in their diets, the appeal of reduced-fat and fat-free products has waned. Many people now understand that fats are an essential macronutrient that provide important health benefits, such as aiding in nutrient absorption and supporting brain function. This shift in consumer attitudes has led to a decline in sales for low- and no-fat products across various food categories. Brands like Yeo Valley Organic are taking note of this trend and adjusting their product offerings to meet the changing demands of the market. As full fat options continue to gain popularity, it seems that the era of reduced-fat and fat-free foods may be coming to an end.

Consumers are rejecting reduced-fat and fat-free products for a variety of reasons, but the primary driving force seems to be a better understanding of the nutritional value of full-fat options. With a growing awareness of the potential negative effects of heavily processed and artificially modified foods, consumers are turning to more natural and wholesome choices. Research indicating that full-fat products can be more beneficial for gut health has also played a role in this shift in consumer preferences.

As a result, the food industry is responding by offering more full-fat options and scaling back production of low-fat and fat-free alternatives. With the focus now turning towards low-salt and low-sugar products, it seems clear that consumers are seeking out nutrient-dense, minimally processed options for their diets.

https://www.foodnavigator.com/Article/2024/10/01/decline-in-demand-for-reduced-fat-and-fat-free-products/

REGULATORY NEWS

Food labelling update: Researchers call for mandatory access to nutrition information in online shopping

18 Oct 2024 Nutrition Insight

This lack of accessible, legible food labelling in online grocery shopping has real and concerning implications for public health.

Without clear information on nutrition facts, ingredients, allergens, and more, consumers are unable to make informed choices about the food they are purchasing. The research conducted by the Friedman School of Nutrition Science and Policy found that only 35.1% of items had all the required labelling information available online.

This discrepancy between the abundance of marketing claims and the scarcity of essential food information highlights a significant gap in federal regulations. The FDA requires this information to be on food packaging but has not extended this requirement to online retailers. It is clear that action needs to be taken to ensure that consumers have access to the information they need to make healthy choices when shopping for food online.

As the popularity of online grocery shopping continues to rise, there is a growing concern about the lack of accessible nutrition and ingredient information on food retailer websites.

Cash questions why online food retailers have not taken the initiative to make this information available to consumers before regulatory action is taken.

He suggests two possible solutions to address this issue - either regulators could pass new legislation to compel food retailers to provide labelling information, or the US government could establish a public database for packaged foods. Julia Sharib, the study's first author, also calls for updated regulations in the online grocery sector to ensure consumers have easy access to essential information.

The study found that access to ingredient lists and nutrition facts plays a crucial role in improving population health, as it allows consumers to make informed decisions about their food choices. Without proper labelling on online grocery websites, consumers may not be able to accurately assess the healthfulness of the foods they purchase.

As such, it is essential for regulators and the industry to work together to ensure that this information is readily available to consumers, rather than placing the burden on them to search for it.

Nutri-Level labelling: Indonesia plans new food labelling laws to mandate front-of-pack grading scheme

The Indonesian government has proposed new regulations that would mandate the use of its upcoming Nutri-Level front-of-pack traffic light labelling system.

The Indonesian government's proposal to mandate the Nutri-Level front-of-pack traffic light labelling system for high-sugar, high-salt, and high-fat food products reflects a commitment to promoting healthier eating habits among its citizens.

Modelled after Singapore's successful Nutri-Grade system, which categorizes processed foods as either A, B, C, or D based on their nutrient content,

Nutri-Level will provide consumers with clear and easily comprehensible information about the nutritional value of the products they are purchasing.

The decision to include Nutri-Level in the draft regulations underscores the government's determination to combat the rising rates of diet-related diseases in the country.

By gradually implementing this system across the food and beverage industry, Indonesia is taking a significant step towards improving the overall health and well-being of its population.

The first phase of Nutri-Level implementation will focus on ready-to-drink beverages that are determined to have C or D levels, to be followed by other processed food items moving forward.

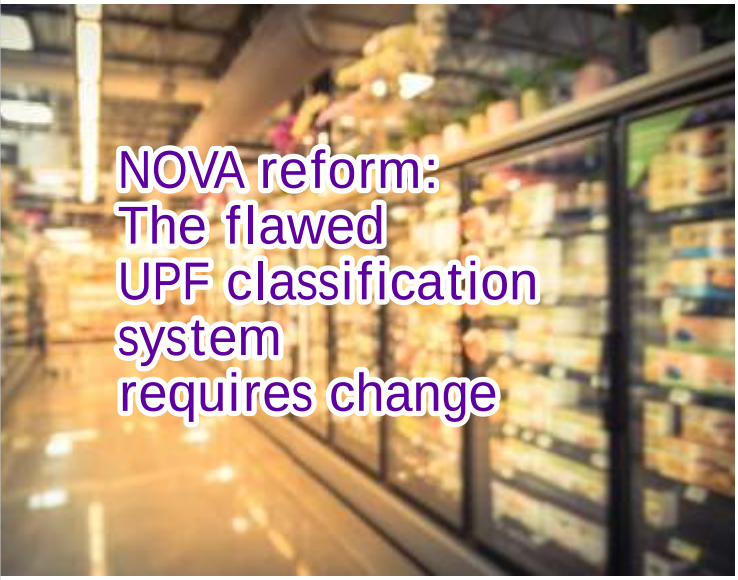
The agency believes that including this nutritional information on labels will help the public make more informed choices about the food and beverages they consume.

In addition, BPOM is preparing to introduce a Healthier Choice Logo on packaging for products that meet certain criteria, aiming to help consumers easily identify healthier options.

The draft regulations also outline specific criteria that products must meet in order to display this logo, such as limits on sugar, salt, and fat content. Serving sizes on product labels must also be clearly specified, in accordance with the criteria outlined in the regulations.

Overall, these new regulations aim to provide consumers with clear and helpful information to support healthier dietary choices.

https://www.foodnavigator-asia.com/Article/2024/10/02/indonesia-plans-new-food-labelling-laws-to-mandate-nutri-level-front-of-pack-grading-scheme/



NOVA reform: The flawed UPF classification system requires change

Some nutritious foods under the current NOVA system could be demonised alongside unhealthy variants.

The Thai FDA first announced it would be revamping the regulations for pre-packaged food labels back in September 2023,with an emphasis on expiry dates and allergen warnings.

The new regulations also require manufacturers to Industry's calling for reform, but what would the next generation look like?

The NOVA classification – a framework for grouping edible substances together, based on the extent to which they have been processed – has been a source of controversy and heated debate, since its introduction in 2009.

The NOVA-UPF screener, developed in Brazil, has been lauded as a simple and quick tool to assess and monitor the consumption of processed food products.

A spokesperson for a recent study, published in the BioMed Central journal, highlighted the benefits of the NOVA system.

However, critics have pointed out that the classification system oversimplifies a complex subject and lacks essential information for consumers.

FoodDrink Europe spokesperson raised concerns about the inability of the NOVA classification to provide sufficient criteria for dietary guidance, indicating that nutritious foods could be unfairly demonised.

As discussions continue about potential updates to the NOVA system, the food and beverage industry may need to consider whether they would adopt such changes.

The Novo Nordisk Foundation is backing a two-year project led by Professor Susanne Bügel at the University of Copenhagen to develop the next generation of the NOVA classification system.

The project, running from January 1, 2025, to December 31, 2026, aims to restructure the current system and take into account the nutritional content and food matrix of ultra-processed foods. The food matrix refers to the chemical and physical components of food that affect digestion and metabolism.

With recent studies linking ultra-processed foods to health risks like type 2 diabetes, the need for a more precise classification system is evident. The project not only seeks to rectify misclassifications but also focus on the mechanisms behind processing and nutritional value.

The ultimate goal is to establish a viable alternative to the current NOVA system, with input from both original creators and critics.

This development may prompt a reformulation trend in the food and beverage industry, as brands strive to enhance their products' nutritional value to align with the new classification system.

The NOVA classification system provides a helpful way to categorize different types of foods based on the level of processing they have undergone.

By dividing foods into four groups, from unprocessed to ultra-processed, consumers can make more informed choices about what they are putting into their bodies.

Group 1 includes whole, natural foods like fruits and vegetables, while Group 4 consists of highly processed products that often contain additives and artificial ingredients.

Understanding where different foods fall on the NOVA scale can help individuals make healthier choices and avoid overly processed items that may not be as beneficial for overall health.

Ultimately, the NOVA classification system encourages a focus on whole, minimally processed foods for optimal nutrition and wellness.

https://www.foodnavigator-usa.com/Article/2024/10/28/nova-reform-what-will-the-next-generation-system-look-like/

A growing body of research has suggested that the consumption of ultra-processed foods (UPF) has severe consequences for health.

However, some researchers are now suggesting that many of the studies on UPFs and their adverse effects on health are not accounting for the differences in processing and ingredients of certain subgroups. Experts say that avoiding certain UPFs like deli meats, hot dogs, sugary drinks, and salty snacks are of greater importance than attempting to avoid anything processed at all.

Overall, the debate surrounding the health effects of ultra-processed foods is complex and multifaceted. While many studies have raised concerns about the negative impacts of UPFs on health, a new opinion paper suggests that these claims may need to be reassessed. It highlights the importance of considering the differences in processing and ingredients among various subgroups of UPFs, rather than painting them all with the same brush.

Registered dietitian nutritionist Melanie Murphy Richter emphasizes that not all processed foods are inherently unhealthy, and that the focus should be on how they are processed, the type of ingredients used, and how they fit into an individual's overall dietary pattern. Board certified bariatric surgeon Mir Ali stresses the importance of looking at the level of additives in UPFs, as foods with more additives are typically more processed and potentially less healthy. This nuanced approach underscores the need for a more thorough understanding of the complexities surrounding processed foods before making broad dietary recommendations or policy decisions.

The NOVA system is a categorization method that classifies foods based on the level and type of processing they undergo. Ultra-processed foods, which fall under the most processed category, are described as industrial creations made predominantly from substances like oils, fats, sugars, and proteins derived from natural foods. These foods typically contain additives such as modified starch, hydrogenated fats, colouring, and flavour enhancers.

Examples of ultra-processed foods include ready-to-eat meat products, sugary beverages, dairy-based desserts, and processed breakfast cereals. Experts caution against consuming these foods regularly, as they can lead to various health issues such as insulin surges, blood sugar spikes, weight gain, and cardiovascular diseases. However, the classification of ultra-processed foods as a whole may not be entirely accurate, as certain subgroups of these foods may pose fewer health risks. Further research and experimentation are needed to fully understand the impact of ultra-processed foods on human health.

One aspect of UPFs that make them appealing to consumers is their price point relative to many natural or organic products. However, it is important to note that there are nuances within the overall UPF label, as certain subgroups within this category can offer health benefits. For example, fortified cereals have been instrumental in reducing the incidence of neural tube defects in infants, while whole grain breads and cereals provide a convenient source of complex carbohydrates, vitamins, and minerals.

Yogurt, although technically ultra-processed, can offer health benefits when low in added sugars and fortified with probiotics. While affordability and convenience are important factors to consider, making a conscious effort to prioritize minimally processed foods can lead to a healthier diet overall. By combining minimally processed foods with fresh ingredients whenever possible, consumers can strike a balance between convenience and health.

https://www.medicalnewstoday.com/articles/not-all-ultra-processed-foods-are-made-alike-researchers-warn-against-villainizing-entire-food-group

Industry breakthrough in the fight against fake foods

Counterfeit food and beverage products are a significant issue affecting both consumers and manufacturers.

Counterfeit food includes products that are contaminated, adulterated, or falsely labelled. Examples include fake parmesan cheese and imitation wines.
A major issue with fake honey involves mixing it with substances like sugar syrup to increase volume. A study found that 46% of honey samples in Europe were adulterated.

Scientific Solutions:Spatial Offset Raman Spectroscopy (SORS): Researchers at Cranfield University developed this technique to detect sugar syrup adulteration in honey without opening the jar. It identifies the "fingerprint" of each ingredient and is effective, quick, and non-invasive.

DNA Barcoding: This method, used by Dr. Maria Anastasiadi and her team, analyses honey samples to detect adulteration and confirm the origin of added syrups. It has proven to be a sensitive and reliable technique for identifying food fraud.

These advancements help protect consumers by ensuring the authenticity of food products.

Genuine suppliers can safeguard their products and avoid financial losses due to counterfeit goods."Detection of sugar syrup adulteration in UK honey using DNA barcoding," published on 5 August 2024,

DOI: 10.1016/j.foodcont.2024.110772.

https://www.foodnavigator.com/Article/2024/09/12/How-the-industry-is-fighting-back-against-fake-foods/

"Colour to communicate" gains ground as tighter regulation drives F&B innovation

23 Oct 2024 Food Ingredients First

The move toward natural colours is gathering pace as consumer pressure for naturalness ramps up and governments introduce legislation prohibiting artificial colours or limiting the scope of synthetics. Colour innovators turn toward natural ingredients to provide the striking and vibrant colours consumers are looking for without compromising on vivacity, functionality and stability.

As senior global marketing manager at Colours& Savoury Flavours at ADM, Kelly Newsome is at the forefront of understanding how rapidly advancing technology impacts consumer preferences for colours and sensory experiences. In ADM's 2025 Flavour&Colour Trends Report, she highlights the shift towards embracing "new human nature" and exploring different facets of the human experience.

By revisiting memories and reinventing traditions, consumers are seeking simplicity and authenticity, with shades of red symbolizing familiar food experiences.

Additionally, as consumers adapt their eating habits to reflect wellness and cost concerns, yellow and orange hues are becoming popular choices, reflecting desires for satiety and savoury richness.

Newsome's insights into how emerging consumer preferences are shaped by technology and human experiences are instrumental in driving new product innovations in the industry.

In the world of food and beverage, colours play a crucial role in not only appealing to the senses but also conveying deeper messages and emotions. Catalina Ospina, a technical marketing specialist at Givaudan Sense Colour, highlights the importance of using colours to match trendy flavours and ingredients, as well as to communicate abstract concepts like feelings and aspirations.

Ospina mentions a variety of emerging trends in the colour arena, from connecting with nature through botanical flavours and pastel hues to the bold and adventurous appeal of exotic street food inspirations with vibrant and intense colours.

Dieuwertje Raaijmakers, a marketing communications specialist at the GNT Group, emphasizes the role of colours in setting first impressions and communicating the identity and quality of a product.

With a growing focus on sustainability, Raaijmakers mentions the importance of creating colour schemes that reflect eco-friendly practices and appeal to environmentally conscious consumers. Both Ospina and Raaijmakers highlight the importance of using colours thoughtfully and sustainably in the ever-evolving world of food and beverage.

In response to global consumer demand for natural colours derived from nature, governments are cracking down on the use of artificial colours in food products. Examples of this include California banning red dye No.3 and restrictions on titanium dioxide. With pressure from regulators and consumers, the food industry is shifting towards using colours from natural sources.

Givaudan Sense Colour is leading the way in this transition, offering natural colours sourced from fruits, vegetables, and botanicals to create visually appealing products with clean label appeal.

They work closely with regulatory groups and manufacturing sites to ensure compliance with evolving standards. As the industry moves towards natural colour solutions, companies like Givaudan are helping food manufacturers navigate this significant shift in food formulation.

https://www.foodingredientsfirst.com/news/color-to-communicate-gains-ground-as-tighter-regulation-drives-fb-innovation.html

Food labelling update: Researchers call for mandatory access to nutrition information in online shopping

18 Oct 2024 Food Ingredients First

The absence of accessible, legible food labelling in increasingly popular online grocery shopping "has tangible consequences for public health," according to new research by the Friedman School of Nutrition Science and Policy, US.

Food information, such as nutrition facts, ingredients or allergens, is not always accessible to US consumers when they buy food online. The researchers note that this is a pervasive problem. The team researched ten online retailers, representing at least 79% of the US online grocery market in 2022, evaluating a basket of 60 F&B items. On average, the FDA-required labels for Nutrition Facts, ingredients, allergen statements and share of juice for fruit drinks were only present, accessible and legible for 35.1% of items. In addition, data availability varied widely by retailer (6.6%–86.3%).

The study's findings highlight a significant gap in federal regulations when it comes to the availability of essential food information online. While the FDA mandates that food manufacturers include nutrition facts and ingredient lists on packaging, this requirement is not consistently met by online grocery retailers.

With over 45% of products missing crucial information and marketing claims overshadowing nutritional details, consumers are left in the dark about what they are purchasing. The researchers suggest that new legislation or a public database of food information could help bridge this gap and ensure that consumers have access to the information they need to make informed food choices.

As online grocery shopping becomes increasingly popular, it is imperative that regulations are modernized to protect consumer rights and promote health and transparency in the food industry.

The study, published in Public Health Nutrition, focused on a range of food products commonly found in supermarkets and the importance of providing access to ingredient lists and nutrition facts for consumer health. The authors utilized a formula used by the USDA for food assistance programs to assess the nutritional content of various food items.

According to the authors, research shows that having access to this information can help consumers make healthier choices and avoid misconceptions about the healthfulness of certain foods. With the rise of online grocery shopping, the need for accurate and easily accessible nutrition information is more crucial than ever. People with allergies, specific dietary needs, and health conditions rely on food labelling to make informed decisions about their purchases.

It is emphasized that both regulators and the food industry have a responsibility to ensure that this information is readily available to consumers, rather than placing the burden on individuals to seek it out themselves.

https://www.foodingredientsfirst.com/news/food-labeling-update-researchers-call-for-mandatory-access-to-nutrition-information-in-online-shopping.html

As the next set of HFSS restrictions loom in the UK, food and beverage manufacturers should expect further challenges in how they market their products.

With a ban on volume price promotions set to come into force in October 2025, companies will need to rethink their pricing strategies and find new ways to promote their products.

In addition, the advertising restrictions on digital and pre-watershed TV will further limit the reach of HFSS products to consumers.

It's clear that the UK government is serious about tackling unhealthy eating habits and obesity, and manufacturers will need to adapt to these new regulations to remain competitive in the market.

It will be crucial for companies to carefully review their product portfolios and make any necessary adjustments to comply with the upcoming rules.

Mixed messaging from the UK's Labour party following their recent election victory has left many in the food and drink industry unsure of what to expect in terms of marketing regulations for HFSS products.

While Labour's shadow health secretary previously indicated a more collaborative approach with companies, the new prime minister has pledged to move forward with restrictions on junk food advertising and social media promotions.

Industry advocate Ian Wright warns that manufacturers must prepare for potential regulatory changes, as the government's focus on obesity reduction and healthcare costs will likely impact their business models in the coming years.

The shifting political landscape highlights the need for companies to adapt to new realities and navigate the uncertain future of marketing HFSS products in the UK.

In the rush to reformulate and avoid restrictions in the coming months, food manufacturers in the UK and Europe may face a number of challenges. Luke Withers, industry leader at Lockton, highlights the potential for resource scarcity and supply chain challenges as companies scramble to find new ingredients and alternatives.

Managing the risks and perceptions of new sweeteners and alternative products will also be critical, as well as considering the operational and strategic risks associated with these shifts in business models.

With pressures mounting, it is essential for companies to assess how these changes may impact their current risk registers and explore new emerging risks.

Additionally, there is an opportunity for the industry to come together and create a unified narrative in response to potential campaigns for stricter regulations on ultra-processed foods.

By working collaboratively and proactively addressing these challenges, food manufacturers can navigate the changing landscape successfully.

https://www.foodnavigator.com/Article/2024/07/25/HFSS-How-can-manufacturers-prepare-for-new-rules/

How is the food industry tackling salt reduction?

The food industry is beginning to take steps to address the issue of high salt levels in food products. Many companies are now reformulating their recipes to reduce the amount of salt used in their products, while still maintaining flavour.

Additionally, manufacturers are providing more low-salt or salt-free options for consumers who are looking to reduce their salt intake. Some companies are also labelling their products with clear information on salt content, allowing consumers to make more informed choices. However, more can still be done to ensure that healthy levels of salt are present in food products.

This includes continued research and development into alternative ingredients and flavourings that can be used to reduce or replace salt in foods.

By taking these steps, the food industry can play a key role in helping to improve public health and reduce the risks associated with consuming too much salt.

The current salt content of common store cupboard staples such as tinned foods, breakfast cereals, and bread is alarmingly high, leading to increased health risks such as high blood pressure and cardiovascular disease.

However, there is hope on the horizon as research shows that reducing salt consumption can have significant health benefits.

Thanks to the pioneering efforts of the UK's salt-reduction programme, which was spearheaded by the Food Standards Agency, salt content in food products has already been reduced, leading to a decrease in blood pressure and cardiovascular disease.

By setting achievable targets and collaborating with food industry stakeholders, the UK has been able to make real progress in reducing salt intake in our diets. With continued efforts and collaboration, we can enjoy delicious food with less salt, leading to better health outcomes for everyone.

To further reduce salt in food production, it is important for governments to take action by implementing legislation and setting targets for salt reduction in processed and out-of-home foods.

This will help create a level playing field and encourage the food industry to reformulate their products to be lower in salt.

Additionally, consumer education is crucial in helping individuals understand the importance of reducing salt intake and providing them with information on how to do so in their own cooking.

Finally, the food industry must continue to play a key role in creating delicious, low-salt options for consumers, as seen in successful reformulation programs in the UK. By working together, governments, consumers, and the food industry can continue to make progress in reducing salt intake and improving overall public health.

https://www.foodnavigator.com/Article/2024/04/02/how-is-the-food-industry-tackling-salt-reduction/

Sweet move? China may allow chocolates, candies, jellies, beverages for health foods filing

China's State Administration for Market Regulation (SAMR) is considering allowing a wider variety of health foods, including chocolates, candies, jellies, and beverages, to go through the health foods filing process.

This move aims to introduce more diverse health food options, especially those in food formats, and to ensure the quality and safety of health foods while promoting industry standards.

Currently, only gummies are allowed for health foods filing. If the new proposal is approved, it will include various candies (such as hard candy, milk candy, gelatinized candy, caramel candy, pressed candy, and aerated candy) and beverages, with specific guidelines on daily dosage and cautionary statements. The public consultation for this proposal ends on November 10.

The SAMR also plans to include health foods in the form of mixtures, teabags, and pastes, particularly those containing ingredients like ginseng and Ganoderma lucidum.

This change is expected to simplify the filing process, making it less time-consuming and less expensive for introducing "low risk" health foods into China's market.

This initiative is part of an effort to cater to the diverse needs of consumers and invigorate the special foods industry in China.

Food packaging should have labels on front about health impact, says WHO

The World Health Organization has released draft guidelines recommending that packaged food and drinks display easy-to-read nutritional information on the front of products to assist consumers in making healthier choices.

This move comes in response to the global obesity crisis, which is exacerbated by the consumption of processed foods high in salt, sugar, and fat. Despite the clear link between poor diet and health problems like diabetes and heart disease, only a small percentage of WHO member states currently require or encourage front-of-package labelling.

The guidelines propose the use of interpretive labels, such as the NutriScore system used in several European countries, to help consumers easily understand the healthiness of a product. By providing clear and informative labelling, the WHO hopes to empower individuals to take control of their food-related decisions and combat the detrimental effects of unhealthy eating habits on public health.

Chile and several other countries in Latin America have implemented a tougher food labelling system, with warnings placed on the front of packages indicating if a food is high in sugar, salt, or fat. Food labelling expert Lindsey Smith Taillie has noted that the food industry prefers non-interpretive labels, which provide nutrient information but do not offer guidance on how to understand it.

U.S. Senator Bernie Sanders has proposed a Senate hearing on tougher food labelling, while the WHO has recommended warning labels to limit intake of added sugars, sodium, saturated fat, and ultra-processed foods.

Research in Chile has shown that warning labels have resulted in significant reductions in sugar, sodium, fat, and calorie consumption. The International Food and Beverage Alliance has stated that their members already adhere to global standards for food labelling, but there is concern that local producers in some countries may not follow these guidelines. While the IFBA broadly supports the WHO's guidelines, they do not favour approaches that demonize specific products or include health-warning type labels on products that are deemed safe and loved by consumers.

Food packaging should have labels on front about health impact, says WHO | Reuters

Food Traceability Rule compliance threatened by too much tech, over-eager retailers

By Bailee Henderson November 29, 2024

Food industry players across the value chain are frustrated by lingering questions about how to implement sweeping food safety changes that go into effect in little over a year, including fears of some stakeholders "going berserk" with new technology or asking for more than the law requires and before the national deadline.

Beginning Jan. 20, 2026, FDA will require everyone who manufacturers, processes, packs or holds certain foods to meet new traceability requirements, including maintaining key data elements associated with specific critical tracking events – such as harvesting, cooling, packing, shipping and receiving – that can be provided quickly to FDA when requesting to assist with a recall or managing a threat to public health. To comply, industry stakeholders will need to work with supply chain partners to develop traceability plans that assign and track traceability lot codes to high-risk products included on FDA's Food Traceability List.

By requiring the sharing of product traceability information, firms in the industry will need to establish new communication platforms and implement significant changes to their processes and procedures. FDA Deputy Commissioner for Human Foods, Jim Jones, recognized the complexity of this implementation, particularly for foods that pass through multiple hands before reaching the point of sale. Despite the challenges, Jones emphasized the importance of this new rule in improving public health by swiftly removing contaminated foods from the marketplace, preventing illness and death, and reducing the waste associated with overly broad recalls. This rule represents a necessary step towards better food safety and industry accountability.

The frustrations and challenges faced by manufacturers, retailers, growers, and restaurateurs in complying with the FDA's impending Food Traceability Rule are clear. While everyone agrees on the rule's intent and benefits, the means to achieving compliance are complex and overwhelming. The interoperability challenges, confusion around which foods and products need to be tracked, and the proliferation of new technologies all contribute to the difficulties faced by stakeholders.

Increased collaboration is seen as the key to addressing these challenges, but it is easier said than done. Stakeholders are being bombarded with requests for integration points, new technologies, and additional data requirements from retailers, which only adds to the burden. The costs of adopting external technology requirements are significant, especially for companies that are already struggling with outdated internal IT systems.

As the deadline for compliance approaches, the pressure is mounting for stakeholders to find solutions that are both cost-effective and efficient. Collaboration and open communication are essential in finding a way forward, as stakeholders work together to agree on application parameters and streamline the tracking process.

A staged approach to compliance with food safety regulations is essential to ensure that all stakeholders are on the same page. According to Lindy Wiedmeyer, food safety manager at Sendik's Food Market, starting with a collaborative staged approach allows for a thorough consideration of variables and processes that may be affected by the new regulations.

This approach also allows for the integration of technology to replace outdated pen and paper processes, reducing errors and increasing data integrity. By focusing on meeting FDA requirements first and then adding additional components as needed, stakeholders can avoid communication errors and ensure a smooth transition to compliance. Collaboration among stakeholders, particularly in the realm of IT technology, will be crucial to successful implementation of the regulations.

https://www.foodnavigator-usa.com/Article/2024/10/22/over-eager-retailers-excessive-tech-threaten-food-traceability-rule-compliance/

Not so straightforward: Singapore food industry voices concerns over cost, efficacy of extending Nutri-Grade system to sodium and fats

The Singapore food industry has voiced several concerns over government plans to extend the Nutri-Grade traffic light nutritional labelling system to sodium and fats.

Singapore's Nutri-Grade system has been in place for sugar content in packaged and freshly prepared beverages since 2023, and in August this year the local Ministry of Health (MOH) announced that it would be extending to 'key contributors' of sodium and saturated fats.

The implementation of Nutri-Grade measures in Singapore has resulted in significant reductions in the sugar content of beverages and total sugar intake among residents.

According to the Ministry of Health, the median sugar level of prepacked Nutri-Grade beverages has decreased from 7.1% in 2017 to 4.6% as of September 2023, with 69% of beverages now receiving grades of 'A' or 'B'.
Building on this success, the government plans to extend the labelling and advertising prohibitions to include sodium and saturated fat in products such as salt, sauces, seasonings, instant noodles, and cooking oil.

However, there are concerns within the industry regarding the practicality and efficacy of these extensions, with stakeholders emphasizing the importance of a science-based approach, fair assessment of products, consumer education, and minimal food waste.

The unique nature of salt and oil consumption also presents challenges in applying the existing Nutri-Grade scheme effectively, as their use in dishes varies and serves multiple purposes beyond just flavour enhancement.

As the government moves forward with these extensions, collaboration with the food industry and careful consideration of consumption practices will be essential in promoting healthier choices and improving public health.

Hey! Chips, a Singaporean brand specializing in healthier snacks, has raised questions about the criteria used to grade 'key contributors' in the government's labelling system for snacks. Founder and CEO Emily Chu expressed concern about how basic products like salt and cooking oil, which may have nutritional benefits beyond just their saturated fat content, would be evaluated. She also highlighted the difficulty consumers face in determining which snacks are truly healthy, especially with the influx of products claiming to be nutritious.

While a labelling system is welcomed, the lack of a framework for unconventional snack options like dried fruit and vegetable chips presents a challenge.

Additionally, the potential cost implications of reformulation to reduce sodium content raise concerns about the impact on end-product prices and consumer behaviour.

However, progress in reducing costs for healthier alternatives like potassium chloride is noted, suggesting that the industry is moving in the right direction despite the challenges ahead.

https://www.foodnavigator-asia.com/Article/2024/10/21/singapore-food-industry-voices-concerns-over-cost-efficacy-of-extending-nutri-grade-system-to-sodium-and-fats/

Hot in here: McCormick expounds on importance of spicy flavours and salt reduction across savoury food categories in Asia

Flavours specialist McCormick has emphasized the importance of innovating with spicy flavours while also reducing sodium levels across various savoury food categories in the Asian market.

Recognizing that spice and heat are crucial taste elements in many Asian markets, McCormick believes that it is essential to explore different levels and types of spicy flavours to create the best flavour profiles.

During the recent Fi Asia Indonesia 2024 event in Jakarta, McCormick's Vice President for Flavour Solutions,

Betty Juliana Tan, noted that heat can come from various sources beyond just chilli. For example, incorporating pepper for an initial tongue heat and chilli for a longer burning sensation from tongue to throat in a spicy soup like ginger soup can create a more dynamic flavour experience.

By developing concepts that feature a combination of spices such as ginger and lemongrass or capsicum and tamarind, McCormick aims to cater to the diverse preferences of consumers in markets like Indonesia, Thailand, and Malaysia.

The company understands that spicy flavours play a significant role across a wide range of food categories in these regions, making the process of innovating in this area both challenging and rewarding.

In addition to working with various levels of heat from different spices, the firm has also found that keeping flavours interesting is crucial. With Indonesian consumers considering spice a basic necessity, they are now looking for new dimensions to spice, such as spicy plus sweet or spicy plus sour.

The combination of spicy heat with sourness is currently a trending favourite among consumers. The different types and levels of spices used create unique eating experiences based on their base heat levels and release times.

Additionally, there is an increasing demand for reduced-sodium options in Asia, despite rising ingredient costs.

To meet this demand, the firm focuses on using multiple flavours, such as herbs and spices, to enhance the taste of products while potentially reducing the need for salt or sugar. In Indonesia, spicy flavours remain popular, and there is a growing interest in garlicky and umami flavours alongside efforts to reduce salt in savoury foods.

https://www.foodnavigator-asia.com/Article/2024/10/24/mccormick-expounds-on-importance-of-spicy-flavours-and-salt-reduction-across-savoury-food-categories-in-asia/