



PFNDAI

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Bulletin
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FOOD, NUTRITION & SAFETY MAGAZINE

HOW CORONAVIRUS ACCELERATED GROWTH FOR PLANT BASED FOODS

Mr Dheeraj Talreja

DAIRY IN ASIA PACIFIC

Mr Manish Singh

INDIAN FOOD PROCESSING IN LIGHT OF COVID 19

Dr Prabodh Halde & Mr Advait S. Deshpande

STRENGTHEN IMMUNITY WITH WHEY PROTEINS

(Proteins from Milk)

Ms Joanie Zhang & Dr Anand Rao

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ASSOCIATION OF INDIA

2nd Floor, Mahalaxmi Chambers, 22 Bhulabhai Desai Rd., Mumbai - 26 (India)

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EDITORIAL

Currently there is a rising trend of plant based diets and everybody is talking about it and also very conveniently adopting the new trend. This is due to the various upcoming studies that show plant based diet promotes better health and lowers risks of heart diseases. Several studies & clinical trials have been shown to reduce the risk of heart disease, metabolic syndrome, diabetes, certain cancers, depression and many other ailments.

Plant based diets have a direct link with that of Mediterranean diets as they have a foundation of plant based foods. However, it is observed that their diet is not vegetarian, and includes fish, poultry, eggs, cheese and yogurt and less frequently meat and sweets. This shows that plant based diet may include fish, eggs, poultry and a little meat.

People have now also started to shift their diet preferences from non-vegetarian to vegetarian diets. This is due to several reasons. One is of course the religious reason where it prohibits consumption of any non-vegetarian food. Another reason may be humanitarian reason that demands not to kill animals for food purpose. Several people are now considering animal food being non-sustainable and are more concerned about environmental misbalance. More recently people have started following vegetarian diet as it is considered healthy.

Again non-vegetarian does not necessarily mean coming from animals. In India, milk and dairy products are not considered non-vegetarian. Even in some countries, bees wax, vitamin D3 from sheep wool etc. although not from plants are considered vegetarian as these products are obtained by not sacrificing the animal. For the same reason unfertilised eggs may be consumed by some as it does not sacrifice bird.

Vegetarian diet including milk and dairy products would provide complete proteins but getting adequate amount is

not easy. Thus excluding meat, fish, poultry and eggs makes it difficult to obtain enough of proteins.

The reason for shift to plant-based was basically because the western diet is based on meats, mostly red meats and very little fruits and vegetables. Excessive meats and very little dietary fibre, vitamins and minerals and many other botanicals obtained through plants gave rise to all kinds of ailments among them. Thus shifting from meat based diet to plant based diet, provided tremendous relief & diet satisfaction to people and many studies proved this.

Plant based diets not only include fruits and vegetables, but also nuts, seeds, oils, whole grains, legumes and beans. It is not necessarily a vegetarian or vegan diet so it does allow fish, chicken and eggs and occasionally meat. Fish is certainly a healthy food as it provides omega 3 fatty acids which have a large number of health benefits. Eggs are also very healthy food and provide complete protein. That is probably the most cost effective high quality protein available today. Health professionals, who advised against consumption of eggs for its cholesterol content, now recommend eating one egg every day as the dietary cholesterol reduces the amount of cholesterol produced within body so it does not cause problems unless one eats too many eggs.

Some vegetarians have solved the problem of protein deficiency and quality by consuming soy foods. Tofu and textured vegetable protein from soy beans provide enough high quality protein to maintain health.

Plant-based foods have a lot of benefits but one can also consume some foods from animal group to remain healthy.

Prof Jagadish Pai,
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HOW CORONAVIRUS ACCELERATED GROWTH FOR PLANT BASED FOODS

AUTHOR
Mr. Dheeraj Talreja,
President,
AAK Kamani



Consumer interest in plant-based meat has picked up in recent years as individuals were opting for healthier food items and the pandemic might have accelerated the demand for these foods across the world. We hear the words of vegan, vegetarianism, flexitarian more often which contribute to a healthier and better-for-you- nutritious products.

A report published by the World Economic Forum and Reuters last month said suppliers are seeing surging demand for plant-based protein foods in Asia as Covid-19

raises concerns among consumers over links between meat and viral diseases. The trend of plant based is being observed in several other nations like Brazil, Mexico & China. There is also a substantial part of the population that is moving to a more plant-based diet. Indeed in China, which consumes twice as much meat as the US, the government is drawing up plans to cut meat consumption in half.

Environmental concerns, health and wellness, and increased consumer curiosity are the most significant drivers impacting purchasing decisions when it comes to food. Another important aspect of increase in plant based foods intake is millennials. The matter on climate change has been in the focus for a lot of millennials. Plant-based diets offer one way forward—they have the potential to simultaneously help tackle the climate crisis, prevent disease and improve mental health. Large studies of people living in western countries who consume diets richer in vegetables, legumes

and grains show some protective effects. They are less likely to be overweight compared to people who regularly consume meat. Diets like the Mediterranean-type which emphasize on plant-based foods and protein sources are gaining popularity.

Another upcoming trend that companies are adopting is that of 'Clean Label'. Clean label foods have easy to recognize ingredients that are natural, non-GMO, are unprocessed and contain no synthetic chemicals. Health food brands and companies address this concept through their offerings, products, and ethos. These companies are well aware of the fact that the modern-day consumer does not want to consume artificial ingredients and is aware of their negative impact.

Consumers want to know about how the food is grown, the steps in its production, and the properties of the final product. Consumers are willing to pay a premium price to

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towards the companies where trust is the key. With respect to the health factor, plant-based foods that contain ingredients like flax seed, hemp seed, or chia seed are likely to appeal as alternative

sources of 'good fats' (like omega 3) for plant-based dieters.

• Dairy & Other Non-Vegetarian Alternatives:

Growing availability and flexitarians are driving demand for dairy alternatives. Plant-based cheese, ready meals, seafood, and alternatives to eggs are among the biggest opportunities in the plant-based sector, a survey of over 6,000 consumers has found. According to figures, provided by Markets and Markets, the market is valued at US\$12.1 billion in 2019 and is predicted to grow at an annual rate of around 15% reaching almost US\$28 billion by 2025.

People are also considering plant based dairy due to its digestive health, designed for lactose intolerant individuals and being a healthier option. Plant-based milks with a longer shelf life than many fresh dairy products will also be in demand during the crisis related to the COVID-19 outbreak.

Global companies too are considering vegan, plant based food items to be listed on their menus. Consumers are looking for convenient ways to reach their recommended daily intake of fruits, vegetables & protein. Just like vegan and vegetarian products became everyone's choice, plant-based foods have come in and took over to become a phenomenon. It

is a popular product sold in grocery stores and now even in fast food joints. Fast food places have hopped on the trend and began serving plant-based meals which more likely will continue for a long time.

India too is an emerging market for plant based foods and dairy alternatives. AAK Kamani recently partnered with Good Food Institute (GFI) India to collaborate on the research and business promotions aimed at advancing projects in this space. Plant-Based Revolution has been coined by Innova Market Insights as the second most significant trend expected to influence NPD this year. With support from the Good Food Institute India, AAK Kamani will also provide "Co-Development expertise" for guiding companies on how to accelerate the formulation of new products, with a focus on achieving optimal texture and appealing to local tastes. AAK Kamani believing in this concept of plant based foods has introduced AkoPlanet™ food solution which seeks to move towards a sustainable world. AkoPlanet™ focuses on the Co-Development facilities for customer innovation and collaboration keeping sustainability at its core. Together with the customers, we develop great-tasting plant-based food made with love for people, plants and the planet.

experience the benefits associated with clean-label ingredients. The Asia Pacific clean label market has registered an increase of 7.4%, making it the fastest-growing clean label market in the world. The primary reason for this steady growth is an increase in standard of living of consumers along with an increase in their purchasing power.

Plant based foods are observed across different categories such as dairy alternatives, meat alternatives, sustainable food items, etc. and these are popularly gaining interest from consumers. Another driving factor is that of lifestyle diseases, such as obesity, diabetes, etc. has made consumer preferences to shift from non-vegetarian food products towards plant-based protein-rich diet, thus propelling the product demand. Furthermore, the growing consumer health concerns along with rising awareness towards animal welfare and protection also augment the market growth.

• Plant based meats:

Some of the driving forces for increase in plant based meats are active awareness and exposure to the segment, evolving consumption patterns, climate change and sustainability. As more and more information is available about products and companies, consumers are making a conscious decision on behalf of themselves and their families. There is an increased awareness of the impact on the ecosystem and consumers want to be able to make the right choices and therefore have high expectations



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*Source: The Times of India, July 2017

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DAIRY IN ASIA PACIFIC



AUTHOR

Mr Manish Singh,
Director R&D, Nutrition & FSQ,
Fonterra India Subcontinent

Overview

Dairy is defined as a business enterprise that deals with the processing and harvesting of animal milk for human consumption. Some of the common milch animals include cow, buffalo, goat, camel and sheep. According to a global dairy market report, the estimated global market value for dairy reached US\$ 673.8 billion in 2019 and is projected to grow to US\$ 1032.7 billion by 2024.

The developed markets for dairy like North America and Western Europe are struggling to achieve positive growth as the consumer trend has been to shift out of the category due to either environmental concerns or with digestive issues. However, the Asia Pacific market has been leading the growth in dairy. Dairy has been a key component of diets in the Asia Pacific region for a very long time. While the formats of consumption can vary from one country to another, consumers believe in the importance of dairy in their diets. The region accounts for about half of the world's population, but the per capita consumption of dairy is still the lowest globally, both in terms of value and volume. As per the 2017 estimates, the per capita consumption in value terms in Asia Pacific was only about 25 USD as compared to more than 200 USD in Western Europe. In the last few

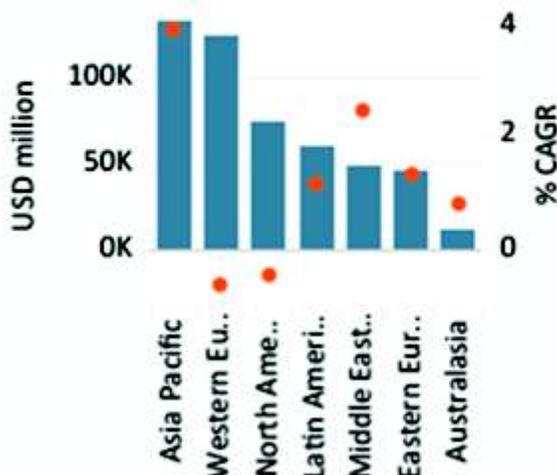
years, this inherent latent demand in the region has been unlocked due to two primary factors; one

being the increase in the purchasing power and second being the rising health awareness amongst the consumers. As a result of this, the Asia Pacific region has seen a robust growth of about 4% CAGR in last few years and has now become biggest dairy market globally. This growth is driven not only by large countries like China and India alone, but even smaller countries

like Vietnam, Pakistan, Laos, Bangladesh and Philippines are also contributing to it. This growth rate is expected to continue going forward as well due to this healthy economic diversity within the region.

The top 3 categories that constitute the category in the region are drinking milk, yoghurt & sour milk products and cheese. The drinking milk category includes fresh milk, shelf stable milk and flavoured milk drinks. The large absolute value growth of yoghurt and sour milk products in China, India and Japan, due to rising health awareness, has tended to overshadow robust growth in drinking milk products in several other markets, including India. Going forward, yoghurt and sour milk category will continue to clock in robust double-digit growth. Cheese has been the other category that has been growing in all the markets and will continue doing so with a projected CAGR of 5.5%. In Asia, milk output in 2019 increased by 10 million tonnes, or by 2.9 percent from 2018, to nearly 360 million tonnes, with over 90 percent of coming from India and Pakistan. India's milk production continued to increase driven by rising demand, induced by high demand for processed food stemming from fast growing

World: Size and % CAGR Growth of Dairy by Region



Source : Euromonitor



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- Cereals, pulses and its products
- Spices, Condiments and its products
- Animal origin, fishery and its products
- Alcoholic and non alcoholic products
- Oil seed, oils and its products
- Sweets, confectionary and its products
- Bakery products
- Sugar, Honey & jaggery
- Process, canned food products
- Feeds
- Water
- Ready to eat
- Infant substitute
- Skim Milk Powder

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- Mycotoxins
- Naturally occurring toxins(NOT,s)
- Heavy metals and minerals
- Minerals & Toxic heavy metals
- Vitamins
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- Drinking water as per IS 10500
- Process water IS 4251
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urbanization. Production growth is facilitated by rising milk collection and processing, especially by dairy co-operatives.

Key enablers for future growth

The APAC region will continue this growth momentum in the future, and this presents a huge opportunity for the manufacturers. The current per capita consumption for the dairy category is the lowest in the region and this will ensure that the consumer demand will keep growing over the years. At the same time, there is a big opportunity that can be leveraged through premiumization of the portfolio, especially in the developing countries, thereby increasing the share of wallet. Apart from this, the following trends will be a big enabler in ensuring that dairy category continues to be at the forefront of growth in the region:

Emergence of supermarkets:

Supermarkets represent an important pillar in supporting the growth of chilled dairy products like yoghurt, cheese and drinking milk. In Asia Pacific, while the major channel of distribution is quite varied for different markets, there is a general shift towards supermarkets. Outlet expansion is a common phenomenon across the region. Consumers believe that modern grocery retailers are more effective in maintaining products'

freshness. In addition, supermarkets tend to offer various product discounts and promotions, especially for multipack products and bulk purchases, unlike traditional grocers.

Convenience of e-commerce:

Ecommerce can be an enabler for growth as it can help assure freshness of the product. At the same time, better use of technology and data will help target consumers with tailored offers. South Korea and China have particularly significant internet retailing sales of dairy products, such as through 11Street and G Market. Some sites even provide one-day delivery, which helps to assure customers that product freshness is retained. Improvements to cold chain logistics are expected to further boost online sales of dairy.

Digitalisation for transparency:

Consumers want more transparency through the entire value chain to believe that the product has been delivered in a safe and secure manner. One of the key questions in the mind of the consumer is "Can I trust the source?" This lack of trust is more evident in dairy given that there has been a few negative news on adulteration in the recent past. New technologies such as blockchain, which records transactions in a tamper and revision-proof way, could potentially be used to track the

ingredient information and how it was handled in the value chain.

Consumer need for healthy food choices:

Consumers are becoming more health conscious with their food choices. It is very common to hear the terms 'clean label', 'high protein', 'no preservatives' and 'healthy foods' in a consumer group. For example, in China, since consumers are moving away from additives, the category is shifting from flavoured milk to fresh milk. In Japan, while the categories like drinking milk, butter and margarine are declining, yoghurt is a growing category due to probiotics.

Impact of COVID on the dairy industry in the region

In the last three months, everyone has been trying to deal with the disruptions in supply chain and the demand. Now the focus has shifted to understanding the medium- and long-term impacts and preparing for it. The silver lining in this situation is that the outlook does not seem to be as grim as it was perceived to be at the height of the lockdown.

As the lockdown is being lifted in different markets, there are different views on how the economy will respond. It will be prudent to wait for some more time to assess the actual strength of the markets. The general view is that many countries will move into a cycle of economic recession, which clubbed with

higher unemployment rate, will probably dampen the demand over next few quarters. In view of the muted demand during the lockdown, the milk processing companies have moved to producing more of the products that have longer shelf life like powders. This higher level of inventory will put pressure on the cash flows. Also, the muted local demand will impact the import demand across many countries. Heavy inventories and reduced demand growth will weigh on the global milk prices into 2021.

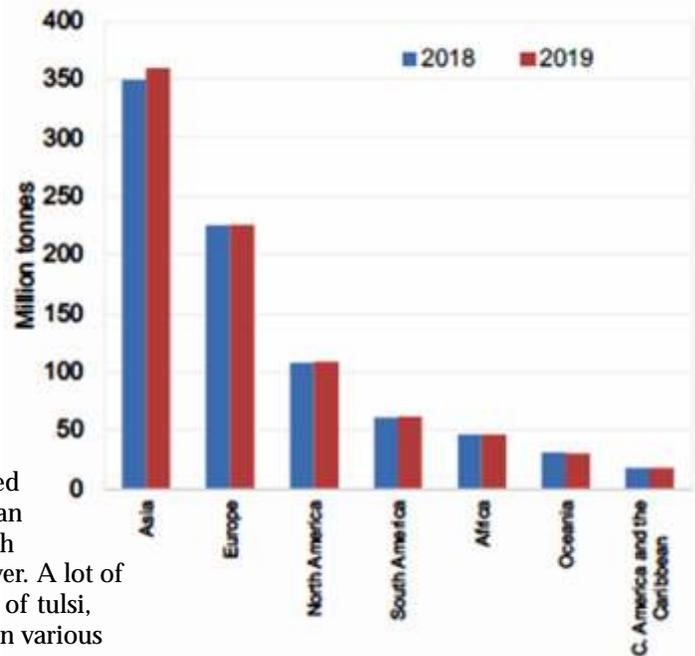
While the retail sales will eventually return to the normal levels, the trend of home-cooking could potentially mean that the manufacturers will have to rejig their portfolio. The trend of home-cooking will also have a significant impact on food service part of the business, which will take a longer time to recover.

However, the pandemic has prompted consumers to pay greater attention to their health, and to seek ways to protect it by adopting 'preventative health' measures such as strengthening their immune system. Based on the initial trends, the pandemic has helped revitalise the dairy products as the dairy brands are well positioned to offer

affordable, safe and nutritious options to consumers seeking to strengthen their immunity and overall health. Every country in the region has a strong heritage of 'local healthy ingredients' and these can be a product platform that manufacturers should leverage, for example Ayurveda in India.

"Haldiwala doodh" need no introduction to Indian consumers for the health benefits that it can deliver. A lot of us are anyway drinking of tulsi, giloy, black pepper etc in various combinations to boost our immunity. Can we incorporate some of these into dairy products? The other trend that we need to think about is personalisation or customisation of products based on the consumers requirements. This would be a much-anticipated innovation that can potentially be delivered through innovation of product, packaging or delivery model. If we can get this right, this could be a holy grail for the consumer !

World milk production by major region



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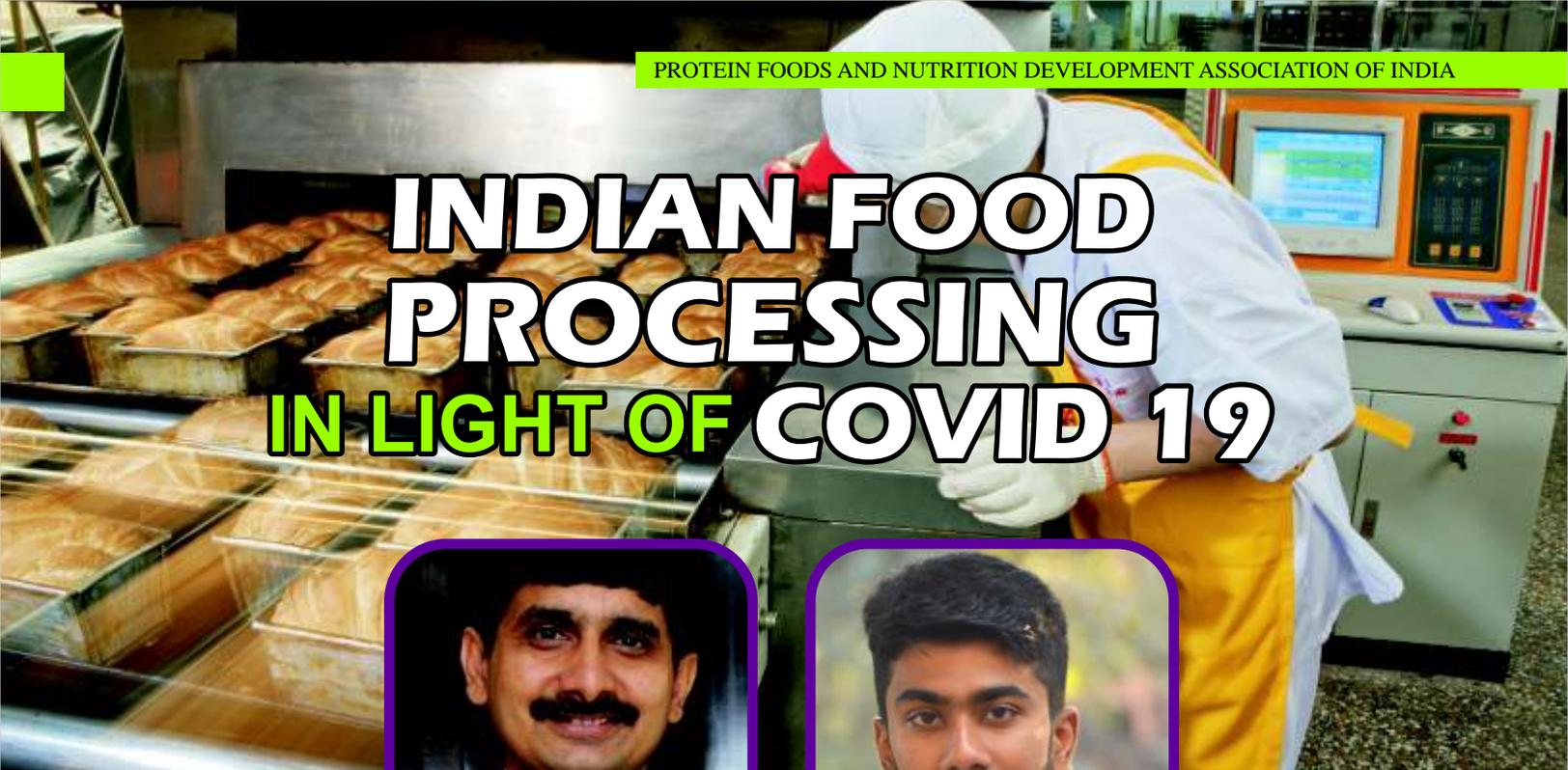
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INDIAN FOOD PROCESSING IN LIGHT OF COVID 19



AUTHORS

Dr Prabodh Halde, & Mr. Advait S. Deshpande,
 Ex-President AFST (India) (DFRL DRDO Mysore)

Introduction

In last 4 Months the world has changed completely. Single virus has shut the entire economy and we still do not have any solution for the Pandemic. Over 204 countries are affected and over 5 Billion people in the world are locked down and staying at home.

India's 90% population is at home today from the last 40 days which we are seeing for the first time. Though such pandemics have happened in human history but COVID19 is different since no solution has been yet available and every country is struggling in its own way. This virus seems to be very smart and humans are discovering new things about this virus every day.

Food Processing sector in India

70% of the population of India is dependent on Agriculture and Food Processing. The food grain production at the all-India level is close to 245 Million MT. The Food Processing industry was growing at 13% growth rate till December 2019 and for the Indian economy the growth of this industry is crucial

population was locked up at homes, most of the consumption pattern has changed. HORECA (Hotel/Restaurant/Café) channel consumption has shifted to Home and

since a large population dependent on agriculture and agricultural development is linked to food processing.

India is number one in production of the agricultural commodities like Pulses/Tea/Dairy, etc. but not able to add value and reach consumers due to low processing percentage. Our processing of fruits and vegetables is just below 12% while developed countries process over 80%, so surely India has a huge potential to double its processing percentage to 25% in the next 5 years, which will boost the growth of Food Processing.

What has happened in last 40 days In India?

In last 40 days COVID19 has taught us many new things. Since 90 crore

since Covid-19 cases are low in India compared to other countries, food demand through this route has doubled. Most of the super markets/retail shops are going out of the stocks for favorite food products of the consumers. Packaged food is being considered as safe since it is scientifically processed and packed so consumers prefer them over unpacked food products.

Thanks to Ministry of food processing, they have timely intervened and declared entire 'FOOD' as a category as essential and the same has been notified by MHA in various orders. This has helped to a large extent for smooth supplies of food products all across India.

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10 million death

1914-1918

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- Sun lamps
- Tea Bags
- The wristwatch
- Vegetarian sausages
- Zip
- Stainless steel
- Air Lines / Pilot Navigation



60 million death

1941-45

- Penicillin
- Concept of computers
- Machine processing
- Ball Pen
- Photocopy
- Ready to Drink Coffee - Nescafe
- Carbonated Beverages - 5 Cent Coke
- Jet engine
- Canning technology
- Process food Industry

Though most of the food processing companies are working with 30 to 50% capacities and distribution chain is also working with bare minimum staff, most of the supplies are unaffected. We should give this credit to central government, state government and food processing companies for coming together and working as team INDIA.

Interestingly for most of the packaged food we have not observed any sudden inflation and for that ministry of food processing, Ministry of consumer affairs and food processing industries should be congratulated. There might be some exceptions in some parts of India and also in case of fresh fruits and vegetables which are not packed. But in last 40 days it has shown all packed food commodities are supplied timely without much increase in price. For this achievement we need to give credit to team Food processing (all stake holders) INDIA.

Every problem comes with an opportunity

In World War 1 and 2 over 70 million people died and geography of the world has changed in big way. In spite of these problems we have witnessed some fine innovations coming out of these disasters and still we are enjoying the benefits of these innovations.

In same way COVID 19 may promote some fine innovations in the area of food processing. We need to wait for a few days. Already we have seen some companies are launching new products. Consumer preferences are also changing towards eating.

What will happen to Indian food processing sector post COVID 19
 Firstly, we will not get affected like other sectors; rather food processing sector will grow with double digit in coming 1 year. There are many strength points for India to believe in.

The Indian population is around 130 crores consisting of around 33 crore families, considering 4 members per family. Even if we consider a low estimate of Rs. 3000

per family as food expenses, India still spends nearly Rs. 1 lakh crores per month on food which is Rs. 12 lakh crores per year; so we can say the size of the Indian food industry on a minimum scale is Rs. 1,200 Billion per year. Since home consumption has increased, this number might reach Rs. 20 lakhs crores per year post COVID 19

What would be the new trends in food processing sector?
 COVID 19 will bring the new trends and we have to adapt to these trends for growth and progress. Among all these trends, new safe packaging, export, home cooked food, immunity foods, e-platform foods will change the face of entire food industry. We will see new startups in these sectors and they will bring some real innovative products.

China's loss will be India's Gain for export

China contributes to over 43% share in food processing exports and India is as low as 3-4%. Post COVID 19 we can see some gain coming to India. Even if extra 5% shift happens to Indian food processing sector our export volume will grow



China Vs India

Export Trade	China	India
USD Million	13460	2657
INR CR	94220	18599

• China's Export is 5 times of India in Processed food

• Even if India gets 20% of Share

Additional 20,000 Cr Processed foods export potential

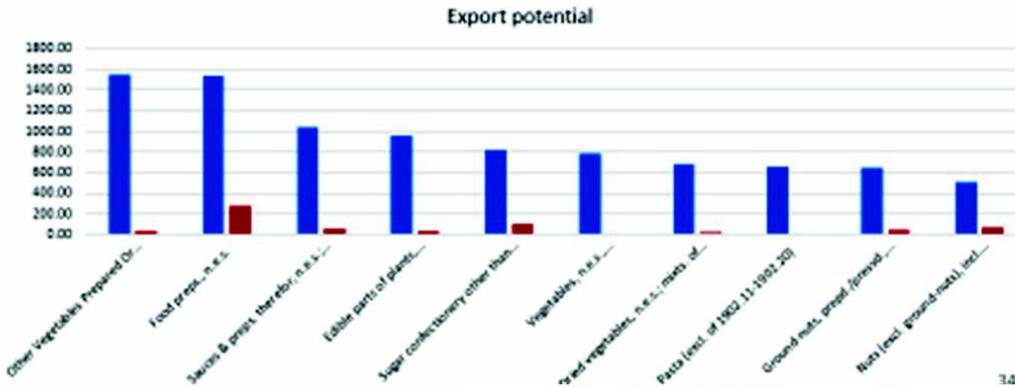
Food Processing- New Normal

But every company has to adopt new changes and we need to bring innovation in every aspect. This problem will certainly go if we do our basics right and adapt to new challenges.

Action Plan

But we cannot discount the current problems which are being faced by industry today. We as team Food Processing India (Government, Association and Industry) have to bring new changes, bring some policy decisions and help this sector grow which will sustain farming sector of India.

1) Government must declare



India's Home Immunity Booster

to Rs 40,000 crores from current Rs 19,000 crores in the next 2 years. This will bring huge scope to startup and SMEs sectors.

AYUSH AND Food Processing & Biotechnology will marry for newer innovation

AYUSH guidelines, Ayurveda foods, food biotechnology will also bring new innovation to main food sector and marrying taste with health benefits would be a challenge to R&D.



- Mustard seeds.
- Cumin seeds.
- Turmeric powder.
- Red chili powder.
- Coriander-cumin powder.
- Homemade garam masala.
- Amchur (Dried mango powder)

Top 10 Immuno-building Foods

food processing sector as extension of agriculture sector and make it free of all licensing /GST requirements. Yes, if we put some CAP on turnover viz. below 5 crores/yr this will boost the rural economy and new startups.

2) Initiate the farmers marketing organization (FMO) to get more value to farmer's produce and encourage farmers to go for processing. With current FPO (Farmer Producer Organization)

But who will Sustain?

- Good Financial controls
 - Low capital
- R&D focus
 - Outsourcing
- Strong consumer understanding
- Early movers
- Playing on strengths
- Working on core

Innovative

Innovative

Innovative



5) All government schemes should be more practical and implementable in light of COVID 19

Conclusion

Food processing sector has huge potential to come back and also support farmers. Thus with proper planning and policy interventions INDIA can become the kitchen of the world post COVID 19 and Food

Processing sector will grow with over 25% annual growth in next 2 years.

This will definitely bring our slogan true – *“Bahujan sukhaya, bahujan hitai”*.

good production impact has been achieved. FMOs can connect with big retailers and farmer’s processed produce can be brought to market directly.

3) Ministry can bring some incentives for R&D organization to boost the R&D activities which will

change the food processing sector and consumer benefits.

4) No GST and no income tax for food processing sector at selected places, can attract huge investments in the sector. This will help Farmers in big way



Conclusion

FP Startup Good scope

India has good agriculture outpour

Agricuture = Food Processing

India has good domestic demand

China’s loss India’s gain

Innovation is MUST

Health & Wellness is new NORMAL

Food Industry has excellent future post Covid-19

STRENGTHEN IMMUNITY WITH WHEY PROTEINS

(PROTEINS FROM MILK)



AUTHORS

Ms Joanie Zhang,
 Technical Support
 Manager - Asia
 Agropur Ingredients,
 Eden Prairie, Minnesota, USA
 E: Joanie.zhang@agropur.com

& Dr. Anand Rao,
 VP of Ingredients
 Innovation,
 Agropur Ingredients,
 Eden Prairie,
 Minnesota, USA

The novel coronavirus (COVID-19) has put a spotlight on the importance of nutrition in supporting the immune system and general wellbeing. Everyone is looking for a healthy, nutritious diet, and lifestyle to maintain a strong immune system. Among all valuable nutrients, whey proteins, the natural bioactive proteins from milk, provide significant amounts of essential amino acids to support muscle structure, body recovery, and immune function.

Role of whey protein
 Our immune system is made up of proteins that are synthesized from dietary amino acids. Adequate amino acids in our diet are essential in maintaining immune system cell structure.

Whey protein is a well-known, complete protein source that provides all the essential amino acids our body needs, especially rich in sulfur-containing amino acids cysteine and methionine for antioxidant activity. Whey proteins also contain individual proteins such as lactalbumin, lactoferrin, and immunoglobulins that have immune-enhancing bioactivity.

Optimize high-quality protein intake during acatabolic health condition
 A well-balanced diet, which includes a variety of fruits, vegetables, and high nutritional quality protein, can help increase your immune

Graph: Benefits of Whey Proteins



function. Some countries have issued nutrition guidelines for the general population and people recovering from viral infections. Health officials have emphasized the importance of adequate intake of dietary proteins. People should consume complete, high-quality proteins (egg, dairy, and soy proteins) in their daily diet.

Inadequate protein intake can lead to weaker immune function, slower recovery from illness, and loss of lean body mass. The need for dietary protein is in part because of a declining anabolic response to protein intake in a sick population. More protein is also needed to offset inflammatory and catabolic conditions associated with chronic and acute diseases. Nutrition research (list below) shows that higher dietary protein ingestion is beneficial to maintain body functionality and promote recovery in adults who are in catabolic conditions such as acute bed-rest, malnutrition, physical inactivity, and viral infections.

The nutrition guidance for patients infected with Coronavirus (issued by China Nutrition Society) recommends patients to take 150-200 grams total protein per day (around 1.5-2.0g /kg body weight/day). The World Health Organization (WHO) recommends protein from milk and dairy products, especially yogurt. The protein intake recommendation for those who need extra support either to recover or whose diets need constant supplementation is 1.2-2.2g/kg/d.

Whey protein strengthens cell anti-oxidation

Whey protein also has potent antioxidant activity because it is rich in sulfur-containing amino acids cysteine and methionine. With a high concentration of these amino acids, immune function is enhanced through intracellular conversion to glutathione (GSH). Glutathione is centerpiece of the body antioxidant defense system that protects cells against free radical damage, pollution, toxins, and infection. Cellular glutathione levels decrease with age and illness. In comparison to other protein sources, whey has the unique capacity to increase glutathione production that leads to improvements in health conditions.

According to a 2004 monograph "Whey Proteins and Immunity" published by the U.S. Dairy Export Council (USDEC)- "whey proteins are unique in their ability to optimize a number of key aspects of immune function, although the exact mechanisms are not yet fully understood, whey proteins appear to modulate immune function by boosting glutathione (GSH) production in various tissues and preserving the muscle glutamine reservoir."

Bioactive components in whey protein

Whey protein has demonstrable effect to promote body health by binding and inactivating bacterial toxins, inhibiting bacterial and viral adhesions, such as E. coli, and strongly promoting the growth of good bacteria, such as Bifidobacterium

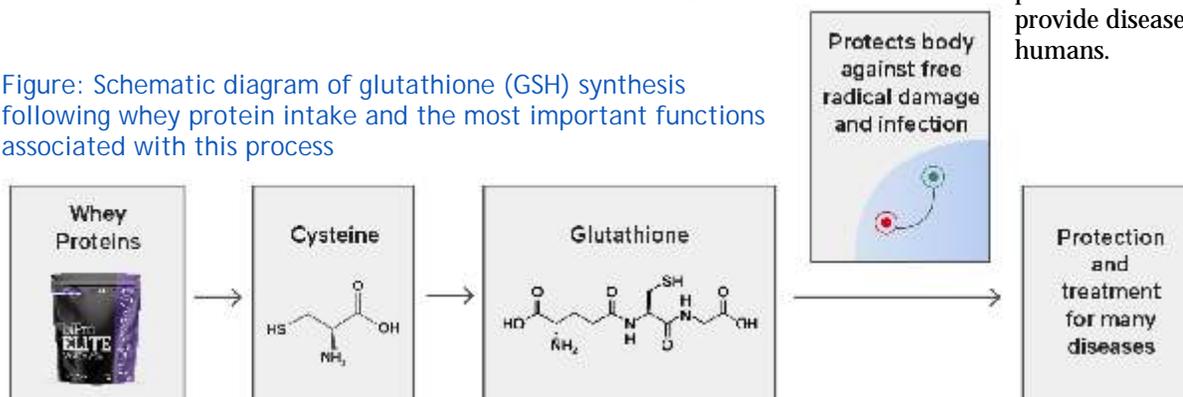
breve and Lactococcus lactis. The biological components of whey, including lactoferrin, beta-lactoglobulin, alpha-lactalbumin, glycomacropeptide, and immunoglobulins, demonstrate a range of immune-enhancing properties.

Alpha-Lactalbumin (-lac) is the most prevalent whey protein in human milk and makes up 20-25 percent of bovine whey proteins. In an animal study, alpha-lactalbumin improved antibody response to infection. Additionally, it has a direct effect on B-lymphocyte function, as well as suppressing T cell-dependent and independent responses.

Glycomacropeptide (GMP/CMP) is a bioactive peptide derived from casein during the cheese-making process. Research demonstrates that compared with casein or purified amino acid diets, GMP enhances immunomodulatory activities by inhibiting immune cell proliferation and lowering indexes of inflammation. GMP is also shown to exert prebiotic and antibacterial effects from in vitro and in vivo studies.

Immunoglobulins (Ig) are a group of protective bioactive antibodies, accounting for 10-15% in whey. Common dairy immunoglobulins include IgG, IgA, and IgM. When consumed in food, immunoglobulins bind bacteria, toxins, and other harmful molecules and carry them safely out of the body. The immunoglobulins in dairy products have been shown to provide disease protection for humans.

Figure: Schematic diagram of glutathione (GSH) synthesis following whey protein intake and the most important functions associated with this process





AGROPUR

Better Dairy. Better World.

Whey Proteins for Health, Wellness, & Immunity

PODS

Whey Protein Pods

70% protein content

ISO Chill

ISO Chill®

8000 & 8010

instantized whey protein concentrate

9000 & 9010

instantized whey protein isolate

BZT

BioZate® 8000

hydrolyzed whey protein concentrate



How to incorporate whey protein ingredients into consumers' diets and products?

During the lockdown, more consumers are looking for high protein food products and drinks. Over the past few months, consumption of many convenient protein products, including ready to mix (RTM) protein supplements, ready-to-drink (RTD) protein beverages, and other protein-fortified snacks, has increased. Protein nutrition bars meet the pressing consumer need for a healthy and convenient snack for those accustomed to eating out, for parents at home caring for their out-of-school kids, and for those on the front lines who are busier than ever, such as healthcare workers and delivery drivers.

• **Whey protein concentrates and isolates** are the most popular whey protein ingredients in the market, with protein content at 80% and 90% as is respectively. These ingredients contain a full balance of undenatured bioactive whey proteins including immunoglobulin (IgG), lactoferrin (Lf), and glycomacropeptide (GMP). They deliver superior nutrition, are high in BCAAs (Branched Chain Amino Acids), with leucine content at 10.3g/ 100g whey protein. The ingredients were designed to be used in a variety of food and nutritional applications, including protein beverages and shakes, RTM supplements, protein fortified bakery products, and protein fortified snacks.

• **Whey protein hydrolysates** are enzyme-pre-digest whey protein ingredients for more rapid digestion and absorption. BioZate® 8000 is a hydrolyzed whey protein concentrate (protein content at 80% as is) with low bitterness. It is enzymatically hydrolyzed under controlled conditions to obtain a unique low-bitter peptide with improved nutritional properties. BioZate® 8000 is a spray-dried protein powder and designed for use in sports and nutrition supplements.

ISO Chill® 9010

instantized whey protein isolate

Spray dried, natural off-white powder, instantized whey protein isolate derived from sweet dairy whey. It carries a clean, bland flavor profile.

- ◊ Quick dispersion and hydration into solution
- ◊ Highly soluble
- ◊ Neutral flavor
- ◊ Nutritional benefits of whey protein isolates



Superior dispersion properties.



ISO Chill® 8010

instantized whey protein concentrate

A spray-dried powder, cream in color, with a bland flavor profile. It is homogeneous, free-flowing, and non-caking. Contains soy lecithin.

- ◊ Solubility
- ◊ Emulsification
- ◊ Gelation
- ◊ Thickening
- ◊ Foaming
- ◊ Fat & water binding properties



Free-flowing and non-caking.



BioZate® 8000

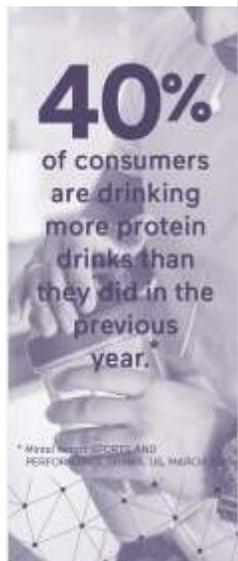
hydrolyzed whey protein concentrate

HIGH quality / **MINIMAL** bitterness / **10.3g** LEUCINE per 100g of protein

- ◊ Complete protein source with rapid digestibility
- ◊ Ideal for sports nutrition applications
- ◊ Contains essential branched chain amino acids (BCAAs)
- ◊ Gluten free



Pure protein ideal for protein supplements.



40% of consumers are drinking more protein drinks than they did in the previous year.

* Nielsen Report © 2018 AND PERFORMANCENUTRITION.COM, 15th MARCH 2019

• **Whey Protein Pods** are a highly nutritional extruded form of whey proteins (total protein at 70%) with a clean dairy flavor. They are manufactured using a proprietary blend of whey proteins to produce a tender, crisp texture for a variety of applications. The beauty of whey pods is that it amazingly brings fun, appealing, and crunchy texture to protein bar and snack products.

During lockdown and quarantine, people are gravitating to comfort foods to fight anxiety and loneliness. Often, these “comfort” foods are high in fat, sugar, salt, and calories. FAO recommends to “Watch your intake of fats, sugar, and salt. Many people in times of high stress, use food as a comfort, which can lead to overconsumption.” Whey protein PODS provide opportunities to food formulators to develop healthier and fun products with high protein content, such as yogurt and ice cream toppings, breakfast cereals, etc.

During these unprecedented times, we encourage everyone to keep a well-balanced diet with protein, fruits, and vegetables, as well as exercise regularly and get adequate sleep. Healthy immune system warriors require regular nourishment! Don’t forget to give your immune system a boost with whey proteins.

(This article is for information and education only. Nutritional whey protein can help boost immunity but do not prevent or cure Coronavirus.)

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- Adds a fun texture to applications
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- Ideal for protein fortification in bakery, snacks, yogurt and ice cream toppings
- Keeps crispy during long shelf-life



Clean label protein with a crisp.





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REGULATORY ROUND UP



By
Dr. N. Ramasubramanian,
VR Food Tech Private Limited
n.ram@vrfoodtech.com

Dear Readers

Hope you and your family are safe. Please find below FSSAI notifications since the last round up.

Latest compendium of [FSS \(Food Products Standards and Food Additives\) Regulation, 2011](#) and [FSS \(Prohibition and Restriction of Sales\), 2011](#), updated till 25.06.2020, have been published.

[FSSAI operationalizes draft provisions with regard to standards of "Alcohol Free Beer" and use of certain food additives in Alcoholic beverages.](#)

[FSSAI to take actions on manufacturers of stapled tea bags without due permission as the deadline is over.](#)

[Method for the detection and estimation of foreign oligosaccharides in Honey.](#)

[It has been brought to the notice of FSSAI that blended edible vegetable oil is being manufactured and sold without the mandatory AGMARK certification. Enforcement Authority has been requested to strict action against such defaulters.](#)

[Draft standard for Honey has been operationalized.](#)

Here is a good news for FBOs who would like to retrieve or change their

User Id or reactivate their rejected applications, change of mobile number etc. This is a usual problem when employees, in charge of licensing work, leave the organization. [FSSAI has drawn a standard operating procedure for both Central and State license/Registration for this purpose.](#)

[FSSAI has published methods of analysis of Pyridoxine, Folic Acid and Zinc in fortified foods and vitamins and minerals in formulated supplements for children.](#)

[FSSAI bans the sale of Para Amino Benzoic Acid \(PABA\) as a stand-alone supplement or as an ingredient in any food formulation.](#)

RESEARCH IN HEALTH & NUTRITION

More berries, apples and tea may have protective benefits against Alzheimer's Study shows low intake of flavonoid-rich foods linked with higher Alzheimer's risk over 20 years

May 5, 2020 Science Daily

Older adults consuming smaller amounts of flavonoid-rich foods like berries, apples and tea were 2 to 4 times more likely to develop Alzheimer's disease and related dementias compared to people consuming higher amounts, say scientists at Jean Mayer USDA Human Nutrition Res Center on Aging at Tufts Univ.

Studying diets of 2800 people aged 50+ over 20 years relationship between eating foods with flavonoids and risk of Alzheimer's disease (AD) and related dementias (ADRD). Results published in American Journal of Clinical Nutrition.

Flavonoids are natural plant substances found in fruits and vegetables like pears, apples, berries, onions and beverages like tea and wine and also in dark chocolate. These are associated with various health benefits, including reduced inflammation. Low intake of flavonoids was linked to higher risk of dementia when compared to highest intake especially in case of anthocyanins from blueberries, strawberries and red wine. Results were similar for AD.

The study shows how diet over time may be related to cognitive decline. As there is no effective drug for Alzheimer's disease preventing the disease through diet is important. Researchers analysed and compared six flavonoids as per intake levels and AD & ADRD diagnosis later in life. They found that low intake of 3 flavonoid types was linked to higher risk of dementia when compared to higher intake. Low intake meant no berries and just one & half apple per month and no tea whereas high intake meant about 7.5 cups blueberries or strawberries, 8 apples & pears and 19 cups of tea per month.

Tea, specifically green tea and berries are good sources of flavonoids. The people who may benefit the most from consuming more flavonoids are people at the lowest levels of intake, and it doesn't take much to improve levels. A cup of tea a day or some berries two or three times a week would be adequate. Age 50 at which data was first analyzed for participants, is not too late to make positive dietary changes. The risk of dementia really starts to increase over age 70, and the take home message is, when you are approaching 50 or just beyond, you should start thinking about a healthier diet if you haven't already.

Certain foods common in diets of US adults with inflammatory bowel disease

May 6, 2020 Science Daily

Foods, such as French fries, cheese, cookies, soda, and sports and energy drinks, are commonly found in the diets of United States adults with inflammatory bowel disease, according to a new study by researchers in the Institute for Biomedical Sciences at Georgia State University.

The researchers analyzed the National Health Interview Survey 2015 to determine the food intake and frequency of consumption for U.S. adults with inflammatory bowel disease. The survey assessed 26 foods. The findings, published in the journal PLOS One, reveal that foods typically labelled as junk food were associated with inflammatory bowel disease.

Inflammatory bowel disease, which is characterized by chronic inflammation of the gastrointestinal tract, affects three million U.S. adults. There are two types of conditions, Crohn's disease and



ulcerative colitis. Common symptoms of inflammatory bowel disease include persistent diarrhea, abdominal pain, rectal bleeding or bloody stools, weight loss and fatigue, according to the Centers for Disease Control and Prevention (CDC).

This study found fries were consumed by a greater number of people with inflammatory bowel disease, and they also ate more cheese and cookies and drank less 100 percent fruit juice compared to people who did not have inflammatory bowel disease.

Consuming fries and sports and energy drinks and frequently drinking soda were significantly associated with inflammatory bowel disease. Consuming milk or popcorn was less likely associated with receiving this diagnosis.

Healthy eating behaviours in childhood may reduce the risk of adult obesity and heart disease

May 11, 2020 Science Daily

How children are fed may be just as important as what they are fed, according to a new scientific statement from the American Heart Association, published today in the *Journal of the American Heart Association*.

The statement is the first from the Association focused on providing evidence-based strategies for parents and caregivers to create a healthy food environment for young children that supports the development of positive eating behaviours and the maintenance of a healthy weight in childhood, thereby reducing the risks of overweight, obesity and cardiovascular disease later in life.

Although many children are born with an innate ability to stop eating when they are full, they are also influenced by the overall emotional atmosphere, including caregiver

wishes and demands during mealtimes. If children feel under pressure to eat in response to caregiver wants, it may be harder for them to listen to their individual internal cues that tell them when they are full.

Allowing children to choose what and especially how much to eat within an environment composed of healthy options encourages children to develop and eventually take ownership of their decisions about food and may help them develop eating patterns linked to a healthy weight for a lifetime, according to the statement authors.

The statement suggests that parents and caregivers should be positive role models by creating an environment that demonstrates and supports healthy food choices, rather than an environment focused on controlling children's choices or highlighting body weight. Parents and caregivers should encourage children to eat healthy foods by:

- providing consistent timing for meals;
- allowing children to select what foods they want to eat from a selection of healthy choices;
- serving healthy or new foods alongside foods children already enjoy;
- regularly eating new, healthy foods while eating with the child and demonstrating enjoyment of the food;
- paying attention to a child's verbal or non-verbal hunger and fullness cues; and
- avoiding pressuring children to eat more than they wish to eat.

Some parents and caregivers may find it challenging to allow children to make their own food decisions, especially if the children become reluctant to try new foods and/or become picky eaters. These behaviours are common and considered normal in early childhood, ages 1 to 5 years, as children are learning about the tastes and textures of solid foods. Imposing rigid, authoritarian rules around eating and using tactics such as rewards or punishments may feel like successful tactics in the short term. However, research does not support this approach; rather, it may have long-term, negative consequences. An authoritarian eating environment does not allow a child to develop positive decision-making skills and can reduce their sense of control, which are important developmental processes for children.

In addition, the authoritarian approach has been linked to children being more likely to eat when they are not hungry and eating less healthy foods that are likely higher in calories, which increase the risk of overweight and obesity and/or conditions of disordered eating.

On the other hand, an indulgent approach, where a child is allowed to eat whatever they want whenever they want, does not provide enough boundaries for children to develop healthy eating habits. Research has also linked this approach to a greater risk of children becoming overweight or having obesity.

Research does suggest that some strategies can increase children's dietary variety during the early years if they are "picky" or "fussy" about foods. Repeatedly offering children a wide variety of healthy foods increases the likelihood they will accept them, particularly when served with foods they prefer. In addition, caregivers or parents who enthusiastically eat a food may also help a child accept this food.



Modelling eating healthy foods -- by caregivers, siblings and peers -- is a good strategy for helping children to be open to a wider variety of food options.

It is very clear that each child is an individual and differs in their tendency to make healthy decisions about food as they grow. This is why it is important to focus on creating an environment that encourages decision-making skills and provides exposure to a variety of healthy, nutritious foods throughout childhood, and not place undue attention on the child's individual decisions. While efforts that encourage caregivers to provide a responsive, structured feeding environment could be an important component of reducing obesity and cardiometabolic risk across the lifespan, they note that they will be most effective as part of a multi-level, multi-component prevention strategy.



Vitamin D determines severity in COVID-19 so government advice needs to change, experts urge
 May 12, 2020 Science Daily

A new publication from Dr Eamon Laird and Professor Rose Anne Kenny, School of Medicine, and the Irish Longitudinal Study on Ageing (TILDA), in collaboration with Professor Jon Rhodes at University of Liverpool, highlights the association between vitamin D levels and mortality from COVID-19.

The authors of the article, just

published in the Irish Medical Journal, analysed all European adult population studies, completed since 1999, which measured vitamin D and compared vitamin D and death rates from COVID-19. The article can be viewed at: <http://imj.ie/irish-medical-journal-may-2020-vol-113-no-5/>

Vitamin D is produced in the skin from UVB sunlight exposure and is transported to the liver and then the kidney where it is changed into an active hormone that increases calcium transport from food in the gut and ensures calcium is adequate to keep the skeleton strong and free of osteoporosis. But vitamin D can also support the immune system through a number of immune pathways involved in fighting SARS-CoV-2. Many recent studies confirm the pivotal role of vitamin D in viral infections.

This study shows that, counter intuitively, countries at lower latitude and typically sunny countries, such as Spain and Northern Italy, had low concentrations of vitamin D and high rates of vitamin D deficiency. These countries also experienced the highest infection and death rates in Europe. The northern latitude countries of Norway, Finland and Sweden, have higher vitamin D levels despite less UVB sunlight exposure, because supplementation and fortification of foods is more common. These Nordic countries have lower COVID-19 infection and death rates. The correlation between low vitamin D levels and death from COVID-19 is statistically significant. The authors propose that, whereas optimising vitamin D levels will certainly benefit bone and muscle health, the data suggests that it is also likely to reduce

serious COVID-19 complications. This may be because vitamin D is important in regulation and suppression of the inflammatory cytokine response, which causes the severe consequences of COVID-19 and 'acute respiratory distress syndrome' associated with ventilation and death.

In England, Scotland and Wales, public health bodies have revised recommendations since the COVID-19 outbreak. Recommendations now state that all adults should take at least 400 IU vitamin D daily. Whereas there are currently no results from randomised controlled trials to conclusively prove that vitamin D beneficially affects COVID-19 outcomes, there is strong circumstantial evidence of associations between vitamin D and the severity of COVID-19 responses, including death. This study further confirms this association.

Government should encourage all adults to take supplements during the COVID-19 crisis. Deficiency is most prevalent with age, obesity, in men, in ethnic minorities, in people with diabetes, hypertension and in nursing homes. Optimising vitamin D intake to public health guidelines will certainly have benefits for overall health and support immune function.

Coffee linked to lower body fat in women

May 13, 2020 Science Daily

Women who drink two or three cups of coffee a day have been found to have lower total body and abdominal fat than those who drink less, according to a new study published in The Journal of Nutrition.



Researchers examined data from the National Health and Nutrition Examination Survey, organised by

the Center for Disease Control (CDC) in the United States and looked at the relationship between cups of coffee drunk per day, and both total body fat percentage and abdominal or 'trunk' fat (adiposity). They found that women aged 20-44 who drank two or three cups of coffee per day had the lowest levels of adiposity, 3.4% lower than people who did not consume coffee. Among women aged between 45 & 69 those who drank four or more cups had an adiposity percentage 4.1% lower. Overall, the average total body fat percentage was 2.8% lower among women of all ages who drank two or three cups of coffee per day.

The findings were consistent whether the coffee consumed was caffeinated or decaffeinated, and among smokers/non-smokers and those suffering from chronic diseases when compared to those in good health. In men, the relationship was less significant, although men aged 20-44 who drank two or three cups per day had 1.3% less total fat and 1.8% less trunk fat than those who did not consume coffee.

Research suggests that there may be bioactive compounds in coffee other than caffeine that regulate weight and which could potentially be used as anti-obesity compounds. It could be that coffee, or its effective ingredients, could be integrated into a healthy diet strategy to reduce the burden of chronic conditions related to the obesity epidemic.

Dairy-rich diet linked to lower risks of diabetes and high blood pressure

May 18, 2020 Science Daily

Eating at least two daily servings of dairy is linked to lower risks of diabetes and high blood pressure, as well as the cluster of factors that heighten cardiovascular disease risk (metabolic

syndrome), finds a large international study published online in *BMJ Open Diabetes Research & Care*.

Previously published research has suggested that higher dairy intake is associated with a lower risk of diabetes, high blood pressure, and metabolic syndrome. But these studies have tended to focus on North America and Europe to the exclusion of other regions of the world. To see whether these associations might also be found in a broader range of countries, the researchers drew on people taking part in the Prospective Urban Rural Epidemiology (PURE) study. Participants were all aged between 35 and 70 and came from 21 countries: Argentina; Bangladesh; Brazil; Canada; Chile; China; Colombia; India; Iran; Malaysia; Palestine; Pakistan; Philippines, Poland; South Africa; Saudi Arabia; Sweden; Tanzania; Turkey; United Arab Emirates; and Zimbabwe.

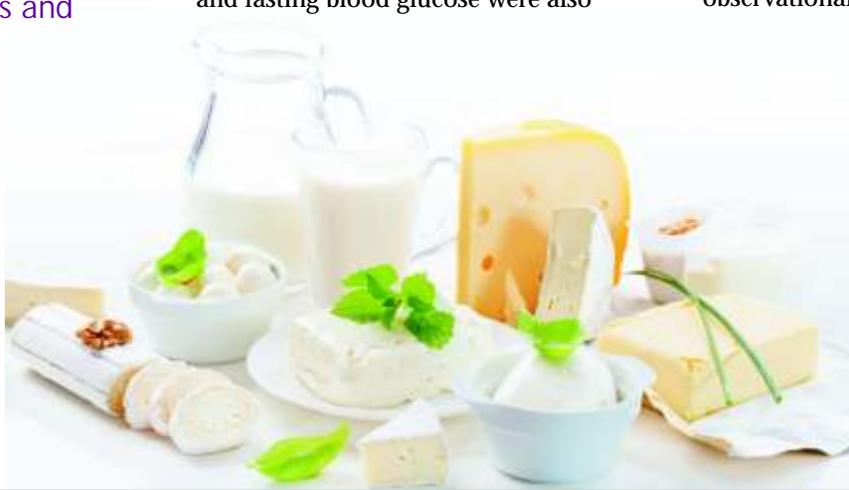
Usual dietary intake over the previous 12 months was assessed by means of Food Frequency Questionnaires. Dairy products included milk, yogurt, yogurt drinks, cheese and dishes prepared with dairy products, and were classified as full or low fat (1-2%). Butter and cream were assessed separately as these are not commonly eaten in some of the countries studied. Information on personal medical history, use of prescription medicines, educational attainment, smoking and measurements of weight, height, waist circumference, blood pressure and fasting blood glucose were also

collected.

Data on all five components of the metabolic syndrome were available for nearly 113,000 people: blood pressure above 130/85 mm Hg; waist circumference above 80 cm; low levels of (beneficial) high density cholesterol (less than 1-1.3 mmol/l); blood fats (triglycerides) of more than 1.7 mmol/dl; and fasting blood glucose of 5.5 mmol/l or more. Average daily total dairy consumption was 179 g, with full fat accounting for around double the amount of low fat: 124.5+ vs 65 g. Some 46, 667 people had metabolic syndrome -- defined as having at least 3 of the 5 components.

Total dairy and full fat dairy, but not low fat dairy, were associated with a lower prevalence of most components of metabolic syndrome, with the size of the association greatest in those countries with normally low dairy intakes. At least 2 servings a day of total dairy were associated with a 24% lower risk of metabolic syndrome, rising to 28% for full fat dairy alone, compared with no daily dairy intake. The health of nearly 190,000 participants was tracked for an average of nine years, during which time 13,640 people developed high blood pressure and 5351 developed diabetes.

At least 2 servings a day of total dairy was associated with an 11-12% lower risk of both conditions, rising to a 13-14% lower risk for 3 daily servings. The associations were stronger for full fat than they were for low fat dairy. This is an observational study, and as such can't establish cause. Food frequency questionnaires are also subject to recall, and changes in metabolic syndrome weren't measured over time, all of which may have influenced the findings.





Adding a blend of spices to a meal may help lower inflammation

May 21, 2020 Science Daily

Adding an array of spices to your meal is a surefire way to make it more tasty, but new Penn State research suggests it may increase its health benefits, as well.

In a randomized, controlled feeding study, the researchers found that when participants ate a meal high in fat and carbohydrates with six grams of a spice blend added, the participants had lower inflammation markers compared to when they ate a meal with less or no spices. The researchers used a blend of basil, bay leaf, black pepper, cinnamon, coriander, cumin, ginger, oregano, parsley, red pepper, rosemary, thyme and turmeric for the study, which was recently published in the *Journal of Nutrition*.

Previous research has linked a variety of different spices, like ginger and tumeric, with anti-inflammatory properties. Additionally, chronic inflammation has previously been associated with poor health outcomes like cancer, cardiovascular disease, and overweight and obesity, which affects approximately 72 percent of the U.S. population. In more recent years, researchers have found that inflammation can spike after a person eats a meal high in fat or sugar. While it is not clear whether these short bursts -- called acute inflammation -- can cause chronic inflammation, it's suspected they play a factor, especially in people with overweight or obesity.

For the study, the researchers recruited 12 men between the ages of 40 and 65, with overweight or obesity, and at least one risk factor for

cardiovascular disease. The sample was chosen because people in these demographics tend to be at a higher risk for developing poorer health outcomes.

In random order, each participant ate three versions of a meal high in saturated fat and carbohydrates on three separate days: one with no spices, one with two grams of the spice blend, and one with six grams of the spice blend. The researchers drew blood samples before and then after each meal hourly for four hours to measure inflammatory markers.

After analyzing the data, the researchers found that inflammatory cytokines were reduced following the meal containing six grams of spices compared to the meal containing two grams of spices or no spices. Rogers said six grams roughly translates to between one teaspoon to one tablespoon, depending on how the spices are dehydrated. While the researchers can't be sure which spice or spices are contributing to the effect, or the precise mechanism in which the effect is created, results suggest that the spices have anti-inflammatory properties that help offset inflammation caused by the high-carb and high-fat meal.

Demands for vitamin K2 RDI as study reveals potential for lowering coronary heart disease

29 May 2020 Nutrition Insight

Vitamin K2 has shown potential for lowering coronary heart disease (CHD) risk, while there is no association between intake of vitamin K1 and CHD. That is according to a recent observational cohort study published in the *British Medical Journal*, which examined the association between intakes of vitamins K1 and K2 and incidence of CHD.

The 11-year Norwegian prospective cohort revealed a link between K2 intakes and a lower risk of subsequent CHD events, building the evidence that K2's impact on calcification can greatly improve health outcomes. The researchers concluded a higher intake of vitamin K2 was associated with lower risk of CHD. Researchers followed participants (2,987 Norwegian men and women aged 46 to 49) in the community-based Hordaland Health Study from 1997 to 1999 through 2009 to evaluate associations between intake of vitamin K and incident (new onset) CHD. The purpose of the current study was to evaluate the association between intake of both K1 and K2 and subsequent CHD events among community-living middle-aged adults in Norway.



Bolstering vitamin K2 research
According to Dr. Vik, NattoPharma has driven the research confirming vitamin K2's important health benefits, showing in human studies with healthy and patient participants that the progression of hardening of the arteries can be halted and even regressed with daily supplementation of MenaQ7 Vitamin K2.

He adds that the Norwegian study builds on the body of evidence linking vitamin K status to health concerns such as peripheral arterial disease (PAD), coronary calcification, dementia, vascular stiffness in chronic kidney disease patients (CKD) and more.

“The common link is calcification and the need for adequate vitamin K2 intakes to inhibit this in our circulatory system and tissues. Due to its very molecular structure, vitamin K2 can move beyond the liver to support other systems of the body, such as the bones and vasculature, where K1 cannot.

There remains a great deal of confusion that K1 supports both bone and heart health, and this paper helps to identify the difference between the two in that K1 is not linked to cardiovascular health, whereas K2 is linked to both. These results mirror what we have seen in epidemiological studies, where populations who consume a lot of dietary vitamin K2 have healthier hearts and more flexible arteries.

Vitamin K status in patients with COVID-19 was linked to improved health outcomes, compared to patients with poor vitamin K status. The research, which was published in the journal Preprints, suggested a connection between low levels of vitamin K and the accelerated breakdown of tissue fibres, including elastin, which is involved with pulmonary disease.

Patients with severe COVID-19 are more likely to have co-morbidities

such as type 2 diabetes, hypertension and cardiovascular diseases (CVD), which are also associated with reduced vitamin K status.

Moreover, vitamins D3 and K2 have separately been widely recognized for their importance in balancing calcium for better bone and cardiovascular health. However, vitamins D3 and K2 each function more effectively in the presence of one other.

Edited by Elizabeth Green

to rise in the gut health space, this research supports the recent broadening of the definition of psychobiotics to include fermented foods and could optimize future generations of kefir products.

“On one level, it may seem very surprising that food that targets the gut microbes could modulate behaviour. However, there is increasing evidence in basic and even human research showing the importance of gut microbes for brain health. Based on these results,



Kefir shows potential as psychobiotic, mouse study finds

19 May 2020

The APC Microbiome Ireland study highlights the potential of fermented foods as a psychobiotics and expands kefir's applications

Feeding kefir to mice has modulated their behaviour via the gut-brain axis (GBA), according to a new APC Microbiome Ireland study. Its findings show that two varieties of kefir, Fr1 and UK4, had different and positive effects on the immune system and various behaviours of the mice. As kefir demand continues

we can begin to identify the key strains and mechanisms of action involved to harness them more specifically,” co-author Dr. John Cryan, Principal Investigator at APC Microbiome Ireland, tells NutritionInsight.

“The results highlight yet further potential benefits of consuming kefir and are among the first to clearly show effects on behaviour,” he explains. “Moreover, specific kefirs have already been shown to confer different health benefits and the microorganisms contained with kefir and lactic acid bacteria (LAB) in particular, are closely related to probiotic strains that have previously been shown to influence the GBA.”

Personalized nutrition and GBA spotlighted

Published in the *Microbiome Journal*, the study divided the mice into four groups of 12 – two groups gavaged with Fr1 and UK4, respectively, one cow's milk control group and an untreated group.

For three weeks, the treated mice were administered kefir or milk once daily. The results showed that Fr1 ameliorated the stress-induced decrease in serotonergic signalling in the colon and reward-seeking behaviour in the saccharin preference test. Fr1 also ameliorated the milk gavage stress-induced elevation in neutrophil levels and CXCL1 levels.

Uk4 kefir, on the other hand, increased fear-dependent contextual memory, yet decreased milk gavage-induced improvements in long-term spatial learning. It also reduced repetitive behaviour and ameliorated stress-induced deficits in reward-seeking behaviour.

The researchers found that both kefir significantly changed the composition and functional capacity of the mice's microbiota, where specific bacterial species were changed in a kefir-dependent manner.

Both kefir increased the capacity of the gut microbiota to produce Gamma aminobutyric acid (GABA). They also increased the prevalence of *L. reuteri*, *E. plexicaudatum*, and *B. pseudolongum*. Notably, *L. reuteri* is a bacterial strain known for its numerous beneficial effects on host immunity and metabolism.

Kefir on the rise

Dr. Cryan underscores how kefir has become considerably more popular among Western consumers in recent years.

"It is now produced by large multinationals and its accessibility

has increased considerably. While yogurt is still consumed on a much larger scale, it is regarded by many as a dietary staple with many people consuming yogurt regardless of whether they feel the need to improve their gut health or not. Those that consume kefir generally do consume it specifically for its perceived health benefits."

Whether these study results could be replicated in human trials is "difficult to know for sure," Dr. Cryan affirms, noting that more studies on the validation of kefir as a dietary intervention to improve humans' mood are warranted.

"Furthermore, more people make kefir than yogurt at home and these consumers tend to be very passionate when discussing the merits of kefir," Dr. Cryan concludes. Notably, the study highlights that the word kefir is derived from the Turkish word *keyif*, which translates as "good feeling."

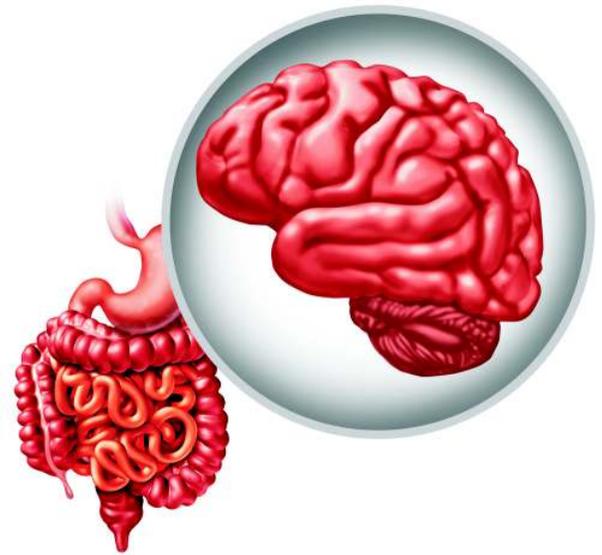
By **Anni Schleicher**

Nutrition and mental health: Hope Foods flags gut-brain axis importance in tackling depression

18 May 2020 Nutrition Insight

The importance of the gut-brain axis is increasingly highlighted by research which links the microbiome to mental well-being.

In this spirit, plant-based player Hope Foods and non-profit organization Hope For The Day (HFTD) have teamed up to promote mental health awareness and healthy diets through training sessions, educational events and



social media campaigns. The partnership is also stressing the connection of unhealthy diets to depression and the limited information on the topic available to the public.

"Too often diet isn't even part of the conversation with doctors and other health advisors," notes nutrition author Dr. Ian Smith.

"However, more research is being conducted and new studies are being released about the gut-brain axis that tell us diet can be incredibly impactful in nourishing one's mental health. The more awareness we can generate around this issue, the more lives we can help save," says Dr. Smith.

Emerging science suggests that a nutritious diet and a healthy gut may play a crucial role in fighting depression and mental illness. Hope Foods believes that using certain natural ingredients can play an important part in the way the physical body affects mental health.

According to estimates, 90 percent of the body's serotonin, a naturally occurring chemical affecting one's emotions and happiness, is generated in the gut. This suggests diet plays an important role when fighting depression.

Previously, researchers established a correlation between depression and a group of neurotransmitter-producing bacteria found in the human gut, further expanding clinical evidence of the gut-brain axis.

Another study flagged that people who experience anxiety symptoms might be helped by taking steps to regulate the microorganisms in their gut using probiotic foods and supplements.

Moreover, reducing the intake of red and processed meat as well as refined grain consumption can lower depression and improve the quality of life of bowel cancer survivors, according to research funded by the World Cancer Research Fund (WCRF) Network.

NutritionInsight previously reported on the gut-brain-axis phenomenon with researchers in this space explaining how overall health is not only dependent on nourishing ourselves, but also on sustaining the microbiome inside of us.

Foods with ingredients such as almonds, garlic, onions, chickpeas and avocado are all nutrient rich and support a healthy gut, the company states. Hope Foods uses such foundational ingredients to create delicious and nutritious hummus and its new Cashew & Almond dips boasting flavour profiles such as Avocado Ranch Cashew & Almond Dip.

Other nutrient-packed offers include Spicy Avocado Hummus, Roasted Garlic Cashew & Almond Dip, Black Garlic Hummus and Sea Salt & Olive Oil Hummus. All Hope Foods products are non-GMO Project verified, gluten-free, kosher and dairy- and soy-free.

Hope for mental health

Hope Foods carries a plant-based dips and spreads range which is hailed as part of a nutritious diet, while HFTD is a non-profit

organization focused on mental health education. Since 2011, HFTD has taken a holistic approach to addressing mental health awareness through proactive outreach, education and action in

an effort to prevent suicide. It has succeeded in helping thousands of people suffering from mental health issues educate themselves on how to address their problems and to live better lives.

“We’re passionate about what we do and those we partner with,” says HFTD Founder, Jonny Boucher. “So many people out there are struggling and don't realize there are helpful resources that can help them get through the good days and the bad but also live a better, healthier life.”

Edited by Kristiana Lalou



Connection between selenium and COVID-19 outcomes revealed in China analysis

06 May 2020 Nutrition Insight

A correlation has been found between low selenium levels and COVID-19 death rates in China.

This was revealed in a population-based, retrospective analysis published in *The American Journal of Clinical Nutrition*, which details

how meagre levels of the antioxidant in regions of China line up with worse COVID-19 outcomes. This comes as immunity continues to be a topic of great focus within industry, with players reporting boosts to sales.

“We have recorded an increased demand for selenium products. It is a trace element that supports the maintenance of the immune system, as documented in an approved European Food Safety Authority (EFSA) health claim. A strong immune system can help to reduce the duration of infectious diseases,” Dr. Sonja John, Product and Area Sales Manager Business Unit Food and Animal Nutrition at Dr. Paul Lohmann, tells NutritionInsight.

Study author Dr. Margaret Rayman, Professor of Nutrition Medicine at the University of Surrey, UK, also

tells NutritionInsight that as selenoproteins, selenium is an antioxidant that can reduce the oxidative stress produced by a viral infection. “It also acts as an anti-inflammatory agent and is crucial for a satisfactory immune response.”

According to the UK’s National Health Service (NHS), in addition to helping the immune system work properly, selenium helps prevent damage to cells and tissues. It also plays a role in reproduction.

Good sources of the nutrient include brazil nuts, fish, meat and eggs. The recommended dietary allowance (RDA) for adults is 55 µg a day, with 400 µg a day being set as the safe upper limit.

They found that at 13 percent, the cure rate inside Hubei Province was significantly lower than that in all other provinces combined (41 percent).

However, Enshi – a city in Hubei – had a much higher cure rate of 36 percent. Notably, Enshi is renowned for its high selenium intake and status to such a great extent that selenium toxicity was observed there in the 1960s. Selenium intake in Enshi was reported as 550 µg per day in 2013.

Similar inspection of data from provinces outside Hubei shows that Heilongjiang Province in northeast China, a notoriously low-selenium region in which the city of Keshan is located, had a much higher death rate. The selenium intake was recorded as only 16 µg per day in a 2018 publication.

The researchers also found a significant association between cure rate and background selenium status in cities outside Hubei.

By Katherine Durrell

COVID-19 NPD: India's research institute develops high protein and fibre foods for patients

By Tingmin Koe 19-May-2020 - Food Navigator Asia

An Indian research institute has developed a range of high protein and fibre foods, including cookies, bread, and rusks specially for COVID-19 patients.

The Indian Institute of Food Processing Technology (IIFPT), a research and educational institution under the country's Ministry of Food Processing Industries (MoFPI), says it has developed the foods to improve the immune health of the patients. Using ground nut and/or whey protein as the protein sources, each of these foods also contains spices and herbs such as turmeric.

With a protein content of as high as 14.16% in the cookies, director of IIFPT, Dr C. Anandharama-krishnan, told NutraIngredients-Asia, that this was about three times higher than the 4% to 5% present than standard.

As for the bread loaves, the protein content is slightly lower than the cookies but still higher than the 7% to 8% found in conventional white bread.



The bread, cookies, and rusk also boast a high fibre content of 8.1%, 8.71%, and 10.61% respectively.

However, the foods which contain no synthetic additives are not available for sale in retail or online channels at present. They are prepared and packed daily at IIFPT's HACCP and ISO-certified Food Processing Business Incubation Centre, are supplied to

COVID-19 patients who are under medical examination and those who have recovered after receiving treatment at the Thanjavur Medical College.

The institute is also going to develop new nutritional foods containing banana powder for free distribution to frontline workers, including police, doctors, and sanitary workers.

Besides the high protein and fibre content, the foods are enriched with immunity boosters and spice. All three products contain ayurvedic herbs such as turmeric, jeera (made from the cumin plant), and moringa leaves – which Dr Anandharamakrishnan said was a good source of protein, fibre, and iron.

Spices such as garlic, onion, clove, ginger, chilli, were also added, which he said were beneficial for immune health. "All the spices used are immune boosters having different bioactive components which can contribute in different ways," he said.

COVID-19 has sparked a number of new health foods product innovations.

In Singapore, dietary supplement firm Avida Health said it was

launching a chocolate ball functional food targeted at improving kids' immunity.

Key ingredients include probiotics, blackcurrant, and beta-glucan from yeast and fungi sources. Australia's Jatenergy said it was partnering with University of Sydney in developing a lactoferrin-based antiviral food supplement.

Valensa's joint health formula surprises researchers with cartilage protection

08 May 2020 Nutrition Insight

Valensa International's FlexPro MD may help overcome joint deterioration thanks to its combination of krill oil, astaxanthin and hyaluronic acid.

This is according to a new South Korean study published in *Nutrients*, which evaluated the response to osteoarthritis-induced conditions in rats. The study was sponsored by Valensa's partner, Novarex, and reveals new potential for the formula in protecting cartilage.

"Using dosages that would correlate to humans, the study shows FlexPro MD significantly ameliorated joint pain and decreased the severity of articular cartilage destruction after 21 days in the animal model," says Valensa's Chief Science Officer Margaret Dohnalek, who collaborated on the publication of the data.

The study also established further science behind the proprietary formulation, which includes Valensa's Zanthin Natural Astaxanthin, a specific molecular weight hyaluronic acid, with krill oil to deliver important fatty acids.

"We know that Zanthin Natural Astaxanthin is a powerful anti-inflammatory, which is important in pain management, and these data from the Korean team would suggest that Zanthin also plays an important role in joint health.

Certainly, the published literature continues to strengthen our appreciation of the power of astaxanthin, and this study further emphasizes the role a naturally-sourced joint health solution like FlexPro MD can bring to healthy aging and mobility," adds Dohnalek.

The study used an animal osteoarthritis pain model to build upon a previous human clinical study that showed FlexPro MD to be three to five times more effective in relieving joint discomfort than a standard commercial formulation of glucosamine and chondroitin. In this new study, the researchers found that animals treated with FlexPro MD were less affected by the osteoarthritis-induced conditions, which include relief from pain and inflammation. Surprisingly, the scientists saw the possibility of protecting the cartilage, a finding not before assessed for the joint health formulation.

It was also in collaboration with researchers from the Division of Life and Pharmaceutical Sciences at the Ewha Woman's University and the College of Pharmacy and Medical Research Center at Chungbuk National University.

New pathways for joint health
The study abstract explains that osteoarthritis is a degenerative joint disease with no known cure. Pharmacologic treatments may alleviate symptoms, but they do not inhibit the disease progression and may have negative side effects. As a result, people have turned to alternative approaches, including dietary supplements, in an effort to

improve symptoms.

The researchers conclude that the findings suggest FlexPro MD is a promising dietary supplement for reducing pain, minimizing cartilage damage, and improving functional status in osteoarthritis. This is without the disadvantages of previous dietary supplements – including glucosamine and chondroitin sulfate – and medicinal agents such as non-steroidal anti-inflammatory drugs (NSAIDs). The researchers note that many of these options have multiple adverse effects.

Dohnalek adds that although the new finding is unexpected, it could be highly relevant to joint health and anti-aging implications. "Through this research study, [the collaborators] have added new insights to the science of FlexPro MD to support the South Korean authorities in their regulatory review of these ingredients, opening a door for this population to find relief through natural means," Dr. Dohnalek said. She added that further research needs to be done, however.

In a similar space, Enovate Biolife's botanical ingredient Lanconone was recently found to provide joint pain relief within three hours of the first dose. In March, Stratum Nutrition's NEM – short for natural eggshell membrane – received confirmation in a new independent study that it can reduce joint pain and stiffness in patients with grade 2 and 3 osteoarthritis knee. Collagen and botanicals have also been major topics within joint health.

Edited by Katherine Durrell



FOOD SCIENCE & INDUSTRY NEWS

Understanding how compounds in chili peppers fluctuate during ripening

28 May 2020 -Nutrition Insight

Wellness start-up Heights has developed a subscription-based service delivering its omega 3 capsule packed with 18 key nutrients, which target a healthy brain and body.

The product is hailed as a “smart supplement” as it offers people with busy lifestyles a fast solution to supplementation. Notably, the launch features completely recyclable packaging, made of sugarcane starch and recycled plastic, and boasts a lightweight and minimalist design. The product comes as e-commerce is seeing accelerated growth due to COVID-19, with the brand reporting a 60 percent organic growth rise in recent weeks. The service starts at £1 (US\$1.20) a day and members get a monthly supply of the smart supplement delivered directly in environmentally sustainable packaging that fits through the letterbox. They also receive digital content in their inbox, including brain food recipes curated by experts to coach them through their journeys to improve brain health and sharper cognitive performance.

“We started with the idea of brain optimization. We examined urban lifestyles to understand what might be lacking and then combined the key vitamins, minerals, essential fatty acids and polyphenols to bridge the gaps. Every ingredient

has been chosen because it has the most efficacy for brain health,” Joel Freeman, Heights co-founder, tells NutritionInsight. The service starts at £1 (US\$1.20) a day and members get a monthly supply delivered directly in packaging that fits through the letterbox. “It is one clever capsule, enabling better absorption and intelligent delivery of the premium ingredients inside. We’ve only included nutrients that are less available in the average diet, and we have optimised the doses in line with what the research tells us is effective. Our innovative smart capsules combine omega 3 oil, vitamin B12, blueberry extract and other high-quality essential vitamins designed with the brain and body in mind,” Dan Murray-Serter, the other co-founder of Heights, tells NutritionInsight.

Mixing key nutrients

Each Heights capsule contains plant-based ingredients designed to contribute to mental performance, brain function and psychological function. The ingredients list includes blueberry 4:1 Extract (36 percent anthocyanins), DHA & EPA (from algae oil), pantothenic acid (B5), niacin (B3), riboflavin (B2), thiamine (B1), vitamin B6, vitamin E, vitamin C, iron, zinc, folic acid, vitamin A, iodine, chromium, selenium, biotin, vitamin B12 and vitamin D3. The Heights smart supplement combines oils and nutrients in a capsule that has been designed to slowly release the nutrients where they have the best chance of being absorbed, in the gut. The no-nausea formulation

also means the capsule does not have to be taken along with food and that it disintegrates at the exact moment where each unique vitamin receptor exists. The outer packaging, in the form of a box, is sugarcane starch, which comes from sugarcane production and is biodegradable, notes Murray-Serter. The bottle is made of PETG, making it recyclable. “We are also in the process of launching our own closed-loop recycling program,” he comments.

By Kristiana Lalou

Driving planet forward solutions for plant-based food and beverages

COPENHAGEN, Denmark, July 1, 2020

Danisco Planit marks the latest evolution in DuPont’s plant-based ingredient portfolio - a comprehensive range of functional ingredients and application expertise for food and beverages made with a ‘planet forward,’ sustainable approach.





get on the shelves for both foodservice and retailers. Now it's about staying there and growing further by offering a greater variety of categories.

"The market innovation for

products that allow consumers to eat a burger without eating meat, drink a milkshake without drinking milk, have been impressive," Borch said. "For the mass market consumer however, we want to do more. Mainstream consumers are not only looking to avoid meat or dairy, they are looking for a great eating experience. In order to take plant-based mainstream, we need to expand innovation beyond imitation. We want to support the shift to a more plant-based diet by creating multiple options, thereby enabling nutritious, plant-based food and beverages in every meal, every day—from early-bird breakfast to the midnight snack."

Borch sees plant-based as an opportunity for the industry to meet consumers' changing eating habits. "We believe co-creation is the route to shape the market and capture fast-evolving consumer needs for every eating occasion," Borch said. "We want to create sustainable consumer loyalty, ensuring that plant-based products are loved and tasty enough to become a regular part of consumers' diets, not just a 'try it once'."

Plant-in-it is key

In plant-based products, as in all food categories, taste and texture are imperative. However, in plant-based there are a variety of protein sources, and when combined with consumer requirements for health and nutrition, designing and formulating new formats that are top-performing in all sensory dimensions is a challenge. A great tasting product isn't just about flavor, but the interactivity among sight, smell, touch and sound.

Sensory expertise is at the center of new product development for plant-based food and beverages.

"We can turn our insights into business opportunities and forge a new product development pipeline with formulation strategies that maximize consumer liking and meet the requirements on nutrition and ingredient lists," said Sonia Huppert, Global Marketing Lead for Plant-based Health. "We keep a constant focus on developing ingredient solutions for new products, and for plant-based food and beverages in particular, to offer to the plant-based industry innovative solutions for plant-based yogurt, ice cream, drink, and meat alternatives, including full meal solutions."



Coronavirus food industry guidance outlined as situation eases

By Rod Addy 29-May-2020 - Food Manufacture

The UK food industry is preparing itself for an easing of coronavirus restrictions and many organisations are publishing guidance for businesses as the situation changes.

The British Standards Institute (BSI), the UK's National Standards Body, has published new safe working guidelines to help companies manage a safe return to work and reoccupation of their facilities. The guidelines are intended to become a consensus of good practice and BSI has encouraged businesses and the public to have their say and share their lessons and insights on safe

Planit range offers food and beverage manufacturers the broadest selection of ingredients for plant-based product development in the industry, supported by expert application knowledge and insights to design products for the future. Customers leveraging DuPont's innovation capabilities in the plant-based segment will be ahead of the curve in managing their global footprint.

"We named this new brand Planit as an acknowledgement that when scaling up this industry it must happen in a sustainable way," explains Birgitte Borch, VP of Marketing, Food & Beverage, DuPont Nutrition & Biosciences.

Company has decades of experience in the plant-based sector, providing support in every step from conceptualization to successful commercialization of innovative, yet locally relevant solutions and recipes that are ready to take to market.

"The depth of what we can offer our customers is unique in the industry," Borch said. Planit is a significant launch which offers a total ingredient solution with the ability to deliver taste, texture, nutrition and sustainability. Company believes in co-creation and look forward to innovating new formats and categories with customers to widen the food space and create great eating experiences for the growing group of global consumers that want to increase their plant-based consumption."

Capturing mainstream consumers

For the past couple of years, the plant-based space has been a race to

working to help protect public health. Version 1 of the guidelines is available for immediate use. It provides a framework for business owners, senior leaders, managers and workers to protect people at work from the ongoing risks related to coronavirus.

Review health and safety measures

With the Government recently announcing its COVID-19 roadmap out of lockdown, testing, inspection and certification body Bureau Veritas advised food firms to review health and safety measures. Earlier this month, the Government updated guidelines to help workplaces become COVID-19 secure, including advice for factories, plants and food outlets offering takeaway and delivery.

The guidance includes measures such as increasing the frequency of handwashing and surface cleaning and complying with the 2m social distancing guidelines.

Where the distancing guidelines could not be fully followed, companies are urged to consider whether that activity needs to continue for the business to operate. If so, they are encouraged to use Personal Protective Equipment as a secondary control.

At the same time, the Health and Safety Executive (HSE) has also changed its requirements for RIDDOR reporting – The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 - to include COVID-19. This means it's now a company's responsibility to report whether an unintended incident at work or possible exposure to the virus, has led an employee to contract COVID-19.

Drivers visiting premises
The HSE has also published a letter with the Department for Transport, to reassure drivers, and to remind businesses of their obligations to

provide suitable toilet and hand washing facilities to drivers visiting their premises. Businesses which make or receive deliveries must ensure that drivers have easy and safe access to toilets and hand washing facilities to support their health and wellbeing, it said.

The Gangmasters Labour Abuse Authority (GLAA) has announced it is suspending its temporary licensing scheme from 1 June. The GLAA created the scheme to meet a predicted urgent demand as the UK moved into lockdown, with some sectors of business effectively shutting down and others needing to draw in greater volumes of workers very quickly.

From June 1, the GLAA said it would accept no further applications for the scheme and incomplete temporary licence applications in process would be cancelled. The small number of current temporary licence holders would receive advice setting out how to proceed in seeking a substantive licence, the GLAA confirmed.

Scotland's egg and poultry suppliers Scottish farming union NFU Scotland highlighted priorities for food firms as Scotland entered the first phase in easing lockdown restrictions. It said Scotland's egg and poultry suppliers were well-placed, but stressed that haulage for eggs, poultry and packaging should be prioritised.

It urged for continued retailer support, considering the pressure in the egg and poultry market. NFU Scotland called for fairer supply chains to support Scottish UK production

in the long term and for retailers to reconsider cage-free pledges.

Government assistance could be needed should management of the market for class B and small eggs be required in the areas of transport, breaking and storage, it said.

The union also called for grant support for investment in egg and poultry farms that improve welfare and efficiency through measures including automation or building improvements.

Manufacturing trade body Make UK has called for the creation of a National Skills Task Force as mass redundancies are expected over the next six months as the Government's furlough scheme is wound down.

The group would aim to retain key skills within industry by re-deploying employees who lose their jobs to other companies and enabling them to be re-trained.

Coronavirus challenges compounded by peak season

By James Ridler 29-May-2020 - Food Manufacture

The challenges surrounding the coronavirus pandemic call for better communication between suppliers and retailers as the UK approaches peak retail periods, according to supply chain consultancy Scala's COVID-19 Supply Chain Collaboration Group.



Shifting consumer demand patterns, Brexit planning and availability of labour were likely to be among the food industry's most significant challenges in the coming months, according to the latest insights from the group. Seasonal peaks are fast approaching and uncertainty remains over what will happen once the transition period following Brexit ends at the end of this year. As a result, concerns were raised by members of the group about how these challenges could effectively be managed, with capacity already stretched thin due to the coronavirus.

Data sharing

In response, retailers have requested that suppliers share more data in a bid to create more transparent supply chains, facilitating innovation and gaining a clearer picture of areas that may need improvement.

John Perry, managing director at Scala, said: "Suppliers should accept that the pre-COVID-19 world has gone forever and expectations will now be based around demand in the 'new normal'.

Looking specifically to the months ahead, a major question is how suppliers will effectively manage the seasonal challenges of summer, Halloween and Christmas given ongoing industry uncertainty.

We must also consider the everlooming spectre of Brexit – preparation for which was already virtually impossible – how will businesses be able to adequately prepare when capacity is already so stretched?"

Consumer habits

Scala's latest insight also highlighted a shift in customer patterns for home deliveries, with peak delivery

days shifting from Wednesday–Friday to Monday–Wednesday. Scala's COVID-19 working group was formed at the end of March in a bid to strengthen manufacturers' and suppliers' links with retailers, foodservice and logistics companies.

More than 30 companies have pledged their support, including members of the food and drink industry. All members are invited to collaborate and membership is completely free to all organisations that wish to join. Meanwhile, the coronavirus pandemic led take-home grocery sales to grow at their fastest rate since records began in 1994, with the Co-op leading the charge, according to figures from market analyst Kantar.



Economic, environmental impact of palm oil

May 20, 2020 IFT Daily News

Palm oil is often associated with tropical deforestation above all else.

A study published in the Annual Review of Resource Economics reveals that rapid expansion of oil palm has also contributed considerably to economic growth and poverty reduction in local communities, particularly in Asia.

For the study, the agricultural scientists from the University of

Göttingen and the IPB University Bogor (Indonesia) evaluated results from over 30 years of research on the environmental, economic, and social consequences of oil palm cultivation in Africa, Asia, and Latin America.

They combined the results from the international literature with their data from Indonesia, which they have been collecting since 2012 as part of an interdisciplinary German-Indonesian Collaborative Research Centre (CRC 990).

The research data show that the expansion of oil palm in some regions of the world— especially Indonesia and Malaysia— contributes significantly to tropical deforestation and the loss of

biodiversity. Clearing forestland also leads to substantial carbon emissions and other environmental problems.

"However, banning palm oil production and trade would not be a sustainable solution," said study author Matin Qaim, an agricultural

economist at the University of Göttingen, in a press release. "The reason is that oil palm produces three times more oil per hectare than soybean, rapeseed, or sunflower. This means that if palm oil were replaced with alternative vegetable oils, much more land would be needed for cultivation, with additional loss of forests and other natural habitats."

Banning palm oil would also have negative economic and social consequences in producing countries. "It is often assumed that oil palm is only grown on large industrial plantations," said Qaim.

“In reality, however, around half of the world’s palm oil is produced by smallholder farmers. Our data show that oil palm cultivation increases profits and incomes in the small farm sector, in addition to raising wages and creating additional employment for rural labourers.”

Although there are incidences of conflicts over land, overall, the oil palm boom has significantly reduced rural poverty in Indonesia and other producing countries. The goal should be to make palm oil production more environmentally and climate-friendly,” said study co-author Ingo Grass, an agricultural ecologist at the University of Hohenheim.

“High yields on the already-cultivated land are important, in order to reduce additional deforestation. Mosaic landscapes, where oil palm is combined with patches of forest and other crops in agro-forestry systems, could also help to protect biodiversity and ecosystem functions.”

The authors conclude that developing and implementing more sustainable production systems are challenges that require both innovative research and policy making. Clearly and fairly defined land rights and improved access for smallholder farmers to training, credit, and modern technologies would be important steps forward.

Flavour for favour: Packaged yoghurt brands in India must innovate to gain edge over homemade variants

By Pearly Neo 25-May-2020 - Food Navigator Asia

Yoghurt brands in India will need to step up creativity and innovation in varying flavours if they wish to curry favour amongst local consumers, in a market where homemade yoghurt is rapidly gaining ground.

According to data from research firm Mintel, almost three quarters or 71% of all Indians have consumed fresh or homemade yoghurt over the past six months, and 64% have fresh or homemade yoghurt drinks during the same timeframe.

For both sectors in the yoghurt industry, packaged products have lost out: Just 57% of Indians have opted for packaged plain yoghurt, and 48% for packaged yoghurt drinks in the same timeframe. This may be explained by local health and taste considerations when it comes to the product.

“Just one in five (20%) of Indians say that homemade yoghurt is healthier than packaged yoghurt; and the same number think that packaged yoghurt drinks don’t have the authentic homemade taste,” Mintel Food and Drink Analyst, India, Natasha Kumar told FoodNavigator-Asia.

Added flavour is something consumers are not able to recreate at home entirely and so brands can have a competitive edge by providing packaged products with flavours. Some 9% of Indians say that there are not enough flavour varieties to choose from in packaged yogurt or yogurt drinks. Brands can explore hyperlocal flavours which are specific to a particular region in India to appeal to consumers across the country. For example, neer mor from South India, chaas from North India and buttermilk from West India.”

All three hyperlocal flavours mentioned are some variation of spiced buttermilk, but each has properties and taste profiles

unique to their region. “Brands can also innovate with sweet flavour profiles, as 41% of Indians say that they consume yogurt with sugar,” said Kumar.

“This could be done possibly by introducing small packs of sugar-sweetened yogurt, or, even better, varieties with natural sweeteners like jaggery and honey to give a ‘healthy’ or ‘natural’ angle. Another possibility is to use fruit-based flavours and take inspiration from familiar flavours like chocolate, lemon and honey that consumers have consumed in other forms, like flavoured milk and desserts.”

Fruit-based flavours are already being used by some of the bigger companies in the yoghurt sector such as Amul, Nestle, Danone and Epigamia – but hyper-localisation has yet to make a significant mark amongst packaged brands even if most, such as Amul and Nestle, already carry buttermilk as an individual item.

Kumar also encouraged brands to capitalise on the potential health, immunity and gut benefits that yoghurt can offer, given the recent COVID-19 pandemic outbreak.

According to Mintel data, only 2% of yoghurt and yoghurt drink products launched in India between January and December 2019 had a functional-immunity claim, 4% carried a digestive health claim, 15% claimed to be fermented, and none had a probiotic claim.



“With consumers more tuned into their overall wellness given concerns related to the global COVID-19 pandemic, they are looking to brands to help them make better choices for their health and safety,” she said.

“It is important for yogurt brands to play-up product health claims as not only will this lead to better brand equity, [it can] also build a case for why consumers should opt for packaged yogurt and yogurt drinks over homemade versions.

It is crucial for brands to highlight the reformulation efforts they have made to improve the nutritional profile of their products, the traditional techniques used to ferment and produce the yogurt, as well as the importance of various health benefits like fermentation and its link to digestive and gut health - as well as immunity-supporting ingredients.”

Kumar also highlighted the importance of focusing on probiotics as an emerging trend in the global yoghurt market, encouraging Indian brands to ‘highlight a specific strain of bacteria and its benefits’

That said, she also cautioned that the acceptance of such claims by local food safety authorities is not a guaranteed thing. “Multiple researchers have found the link between overall gut health and improved immunity.

It is then up to the manufacturers to communicate this link to the consumers effectively. However, making immunity claims and their credibility will be subject to the regulatory body,” said Kumar.



Method may help keep raw eggs safe

May 1, 2020 IFT Next

Eggs are a nutritious food source, but they can also be a source of Salmonella that causes food-borne illness. A team of researchers in Australia developed a method to decontaminate the surface of eggs without affecting the quality of the eggs.

Eggshell contamination with *Salmonella enterica* var Typhimurium is a cause of food-borne salmonellosis outbreaks and current methods of egg pasteurization and decontamination can properties of the egg proteins, according to the authors of a study published in Food-borne Pathogens and Disease.

The researchers turned to the sous vide technique. This involves cooking food in a temperature-controlled water bath. They artificially inoculated the outside of whole eggs with two *S. enterica* var Typhimurium strains and placed them in a sous vide cooker with the water heated to 57°C. The eggs were heat-treated for 30 seconds and 1, 2, 3, 4, 5, 6, 7, 8, and 9 minutes. After conducting a series of tests that examined the safety and quality of the eggs, the researchers determined that treating eggs for 9 minutes in

the water bath at 57°C completely decontaminated them and produced eggs that were rated acceptable for quality.

“We found that the preparation of mayonnaise at pH 4.2 or less and incubating it at room temperature for at least 24 hours could reduce the incidence of salmonellosis,” said Thilini Keerthirathne, an environmental health researchers at Flinders University and an author of the study, in a university press release.

The researchers concluded that using the method right before preparing products that contain raw eggs could help reduce salmonellosis. The researchers were based in Australia, and they noted that more work is needed to determine if the method works against other *Salmonella* strains found in Australia and if it is effective against heat resistance-induced strains of *Salmonella*.

“Future research is needed to examine the potential consequences of this method on shelf life and the permeability of the eggshell membrane, which will be of significance if the eggs were not to be used immediately,” according to the researchers.

International scientists propose eight elements to accelerate innovation in the food system

May 27, 2020 IFT Daily News

An international group of almost 50 scientists identified 75 emerging innovations and drew up eight action points to accelerate the transition to a sustainable and healthy food system. They published their action points in Nature Food.



Today, 40% of all land on Earth is used for food production. It contributes to land-use change, biodiversity loss, and greenhouse gas emissions.

“Major changes in the way we produce our food are therefore required,” said Hannah van Zanten, one author of the report from Wageningen University & Research, in a press release.

According to scientists, such a transition toward a sustainable and healthy food system requires a combined effort of farmers, consumers, food companies, and policy makers.

Under coordination of Mario Herrero from the Australian Commonwealth Scientific and Industrial Research Organization, 75 emerging technologies were identified that span the entire food value chain, from production and processing to consumption and waste management.

They include innovations that are now commonplace, such as 3-D printing and vertical agriculture, and those that are on the cusp, including nitrogen-fixing cereals that do not need fertilizer or feed for livestock made from insects or produced from human sewage.

While the study focuses on the transformative potential of technologies, it also proposes eight action points that could accelerate the transition toward a more sustainable food system.

The action points are as follows:

1. Building trust. It is vital to

increase trust between the actors of the food system, including farmers, consumers, and food companies. This involves a set of shared values about the desirability of different food system outcomes—for example, sustainability, provenance, and socioeconomic benefit.

2. Transforming mindsets. The transformation of agriculture requires a learning mindset by the actors of the food system. The need to better understand a technology and to change mindsets arises particularly in the case of technologies whose advantages and disadvantages are still largely unknown for a broad audience—for example, reconfiguring photosynthesis.

3. Enabling social license and stakeholder dialogue. Rising public awareness of the issues may create pressure from consumers, employees, investors, and government itself to push innovation in different directions (i.e., meat substitutes, nano-pesticides). Without engaging these actors in responsible innovation, potentially powerful technologies may not be adopted (i.e., genome editing).

4. Guaranteeing changes in policies and regulations. Expectations about future policies are essential for both public and private investments in technological change.

5. Designing market incentives. The appropriateness of measures and incentives and the factors that are critical to the success of transformational innovations are often context and technology-

specific. Making these incentives accessible to new entrants is critical, as it is unclear whether transformative innovation will emerge from established industry players.

6. Safeguarding against indirect, undesirable effects. There are real challenges in designing policy and investment frameworks to harness the transformational potential of new technologies. Unintended consequences that cause indirect, undesirable effects may be overlooked, especially where public acceptance remains to be determined.

7. Ensuring stable finance. Because this transformative change is likely to be unpredictable and its impact variable, stable funding is needed to ensure technology exploration and piloting under real-world conditions to test its effectiveness.

8. Developing transition pathways. The ‘how’ of achieving planned and actionable change is critical toward realizing these transformations.

Transition pathways include the necessary understanding of technologies and their impact, desired science targets, transition costs, identification of winners and losers, strategies to minimize adverse effects (socially, economically, and environmentally), gradual steps to be taken by different actors, major aspects of institutional reframing (public and private), as well as the systemic innovation required to achieve the expected transformation.



REGULATORY NEWS

NAD rules some Benefiber prebiotic supplements can't be called 'natural'

By Hank Schultz 28-May-2020 - Food Navigator USA

The National Advertising Division has ruled that GSK must stop calling some of its Benefiber prebiotic supplements '100% natural.' It's a ruling that could be viewed as troublesome for other prebiotic ingredients.

The NAD decision in a case brought by competitor Procter & Gamble found that GSK had provided insufficient evidence to show that the Benefiber Original and Benefiber Healthy Shape can be called "100% natural," and that its claims that the products are "clinically proven to curb cravings," and "helps you feel full longer" were not supported by sufficient evidence.

In delving into the sticky issue of what can be called natural, the NAD ruling noted that the two

Benefiber products in question (not all GSK Benefiber prebiotic supplements use the same ingredients) are made using wheat starch as a raw material feedstock.

Through a complicated process involving hydrochloric acid and enzymes the starch, which has no dietary fibre content to start, is transformed into an 85% dietary fibre wheat dextrin ingredient that is less viscous, more soluble and is somewhat sweeter than the starting material. That multi stage process and some of the inputs used don't match what most consumers would consider to be 'natural,' NAD ruled.

"NAD carefully reviewed the evidence and arguments set forth by both parties and determined that the processing of wheat starch to yield the wheat dextrin found in Benefiber represents a significant alteration of the source ingredient that is inconsistent with a consumer's reasonable understanding of a product that claims to be '100% natural,' and recommended that the

claim be discontinued," the organization said in a statement.

In a statement, GSK said it, "Respectfully disagrees with the NAD's findings and will appeal the decision in its entirety. GSK firmly believes that the challenged claims are supported and that the NAD's decision is inconsistent with the evidence in the record and NAD precedent. GSK appreciates the opportunity to participate in the self-regulatory process and looks forward to resolving this matter with the National Advertising Review Board."

The NAD ruling could have implications for many prebiotic ingredients. Many of these ingredients involve a series of processing steps to go from the source material, for example a chicory root, to a powdered or syrup form of inulin that is stable, well characterized and has well known formulation properties and clinically supported health benefits.

It's a slippery slope to start slicing and dicing production processes to determine which steps or inputs take the resulting ingredient outside of the 'natural' realm, said Global Prebiotics Association president Len Monheit.

"Consumer understanding and industry use of the term 'natural,' and especially the phrase '100% natural' is a contentious issue with a long history and a variety of implications. One of the practical discussions involves understanding what processing steps create material changes and where NDI applications may be needed," Monheit said.

"The majority of prebiotics are from natural sources. This means that they are sourced from natural materials and are not artificial or synthetic in their origin. Some prebiotic ingredients may have to undergo multiple steps such as isolation and purification before they are able to be used in foods or supplements, while other prebiotics are simply extracts of whole foods like roots, berries or beans," he added.

"The processing steps required to isolate or purify certain prebiotic ingredients should not take away from the fact that they are natural in their origin. However, GPA understands that the use of the term '100% natural' may have unintended implications or meanings for consumers and recommends industry use the term 'from natural sources,' " Monheit concluded.

It was not all doom and gloom for GSK when it comes to NAD rulings. In another recent challenge, also brought by Procter & Gamble, NAD ruled that the claims on another GSK Benefiber product were supported and could continue to be used. Benefiber Healthy Balance is made with partially hydrolyzed guar gum as its principle active ingredient. GSK submitted 15 clinical studies supporting the

product's claims—relieves occasional constipation, relieves abdominal discomfort and does not cause diarrhea—and NAD concurred that the body of evidence was sufficient to support the claims.

Raise RDA of vitamin C, D: Study urges health authorities to adjust guidance in light of COVID-19

By Tingmin Koe 06-May-2020 - Food Navigator Asia

Health authorities should reassess the Recommended Daily Allowance (RDA) of key micronutrients such as vitamin C and D to support the immune system said a group of researchers.



A group of researchers from the New Zealand, US, UK, and Netherlands, said that the RDA of vitamin C should be increased to 200mg and vitamin D to 2000 IU in their review published in *Nutrients*. "The immune system is more important than before to reduce the risk of infection. A low RDA is a risk factor for an impaired immune system," one of the researchers, Dr Manfred Eggersdorfer told *NutraIngredients-Asia*.

"The industries and the authorities now have the opportunity and responsibility to adjust the RDA," the professor for Healthy Ageing at the University Medical Center Groningen stressed. For some countries, the last time that they revised their RDA was nearly 20 years ago, such as Indonesia and Vietnam, added Dr Anitra Carr, from the University of Otago, who was also involved in the research. "Countries might have reassessed the RDA but have not made the actual revision throughout the years," she said.

Their suggestion to raise the RDA of vitamin C to 200mg is double the level of what China, Japan, Singapore recommend – and these are the APAC countries which

currently have the highest RDA within Asia – but still stays within the safe upper limits. The RDA of 200mg can be achieved by eating two to three kiwis or oranges.

However, for individuals down with infection, Dr Carr recommended an intake of 1-2g divided over different timings throughout the day. She explained that this was because vitamin C would deplete faster when one was unwell.

Recent meta-analysis also showed that vitamin C supplementation reduces the risk and impact of upper and lower respiratory tract infections. The suggestion of increasing the RDA of vitamin D is about three to 10 times higher than what most of the Asian countries have recommended. It is also over twice the amount of what some European countries such as Germany and Switzerland have recommended (800 IU/day).

Vitamin D has now come into the spotlight for improving immunity due to a series of new findings. A new study has called for vitamin D supplementation because researchers believe it could play a role in suppressing severity of COVID-19 infections Dr Eggersdorfer and his team also cited meta-analyses on how vitamin D supplementation could reduce the risk of respiratory tract infections in both children and adults, especially in those consuming the vitamin daily or weekly.

In APAC, India, together with Australia and New Zealand have some of the lowest RDA of vitamin C at 40mg/day and 45mg/day respectively. RDA varies across different countries because different countries use different criteria to make their decision. For some, it could be for prevention of disease, for others, it is about maintaining good health, Dr Carr said. Setting an RDA does not necessarily guarantee that the population's actual intake will be close to the recommended intake. "India has one of the lowest actual intake of vitamin C at 18mg, which is less than half of the RDA. This could be due to the rice-based diets and cooking methods which lower the amount of vitamin C in foods," Dr Carr said. In contrast, while the RDA is low in Australia, New Zealand, the actual intake is about 110mg – more than double the RDA.



India's task force to stem fake claims & FSSAI granting more time for new standards

By Tingmin Koe 30-Apr-2020 - Nutralngredients Asia

COVID-19 in India: AYUSH Ministry seeks scientific validation of traditional medicines after initial backlash India's Ministry of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy) is aiming to put a stop to false claims for the treatment or prevention of COVID-19 by setting up a task force to evaluate products and practices.

Earlier, the Ministry of AYUSH published an advisory suggesting the use of alternative medicines can act as an immunity booster against COVID-19. Since then, the Ministry has received flak from researchers and medical practitioners who criticised this advisory for the lack of scientific data, citing it as 'inappropriate', 'misleading' and 'potentially dangerous.'

Transition period: Children's complementary foods firms granted more time to meet new Indian standards The FSSAI has allowed children's complementary foods companies holding the

proprietary license to renew their licenses for a further 12 months, in order to provide more time to meet new standards. The decision was made after receiving requests from food business operators (FBOs) to allow them to have a transition period. Renewals can be made until the end of June. The additional transition period will also allow them to have the time to

reformulating their children's complementary foods to the new standards, as well as clearing the existing inventory.

Truth in advertising? US self-regulation program ends, global watchdogs issue warnings

14 May 2020 Nutrition Insight

Consumers continue to face a torrent of information - true and false alike - meaning it is often coming down to advertising watchdogs to decipher fact from fiction.

Throughout the week, US and UK authorities have both issued warnings to companies for falsely implying their products can have an effect on viruses, while the Australian Department of Health's Therapeutic Goods Administration (TGA) has published advice helping consumers to identify a "dodgy" health product advertisement.



Programs' National Advertising Division (NAD) are ending their joint US-based self-regulatory initiative. "The responsible dietary supplement industry recognizes the role truthful and accurate advertising plays in levelling the playing field for honest advertisers and in providing consumers with accurate information about products they rely on to improve their health and wellness. Although the CRN/NAD program has come to its end, our partnership with NAD continues," says Megan Olsen, Vice President and Associate General Counsel of CRN.

The program, which will now conclude on July 1, was launched in 2006 to monitor and promote truthful and accurate advertising for the dietary supplement industry. It has closed more than 360 cases, including topics ranging from weight loss and sports performance to sun protection and tinnitus. According to NAD, its unique ad-monitoring and peer-to-peer process encouraged cooperation and allowed companies the opportunity to voluntarily change non-compliant behaviour before facing potentially serious consequences from the Federal Trade Commissioners (FTC) and other law enforcement agencies. Each monitoring case or challenge provides advertisers a written decision explaining the review with instruction and guidance for future advertising if changes are needed. According to the program, filing a challenge with NAD is a lower cost option than litigation and typically moves much faster than a court decision. Meanwhile, CRN encourages industry to stay vigilant of suspect advertising and consider filing challenges against companies making egregious claims in the dietary supplement marketplace.

"CRN and NAD's dietary supplement advertising review program has played a key role in self-regulatory efforts and has contributed to creating a

marketplace that consumers and industry can trust. Responsible industry's participation has been critical to the program's success in the past and we urge companies to remain supportive of NAD's continued role and file challenges against companies making unsubstantiated or deceptive advertising claims," continues Olsen. More recently, NAD developed the Fast-Track Single Well-defined Issue Fast Track (SWIFT) program to provide companies with an even faster method to address particular advertising challenges. Examples of challenges that may be eligible for the SWIFT program include those in which the material connection between an influencer and advertiser is not disclosed; those with content that looks editorial but is really an advertisement; misleading sales and pricing claims; and simple express claims.

Watchdogs around the world crack down on scammers

In recent months, the outbreak of COVID-19 has created increased urgency around the monitoring of health claims as nutrition "scammers" attempt to cash in on fears, including in the colloidal silver space. To date, the US Food and Drug Administration (FDA) has warned 48 companies for selling products that misleadingly represent the products as being safe or effective for the prevention or treatment of COVID-19. Meanwhile, the US state of Oregon recently adopted stricter measures to crack down on COVID-19 claims. Across the Atlantic, the UK's Advertising Standards Authority (ASA) warned two companies for claims related to immunity and viruses. In the case of The Chuckling Goat, the food products provider had featured a poster calling itself "The Gut Health Experts." Next to this, the poster included "What's your best defence against any virus? Boost your immune system. Quick and free – Live Gut Health Advice." ASA also

points to further questionable content on the company's website. "We considered that consumers who were already familiar with the Chuckling Goat brand would most closely associate it with its kefir-based food products. In that context, we considered they would interpret the claims in the ad as relating to the Chuckling Goat food products. Consumers who were, however, unfamiliar with the brand, we considered, would understand from the ad that Chuckling Goat was offering advice, linked to gut health, about how to prevent catching viruses," states ASA. The watchdog concluded that the claims implied that Chuckling Goat's food products prevented, treated or cured human disease, which was prohibited under the Code. As a result, the ads cannot appear again in the same form.

Warnings about vitamin shots and "influencers"

ASA also addressed a promotional email from aesthetic clinic PCK Skin, trading as Skinspace, which featured a subject line offering a discount in the "fight against viruses." Within the body, the email was advising people to book vitamin D and B12 shots to support the immune system and lung function. It also stated that they aid faster recovery from illness and viruses. ASA took issue with the advertising of prescription-only medicines to the general public and argued that the advertising gave the impression to recipients that the vitamin D and vitamin B12 injections being sold were effective in helping to prevent or treat coronavirus. The advertisement cannot appear again in the form complained against and PCK Skin will no longer promote prescription-only medicines to the general public. Finally, TGA is warning Australian consumers that if a product seems too good to be true, then it probably is. It highlights that common claims that may be red flags include being 100 percent effective, a miracle cure, harmless or free of side effects.

It also warns of consumers following the advice of people who are not health professionals, such as social media “influencers.”



Industry calls for "plant-based" terminology clarification as marine ingredients rise to surface

27 May 2020 Nutrition Insight

Marine ingredients are emerging as a key sector within the plant-based market, with algae and water lentils both providing essential nutrients to consumers who are increasingly turning away from animal-derived foods.

However, the rise of the term “plant-based” – often at the expense of vegan or vegetarian claims – has created some confusion about what exactly it entails. This is elucidated by key industry players, who speak to NutritionInsight about the future of this fast-moving space. “A few years ago, plant-based was still a niche market. Now, with concerns about health and environmental impact, plant-based products are mainstream. Although the number of people who identify themselves as vegetarian or vegan isn’t that high, many consumers identify as flexitarians and include plant-based options in their diets,” says Andie Long, Marketing & Sales Manager at AstaReal.

However, Outi Armstrong, Head of Global Marketing Communications, Human Nutrition and Health at

DSM, flags that it is crucial that industry “gets the terminology right” to distinguish between popular buzzwords including vegan, plant-based, organic and clean eating. “Food manufacturers also need support to make sure any product claims are adequately substantiated. At DSM, we define ‘plant-based’ as a product that consists of ingredients derived only from a land or marine-based plant or otherwise suitable for a plant-based diet. The ‘functional’ compound found within the original plant must be retained in a meaningful amount after processing. Plant-based sources include anything from vegetables, fruits, whole grains, nuts, seeds and legumes – to trending ingredients like tree bark, mushrooms and algae,” Armstrong continues.

For Fiona Sweeney, Strategic Marketing Director of Europe and Russia at Kerry, the three main types of consumers within the plant-based category are flexitarians, vegetarians and vegans. “It is important to understand each of their needs as this will impact how they perceive different products. Offerings labelled as ‘plant-based’ will appeal to the larger flexitarian consumer base. While there is no set definition of plant-based products, it is understood by consumers to mean a diet consisting mostly of vegetables, fruits, legumes, nuts, whole grains and beans. It doesn’t necessarily exclude animal products, and consumers that identify with eating a plant-based diet may fall anywhere along the spectrum from a flexitarian to a vegan,” she explains. Vaughn DuBow, Marketing Manager of Americas CHI at Lonza, also notes that a plant-based product may still include non-plant-based chemicals, processing elements or other ingredients. “More often than not, plant-based products are both vegan and vegetarian-friendly, but it is important for discerning consumers to fully research all of the

ingredients contained within a product to determine if it fits within their personal needs or not.”

Marine ingredients take hold According to Innova Market Insights, the use of marine oils in F&B launches increased globally, featuring a 41 percent year-over-year growth when comparing 2019 and 2018 launches. While various fish-derived products still make up the lion’s share of marine oils on the market, algae products now represent 7 percent of launches. According to Armstrong of DSM, algal ingredients are not new in the nutritional space, but renewed interest has increased their profile and demand. Consumers are becoming more familiar with algae and its affiliation with health and wellness, nutrition, environmental sustainability, biotechnology, and the future. An algal or plant-based source can drive increased interest in a brand and attract attention from new users, she explains.

“Marine ingredients, especially algal-based ingredients, are a natural fit for consumers who are increasingly health-minded and focused on protecting the environment. We have seen significantly more interest in higher protein and plant-based diets on a global basis. According to Innova Market Insights, algae are anticipated to become a mainstream of diets globally,” explains Miguel Martinho, Marketing Manager in Europe of Kemin Human Nutrition and Health. Armstrong further notes that overfishing and other environmental factors are also driving a shift away from fish. “Therefore, it is imperative to identify viable and sustainable omega 3 alternatives like our product, called life’s OMEGA, which is the first plant-based alternative to traditional fish oil. It is a pure, potent and natural source of both DHA and EPA, and can play an important role in normal human growth and development.”
By Katherine Durrell



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