PFNDAI

PFNDAI Bulletin

DEC 2019

FOOD, NUTRITION & SAFETY MAGAZINE

THE SWEET ALTERNATIVE TO SUGAR

Mr A. Sankara Narayanan & Mr T.K.Raju

ALSO INSIDE

PROTEIN FOODS AND NUTRITION DEVELOPMENT ASSOCIATION OF INDIA

2nd Floor, Mahalaxmi Chambers, 22 Bhulabhai Desai Rd., Mumbai - 26 (India)
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PFNDAI **PFNDAI Bulletin** DEC 2019
FOOD, NUTRITION & SAFETY MAGAZINE

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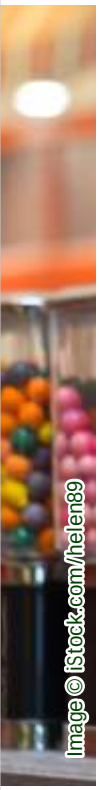
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INDEX

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EDITORIAL

We published an article on alternatives to conventional meats which very nicely gave a summary of various alternatives to meat from animals for many products such as burgers and sausages etc.

These efforts were started mainly because of a few reasons such as people may not want to eat animal based products, or that rearing of animals causes too high a carbon footprint or that people may not want to eat animal products as they may consider this cruelty to animals. Whatever the reasons, there are diverse ways in which the alternatives are being developed and some are already in the market.

People are vegetarians for many reasons of which two main reasons may be religious and due to health. A large number of Indians are vegetarians because of their religious beliefs forbids them to eat meat, fish, poultry, egg and products, all coming from animals. Although milk is an animal product but that is permitted. These people may want to enjoy a burger or hotdog but because of it being sourced from animal meat they can't enjoy. Similarly many meat dishes such as tandoori chicken or seekh kebab, kheema patties or chicken tikka have become so popular world over they may want to taste them but their vegetarianism comes in the way.

Many products have been developed from soya and other beans with very high content of proteins. These could be made into meat like chunks or granules with processes and/or additives. Originally soya meat analogs or extenders were produced to be mixed with real ground meat for increasing the supply or reducing cost. This would have meat too so not acceptable to vegetarians. Now some very high quality substitutes are produced with properties of real meat so could substitute meat 100%.

There are now efforts to grow meat cells in a bioreactor. Animal cells could be grown in a medium just like microbial cells if all the nutrients needed are provided with proper environmental conditions of temperature and dissolved gases are maintained. This totally avoids a live animal to be grown with feed or pasture. It also avoids all problems of diseases the animals get. The best advantage is the area needed is extremely small so a factory can grow as much meat as several thousand acre farm with large number of farm helpers and other paraphernalia. This not only avoids need for a large area but also it gives much smaller carbon foot print so pollution caused is very little. One more advantage is that almost all meat produced can be used in making food products with very little waste.

This of course may not be acceptable to vegetarians but certainly environmentalists and those who do not want animal cruelty. Thus such new developments are going to make a lot of changes in the world of food industry in near future.

Prof Jagadish Pai,
Executive Director,
PFNDAI

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THE SWEET ALTERNATIVE TO SUGAR

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AUTHORS

Mr A. Sankara Narayanan & Mr T.K.Raju,

Max Natura FZ-LLC,

S20/06, Al Hulaila Industrial Area-Free Zone,
Ras Al Kkhaimah, UAE
Contact: (+971 525508251)/
(+919048838220-Intl roaming) & (+91 9886605800)
E: sankar@maxnatura.net ; valiamadom77@gmail.com ;
raju@maxnatura.net, & tk.raju@gmail.com
W: www.maxnatura.net

In a society where convenience and over processing could be seen to rule – it is comforting to know that some things remain natural. Thaumatin is wild harvested from the West African rainforests. It is a low-calorie flavour modifier, a natural protein physically extracted from the Katemfe Fruit, Thaumatococcusdaniellii.

The power of thaumatin's taste enhancement properties has a long and distinguished legacy. It has been used by the West Africans for hundreds of years to sweeten corn breads, sour fruits and also to make palm wine palatable. It was first brought to the attention of the western world in the 1840's when, during a posting to the region, British Army Surgeon, W F Daniell, made note of how the locals used thaumatin. He later reported his findings in a pharmaceutical journal. In the 1970s, great emphasis was placed on thaumatin's sweetening properties and for some time this defined its regulatory and marketing path.

Thaumatin is a natural sweetener, coming under the category of intense sweeteners. Thaumatin is produced from the arils of the fruit. ThaumatococcusDanielliithat grows in the wild abundantly and is available in the rain forests of West African countries like Ivory Coast, Ghana, Nigeria, Senegal, Liberia and Central African countries like Cameroon, Gabon etc.Thaumatin is a mix of 2 proteins named Thaumatin T1 and Thaumatin T2. These 2 proteins are composed of 207 amino acids and have a molecular weight of respectively 22,209 & 22,293.

It characterizes with sweetness about 3000 times higher than sucrose (on a weight basis). As it is protein, it undergoes the same dige¬stion in the human organism and supplies 4 kcal/g, but due to such high sweetness it is used in extremely small amounts, thus, their caloric values in food is negligible.

Properties of Thaumatin

It has become an increasingly mainstream natural low glycemic

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Thaumatin has such high potency sweetness relative to sugar (roughly 3000 times sweeter than table sugar) that only a tiny amount is needed to sweeten foods. The amount of calories added to a food when thaumatin is used as a sweetener is negligible. Thaumatin is also used to enhance flavours and mask bitterness. Although quite sweet, its sweetness builds slowly. It is metabolized by the body similar to any other dietary protein.

■ Taste: Thaumatin is sweet, with a slow onset, lingering sweetness and a liquorice after-taste. Sweetness potency relative to sucrose is about 3000x on a weight basis. It is approximately 3000 times sweeter than sugar.

■ Calories: Thaumatin is a protein, so it has 4 calories per gram. Since it has such high potency relative to sucrose, the amount used is extremely small, and so it does not provide measurable caloric value at use levels in foods.

■ Safety: In the United States, thaumatin has GRAS status as a flavour enhancer; it does not have approval as a sweetener. JECFA and EFSA consider thaumatin safe for use as a sweetener. Thaumatin is digested like any other protein, so there is no concern about toxicity.

Following a favourable scientific opinion from the European Food Safety Authority(EFSA), formulators are able to use the natural protein sweetener and flavour modifier thaumatin in a broader range of applications. The decision supports extending the categories in which thaumatin can be used to include food flavourings, salt substitutes, soups, snacks & sauces, energy reduced break-fast cereals, jams and jellies, food supplements and alcoholic and non-alcoholic beverages. The risk assessor has also given its stamp of approval to an increase in the maximum use level from 0.5 to 5 mg per litre in flavoured drinks.

Overview of Worldwide Regulatory Status

Thaumatin is classified by JECFA (Joint FAO/WHO Expert Committee on Food Additives) and CODEX as safe and has no maximum allowable daily intake (ADI). The body digests Thaumatin in the same way as any other protein.

FEMA GRAS 3732

• Approved by the Flavour Extract Manufacturers Association as 'Generally Recognised As Safe' in over 30 different food categories.
• Defined as a flavour ingredient Thaumatin is approved for wide use in food and does not have to be labelled although there are limitations upon final inclusion levels.
• Self-GRAS for animal feed.
• Under the European free trade agreement most non - EU countries will allow use of EU approved ingredients and implement them into local legislation although this may take some time.
Outside USA and EU member states several countries also accept FEMA, GRAS and allow general use of Thaumatin as a flavour ingredient.

Applications

Partial Replacement of Sugar

• Sugar can be replaced up to 90% with equivalent Thaumatin in preparation of variety of sweets
• By this application calorie intake is drastically reduced

Table Top Sweeteners

Suitability for any table sweetener goes beyond its outstanding flavour performance. It is also the healthier option due to the following reasons.
• Insignificant calorie contribution.
• Masks after taste of some high intensity sweeteners like stevia.
• Delivers a sugar like taste in combination with some high intensity sweeteners & polyols.

Savoury Products

Gives outstanding results in savoury applications and may help in reducing salts.
• In savoury product the salt level can be successfully reduced to 30%.
• Gives savoury products a more rounded flavour.
• Enhances the spicy notes.
• Reduces bitter notes associated with potassium chloride.

Dairy & Non Dairy Desserts

Works especially well in yoghurts, mousses, ice cream and soya based desserts.
• Perceived increase in body, particularly in low fat yoghurts & desserts.
• Improved flavour perception in low fat products.
• Masks astringency or unwanted notes from other ingredients.

Confectionery

Perfect for hand candies, gummies & chocolates because it-
• Enhances, improves & prolongs flavours, particularly citrus, berry & mint.
• Helps to reduce after taste of other high intensity sweeteners.
• Sugar like taste in combination with polyols & high intensity sweeteners.


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Beverages (Including Dairy & Soya Milk)

Ideal for water based flavoured & non-alcoholic drinks as well as dairy & soya based beverages.

• Perfect at working with primary sweetening system to enhance & round the flavour & sweetener profile.

• Masks after taste of some high intensity sweeteners.

• Helps extend shelf life of beverages by masking the breakdown of citrus.

• Low fat dairy beverages seem creamier.

Chewing Gum

A longer lasting flavour is a must for every chewing gum manufacturer.

• Significant enhancement of spearmint, peppermint, citrus &other fruit flavours.

• Improved sweetness profile with polyols & high intensity sweeteners with enhanced cooling effect.


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May 28-29, 2020
Shanghai, China
T: +86 132 62930934
E: marcia.liu@personalized-nutrition.cn

NUTRITION AWARENESS ACTIVITY

held on Wednesday 25th September 2019 at SVT College of Home Science, Mumbai

REPORT BY –
Ms Swechha Soni,
Nutritionist, PFNDAI

PFNDAI had organized a Nutrition Awareness Activity at Sir Vithaldas Thackersey College of Home Science, Autonomous in collaboration with their Department of Food, Nutrition and Dietetics.

The total participation of students and professionals was about 200. Total six colleges from Mumbai had participated. The theme of the Activity was Food For Holistic Health. The Sponsors of the event were MOTHER DAIRY, HERBALIFE NUTRITION, and AMWAY. Recipe competition was supported by Herbalife Nutrition by providing ingredient mix for the competition.

The morning session started with the intercollegiate competitions among students. Students from six different colleges participated in the different competitions.

Three competitions were organized: Recipe Competition, Poster making competition and Street Play. There was huge participation in all the competitions. For the recipe competition the theme was Protein and Fibre Rich Recipes for which the following samples were provided to the participants by Herbalife Nutrition:

1. Herbalife Nutrition's Personalized Protein Powder
2. Herbalife Nutrition's Active Fiber Complex

There were two sub categories in the recipe competition, one was protein rich recipes and the other one was fiber rich recipes. There were total 32teams (22 for the protein rich recipe category and 10 for the fiber rich recipe category) each team having two participants for the recipe competition. The Judges: Ms. Shilpa Joshi, RD; Dr. Ashlesha Parchure, Founder VR FoodTech; Ms. Sukhada Bhatte, Sr Manager Regulatory and Nutrition- Hexagon Nutrition and Ms. Ruby Sound, consultant dietitian took efforts in going through all the recipes, tasting them and evaluating to find the best three recipes for each sub category.

Some of the recipes from the Recipe Competition

Representatives from PFNDAI and SVT College of Home Science

The Poster making competition had 17 teams having two participants each. Students were given the theme of Label Design for a Healthy Food conveying its benefits. The idea behind this theme was to evaluate the understanding of food labels among students. The students were asked to explain their food label posters. The posters were evaluated by Judges Ms. Gauri Iyer, Technical Services, Customer Innovation Centre, AAK Kamani and Ms. Nadiya Merchant, Manager-Nutrition, Kellogg India. First three winners were awarded.

Some Posters from the Poster Making Competition

For the street play we had total 3 huge teams having participants ranging from 10-15 in each team. The street play was based on the theme of Food Safety. The students had come up with some really amazing skits where they tried to show some good hygiene practices and some food safety principles that must be known to all the consumers and the small scale vendors. The skits were very interactive and lively and all the participants enjoyed it. One team was selected as a winner.

Winners

I. Intercollegiate Recipe Making Competition

a. Protein Rich Recipes

1st prize won by Ms.NikhatShaikh and Ms.SofiyaShaikh from Smt. Maniben M.P. Shah Women's College of Arts and Commerce

2nd prize won by AnchalKaushal Kishore Tiwari and Ayushi Parekh from College of Home Science NirmalaNiketan

3rd prize won by Riya Gaglani and Vidhi Jain from Sir Vithaldas Thackersey College of Home Science (Autonomous), SNDTWU

b. Fibre Rich Recipes

1st prize won bySmita Tatkare and Isha Churi from Premlila Vithaldas Polytechnic College

2nd prize won by Karishma Sonawane and UjwalaGhule from Premlila Vithaldas Polytechnic College

3rd prize won by Dhruvi Jain and Ashvi Jain from Sir Vithaldas Thackersey College of Home Science (Autonomous), SNDTWU

II. Intercollegiate Poster Making Competition

1st prize won by Drashti Zatakia and Dhvinal Shah from Sir Vithaldas Thackersey College of Home Science (Autonomous), SNDTWU

2nd prize won by Siddhi Raiand Nishita Nandu from Sir Vithaldas Thackersey College of Home Science (Autonomous), SNDTWU

3rd prize won by Shaheena Patel and Sakina Rangwala from Sir Vithaldas Thackersey College of Home Science (Autonomous), SNDTWU

III. Intercollegiate Street Play Competition

Winners of the street play were the team from Sir Vithaldas Thackersey College of Home Science (Autonomous), SNDTWU having the following participants: Apurva Gaitonde, Vidhi Jain, Soumya Adarkar, Priyal Tailor, Shanaya Talati, Riya Gaglani, Tanishka Malvankar, Araina Trehon, Kashish Parekh, Zeel Shah, Riya Mishra and Srinidhi Bhangdiya.

Street Play

TECHNICAL SESSION

In the afternoon, the seminar was inaugurated by the lighting of the lamp.

Dr. Jagmeet Madan, Principal, gave an inaugural address to the audience. She shared some data and insights about the carbohydrate consumption in the country and worldwide. She also shared a study on effect of diet rich in resistant starch on health.

Ms. Mani Misra, Scientific regulatory and Nutrition Affairs, Mother Dairy presented a talk on Role of Dairy Nutrition in National Nutrition Mission. She raised the most critical subject of Malnutrition and shared the data of the people affected by it worldwide.

She also talked about the Nutrition intervention Programs in India for tackling the issue. She further added the various dairy innovation offerings with fortified vitamins that can help target the issue of malnutrition.

Mr. Abhinav Shrivastava, Head of Regulatory Policy, Amway presented a talk on Importance of Supplementation & possible Economic Impact. He explained how Indians live a longer life but with poor health. He mentioned that the life Expectancy is increasing worldwide but with a decreased quality of Life, which may risk the life expectancy to go down.

He also mentioned about the various possible reasons of not living a healthy life. He further added that Global warming is one of the causes for nutrient loss.

He concluded by adding that there are solutions available such as targeted food supplements that could reduce the health risks and health care costs in consumers.

Dr. Jagadish Pai, Executive Director, PFNDAI gave a brief talk on the current trends in the food industry. He pointed out the advances of the food processing industry. He also mentioned to the students the scope of food science and nutrition and the opportunities.

The seminar was followed by prize distribution to all the winners. The speakers and the judges were awarded with a token of appreciation by PFNDAI.

The program ended with the vote of thanks to the Sponsors, Speakers, Judges, Organizers, participants and the audience.

We would like to thank our Sponsors: MOTHER DAIRY, HERBALIFE NUTRITION, and AMWAY for extending their support towards this activity.


Ms. Mani Misra


Dr. Jagadish Pai


Mr. Abhinav Shrivastava

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*Source: The Times of India, July 2017

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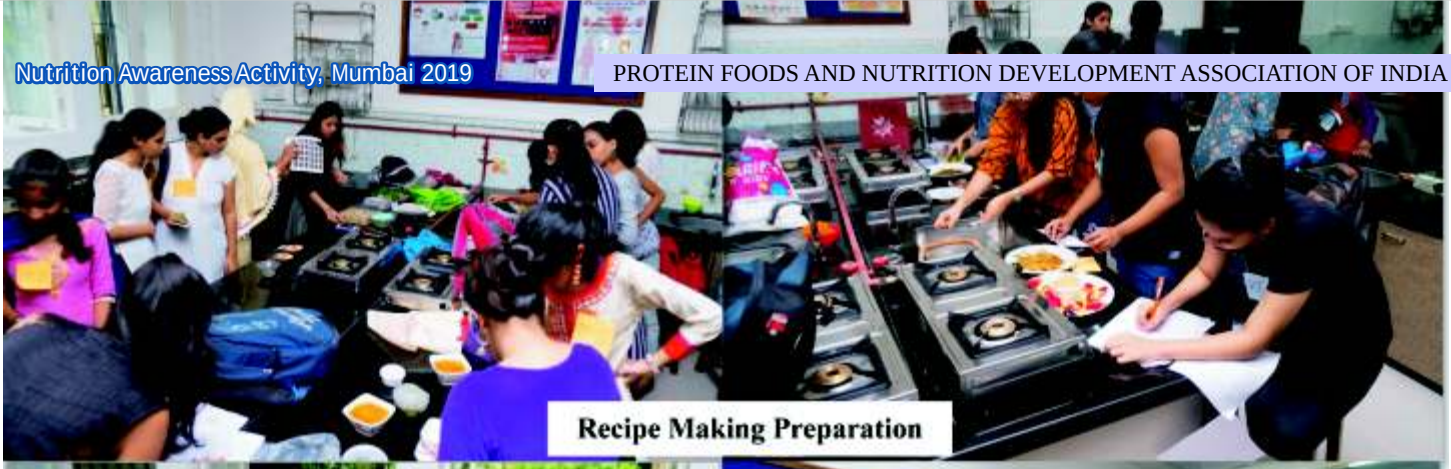

Recipe Making Preparation

Poster Making Preparation

Ms Ruby & Ms Sukhada evaluating the Recipes

Ms Shilpa & Dr Ashlesha judging the Recipes

Ms. Gauri Iyer evaluating the Posters

Ms. Nadiya Merchant evaluating the Posters

Organizers, Judges & Some Speakers

Ms. Swechha Soni

Dr. Madhuri Nigudkar

Ms. Madhavi Trivedi & Ms. Nadiya Merchant with the winners

Dr. Rekha Battalwar

Ms. Meenal Shrivastava

NUTRITION AWARENESS ACTIVITY

Wednesday 4th September 2019 at Mount Carmel College Autonomous, Bengaluru

REPORT BY –
Ms Swechha Soni,
Nutritionist, PFNDAI

PFNDAI had organised a Nutrition Awareness Activity at Mount Carmel College, Autonomous in collaboration with their Department of Nutrition and Dietetics.

The total participation of students and professionals was about 250. Total five colleges from Bangalore had participated. The theme of the Activity was Nutrition Security: Wholesome Food- A challenge. The Sponsors of the event were MARICO, HERBALIFE NUTRITION, and AMWAY. Recipe competition was supported by Herbalife Nutrition by providing ingredient mix for the competition.

The morning session started with the intercollegiate competitions among students. Students from five different colleges participated in the different competitions.

Three competitions were organized: Recipe Presentation, Digital Poster Presentation and Quiz Competition. There was huge participation in all the competitions. For the recipe competition the theme was Think Healthy, Eat Healthy for which the following samples were provided to the participants:
1. Herbalife Nutrition's Personalized Protein Powder
2. Herbalife Nutrition's Active Fiber Complex

There were total 39 teams each having two participants for the recipe competition. Each team had prepared 2 recipes: one savoury dish with addition of the provided Fiber powder and one dessert with addition of the provided Protein powder. The Judges: Dr. Sandhya Singh, President- IDA Bangalore and Ms. Rinka Banerjee, Founder & Director at Thinking Forks Consulting took efforts in going through all the recipes, tasting them and evaluating to find the best three recipes. There was a tie for the 3rd place in two teams so both the teams were awarded.

First Prize was won by the participants from Mount Carmel College
1. Samreen Shrieff
2. Nausheera Bushra

Second Prize was won by the participants from Mount Carmel College
1. Navya Raj
2. Simran Khanam

Third Prize was won by the participants of:
Ramiah University of Applied Sciences
1. Samyuktha Alwar
2. Subodh

Mount Carmel College
1. P. Soujanya
2. Khushi Thakurel

From L- Dr. Sandhya Singh, Ms. Amritha Devnani, Ms. Jyoti Bhat

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From L- Mr. Abhinav Srivastava & Mr. Sachin Achintalwar

The Digital Poster Presentation had 16 teams having two participants each. Students were asked to share a digital poster in ppt or pdf format. They were asked to make the poster based on the theme of Nutrition Security- Think Healthy, Eat Healthy and explain its significance which was evaluated by the Judge Ms. Amritha Devnani, Assistant R&D Manager- Nutrition & Health, Hindustan Unilever, India.

First prize: Aishwarya Deepika- Mount Carmel College

Second price- Shifa Fathima- Mount Carmel College

Third prize- Safiya Arfain K- Smt. V.H.D. Central Institute of Home Science

For the Quiz there were in total 16 teams having three participants each. There were multiple elimination rounds that took place for selecting six teams for the final round of quiz. Three teams with the highest scores were awarded the prizes.

First Prize was won by participants from Mount Carmel College
1. Humaira Khan
2. Sana Afreen
3. FaizaTabassum

Second Prize was won by participants from Mount Carmel College
1. Mariyam Maas Habeeb
2. Ekshetha Gowda
3. Vishrutha Thulasiram

Third Prize won by participants from Mount Carmel College

1. Pragna Swaroop
2. Sannuti Jagadeesha
3. Parshwi K. Doshi

All the judges for the three competitions were highly appreciative of the efforts made by the all the participants.

TECHNICAL SESSION

In the afternoon, the seminar was inaugurated by the lightening of the lamp. Dr. Sangeeta Pandey, HOD, Dept. of Nutrition and Dietetics, Mount Carmel College gave an inaugural address to the audience by highlighting the significance of the Nutrition month of September which is to be celebrated as “Rashtriya Poshan Maah”.

Mr. Sachin Achintalwar, AFST President- Bangalore delivered a talk on behalf of Marico on Plant Based Diets: Solutions for Climate Change & Nutrition Security. He gave a clarity of plant based foods that are comprised of mostly plant foods and does not mean vegetarian or vegan. He mentioned the benefits of consuming plant based diets in decreasing the risk of many chronic diseases. He also talked about the trending plant based meat and various technological aspects behind it. He talked about the scope of plant based meat in the coming years. He concluded by sharing the recent trends regarding the plant based meat and giving an insight of Indian acceptance of the same.

Mr. Abhinav Shrivastava, Head of Regulatory Policy, Amway presented a talk on Importance of Supplementation & possible Economic Impact. He explained how Indians live a longer life but with poor health. He mentioned that the life Expectancy is increasing worldwide but with a decreased quality of Life, which may risk the life expectancy to go down. He also mentioned about the various possible reasons of not living a healthy life. He further added that Global warming is one of the causes for nutrient loss. He concluded by adding that there are solutions available such as targeted food supplements that could reduce the health risks and health care costs in consumers.


Hosts for the Quiz


Audience

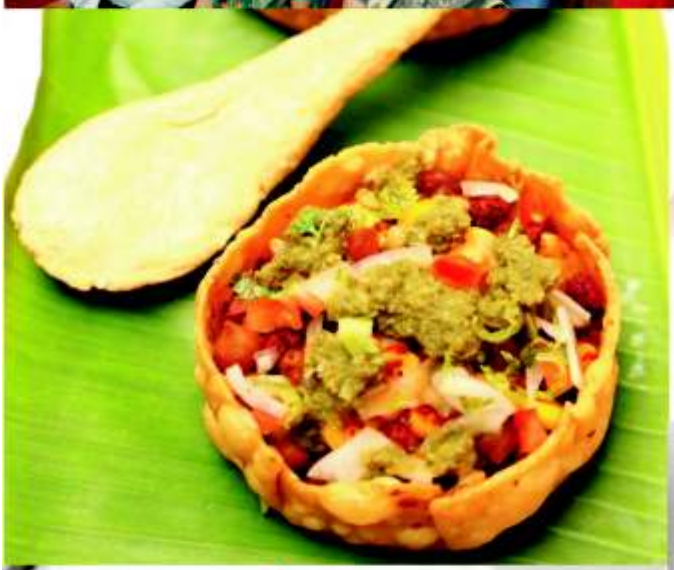
Ms. Jyoti Bhat, Director, Product Innovation, Herbalife Nutrition, India presented a talk on Driving Health & Wellness: Time to upshift on optimum nutrition and physical activity. She firstly mentioned about the very critical universal issue of malnutrition. She also mentioned about the higher risk of the non-communicable diseases in Indians giving some relevant data and the Key behavioural risk factors include unhealthy diet and lack of physical activity. She stated that the need for dealing with such a situation is information accessibility and effective implementation by bring in the advanced science and focusing on the quality.

Dr. Bhavna Sharma, Head-Nutrition Science Department, Foods Division, ITC Limited talked on Food Fortification and Nutrient Bioavailability: future measures for ensuring Food Security in Indians. She defined food security and its dimensions that are availability of food, accessibility of food and affordability of food. She shared world data as 100 people considering various dimensions such as literacy, poverty, housing, college degree, nutrition, etc. She also shared a date of undernutrition in men, women and children which indicates 45% of child deaths are linked to undernutrition. She listed some of the major challenges behind micronutrient deficiencies to which the two probable solutions would be food fortification and bioavailability and talked about various governments' initiatives and programs.

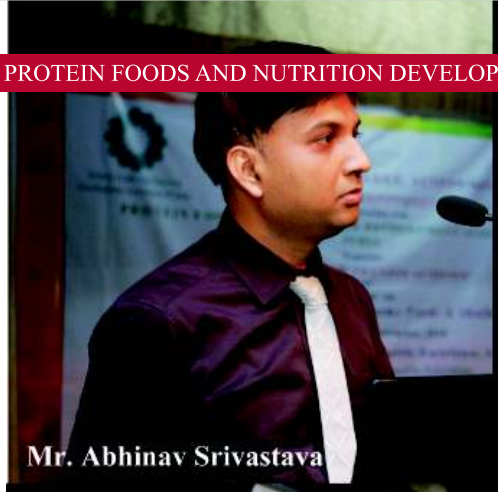
The seminar was followed by prize distribution to the winners of all the three competitions. The speakers and the judges were awarded by a Token of appreciation by PFNDAI and the college. The program ended with the vote of thanks to the Sponsors, Speakers, Judges, Organizers, participants and the audience.

We would like to thank our Sponsors: MARICO, HERBALIFE NUTRITION, and AMWAY for extending their support towards this activity.

Organizing Team from the College



Some Recipes from the Recipe Competition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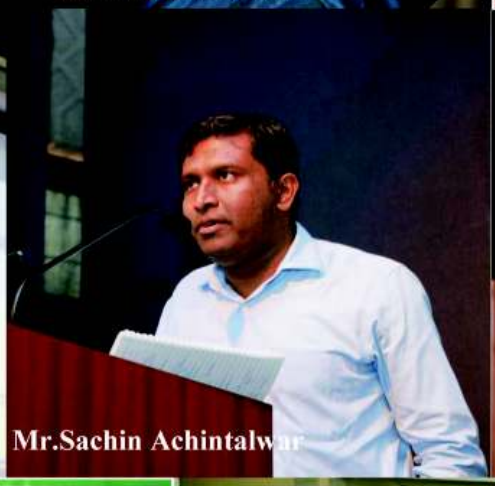
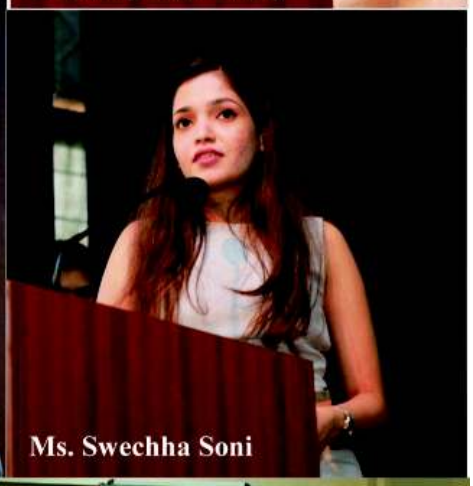

Mr.Sachin Achintalwar


Ms. Swechha Soni

Ms.Amritha Devnani & Dr.Sandhya Singh awarding a winner


Organizers and Judges


Organizers, Speakers & Judges


Dr. Sangeeta Pandey & Ms. Swechha Soni with some of the winners

ORGANIC FOODS- THE INDUSTRY INFLUENCED BY CONSUMER DEMAND

AUTHOR –
Ms Swechha Soni,
Nutritionist, PFNDAI
E: nutritionist@pfndai.org

The Indian Industry has been revolving around the word "organic" since last few years because of the popularity it has gained.

The term "organic" refers to the process of how certain foods are produced. Organic foods have been grown or farmed without the use of artificial chemicals, hormones, antibiotics or genetically modified organisms. In order to be labelled organic, a food product must be free of artificial food additives. This includes artificial sweeteners, preservatives, colouring agents, flavouring agents and monosodium glutamate (MSG).

Organically grown crops tend to use natural fertilizers like manure to improve plant growth. Organic farming tends to improve soil quality and the conservation of groundwater. It also reduces pollution and may be better for the environment. Organic farming features practices that cycle resources, promote ecological balance, and conserve biodiversity.

The most commonly purchased organic foods are fruits, vegetables, grains, dairy products and meat. Nowadays there are also many processed organic products available, such as sodas, cookies and breakfast cereals.

The Trend...

The organic food trend did not suddenly appear in Indian industry. India has seen a gradual growth in terms of production of organic food and its acceptance among consumers. The statistical indicators show that India is emerging as one of the leading producers of organic agriculture produces.

The Indian food Industry is guided by the needs and demands of the consumers. Today's consumers are aware of recent trends in food market and the safety of food. Their purchase depends more on their lifestyle and health-consciousness. Moreover, their increased spending ability enables industry to produce and market more expensive healthcare food products. This enables industry to manufacture and market organic foods in India.

Additionally, the Indian government is promoting organic farming by financial support to farmers who adopt organic farming under schemes like Mission for Integrated Development of Horticulture (MIDH), National Food Security Mission (NFSM), National Mission for Sustainable Agriculture (NMSA), National Programme for Organic Production (NPOP) etc.

Statistics say...

India ranks third in wild harvest area and also houses the highest number of organic producers globally with 835,000 organic farmers. It also ranks ninth in terms of area under organic cultivation with 1.49 million ha. It already exported 1.35 million MT of certified organic food products worth INR 1,937 crores in 2015-16.

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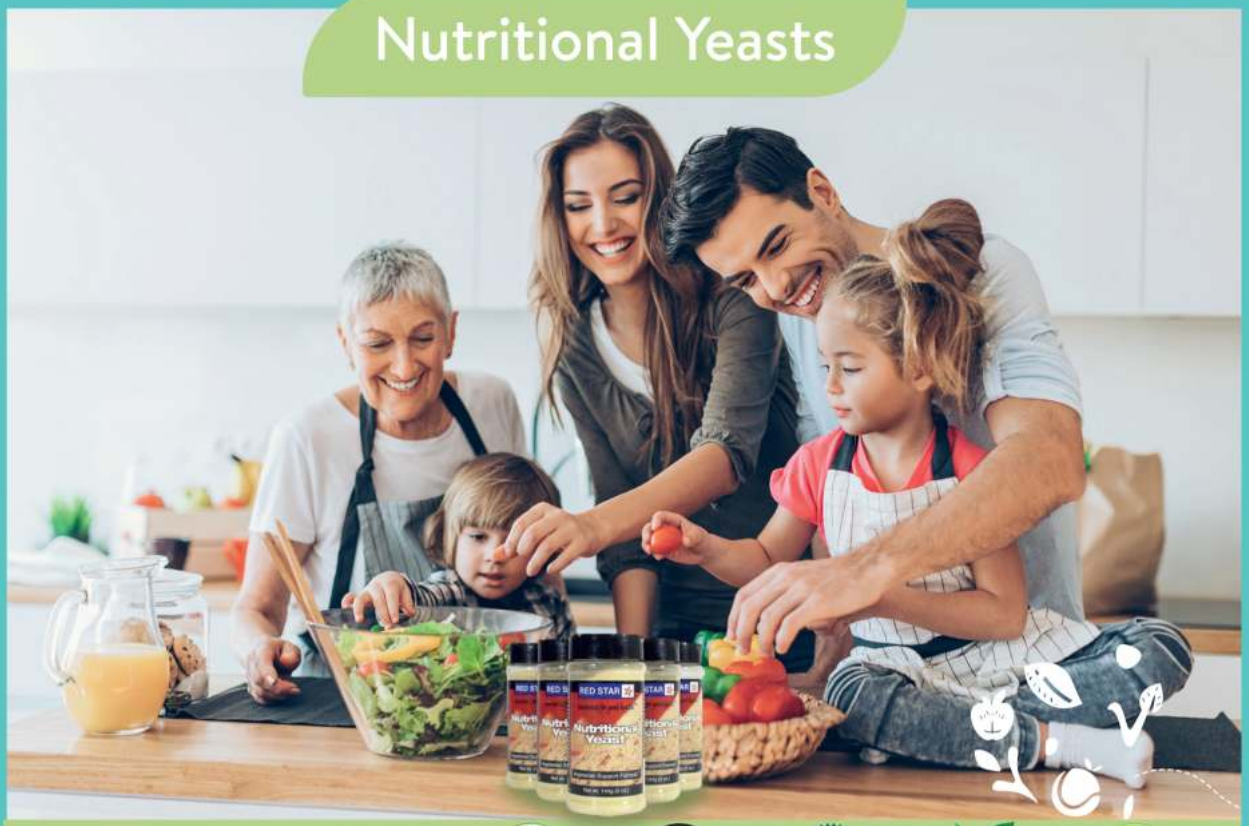

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India produced around 1.70 million MT (2017-18) of certified organic products which includes all varieties of food products namely Oil Seeds, Sugar cane, Cereals & Millets, Cotton, Pulses, Medicinal Plants, Tea, Fruits, Spices, Dry Fruits, Vegetables, Coffee etc.

The production is not limited to the edible sector but also produces organic cotton fiber, functional food products etc. (APEDA). According to an Agribusiness report it exported organic food products worth $515 million in 2017-18.Therefore, looking at the statistics, it could be said that India occupies a robust position in producing organic products.

The Indian organic food market reached a value of US$ 704 Million in 2018 and is projected to grow at a compound annual growth rate (CAGR) of over 23% by 2023, based on the schemes of the government favoring organic farming with additional advantage of rising land area under organic cultivation (IMARC)

Indian Organic Food Industry: How far has it come?

The Indian Food Industry is already producing and marketing Organic products like Beverages, Cereal & Food Grains, Meat, Poultry, Dairy, Spices, Pulses, Processed Food, Fruits & Vegetables and Others. Over the years it has come a long way. This could be pointed with the example of the State Sikkim which has totally adopted Organic farming in the year 2003 and is now the first organic state not only in India but globally.

The Rise in Demand for Organic Foods

There is a great rise in awareness of organic farming methods, making the food more healthy and nutritious.There are various factors that can lead to further expansion of the organic industry in India. First is the presence of favourable agro-climatic conditions and existence of various agro-economic zones in the country.

Besides, organic farming improves the quality of the soil where intensive agriculture and excessive use of chemical fertilizer has been persistent, hence further encouraging the farmers to opt for organic farming. Other factors like the rise in per capita purchasing power and increase in awareness regarding the social, environmental and health benefits of organic products, has also led to an ever increasing demand for these products.

Nutritional Benefits

Reviews of multiple studies show that organic varieties do provide significantly greater levels of vitamin C, iron, magnesium, and phosphorus than non-organic varieties of the same foods. While being higher in these nutrients, they are also significantly lower in nitrates and pesticide residues. In addition, with the exception of wheat, oats, and wine, organic foods typically provide greater levels of a number of important antioxidant phytochemicals (anthocyanins, flavonoids, and carotenoids).

Although in vitro studies of organic fruits and vegetables consistently demonstrate that organic foods have greater antioxidant activity, are more potent suppressors of the mutagenic action of toxic compounds, and inhibit the proliferation of certain cancer cell lines, in vivo studies of antioxidant activity in humans have failed to demonstrate additional benefit. Clear health benefits from consuming organic dairy products have been demonstrated in regard to allergic dermatitis.

Organic Certification

This is a quality assurance initiative, intended to prevent fraud and promote commerce, based on standards and ethics. The organic certification process in India follows guiding principles by National Program for Organic Production (NPOP) and the process is carried out by accredited bodies.

Farmers can submit application to any accredited certification body which provides standards and operational documents to the farmer. Both then sign an agreement of roles and commitments by each party. Auditing and regular field inspections are conducted. After verification final certification is given.

Scope of Organic Food in Indian Industry

Increasing demand: ASSOCHAM states that, metropolitan cities have witnessed a 95% increase in five years. This shows an increasing trend in the organic food. awareness and promote organic foods.


Image © iStock.com/PeopleImages

Increased online visibility: Many organic food companies spend money for visibility through online portals. Companies also adopt online marketing as product stores are limited to metro cities and unable to reach interiors.

Budding Organic Entrepreneurs: Health and lifestyle diseases becoming prominent, many entrepreneurs are venturing into organic cafes and restaurants. Along with concept themed outlet, many also offer free consultancy services for spreading

Amplified Shelf Space: Health conscious consumers are now specifically looking for organic sections in retail stores for grabbing their hands on it. This has led to an increase of their retail shelf space.

Introduction of new product categories: The industry is aware of lifestyle changes and that such people may prefer ready-to-eat organic products. Therefore, besides offering many whole organic products they offer convenient ready-to-eat snacks.

What are the issues?

In spite of many developments, some issues related to organic foods exist. Most of the companies manufacturing organic foods have witnessed farmers unwilling to adopt organic farming due to risk of lower yields. It was noted by some of the organic manufacturing companies that initial period of conversion of land from conventional to organic, resulted lower yield. It takes about 3-5 years to get back the yield and sometimes longer.

Organic food companies have shown inconsistency in quality of products procured from different farmers. Also, since farm sizes are small in India, there is the possibility of contamination. The organic farming and conventional farming may be practiced in adjacent fields where pesticides sprayed on the conventional farm can spread into organic farm via, wind, seep water and other modes. This may contaminate the organic farm resulting in the failure in testing. Thus the farmer suffers and bear the losses, there being no fault of his.

Consumer Perception towards Organic Foods:

The market of organic products is growing as the number of people willing to eat organic food and attitude towards organic food products is increasing. It has been observed that the organic foods have been making its way in the average Indian household slowly but steadily. AC Nielsen, a leading market research firm, surveyed about 21,000 regular Internet users in 38 countries to find their preference for functional foods - foods that have additional health benefits. The survey revealed that India was among the top ten countries where health food, including organic food, was demanded by the consumers.

The most important reason for buying organic food was the concern for the health of children, with over 66 percent parents preferring organic food to non-organic food. Though organic food is priced over 25 percent more than conventional food in India, many parents are willing to pay this higher premium due to the perceived health benefits of organic food. The increase in organic food consumption in India is evident from the fact that many organic food stores are spurring up in India.

Today, almost every supermarket has an organic food store and every large city in India has numerous organic food stores and restaurants. However, the Indian organic food consumer needs education. There are many consumers who are unaware of the difference between Natural and Organic food. Many people purchase products labelled as Natural thinking that they are Organic.

Some studies have found that consumers purchase organic products because of a perception that such products are safer, healthier and more environment friendly than conventionally produced alternatives. Another study found that product characteristics i.e., nutritive value, taste, freshness, appearance and other sensory characteristics influence consumer preferences for organic food products. A study also found that consumers buy organic food because they give more priority to health as well as they want to be part of social welfare organization.


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Factors influencing purchase decision towards organic food:

• Gender

Women were identified to have higher health consciousness and were seen as innovators for changed diet. Even though, the younger consumers show more interest and positive attitudes towards organic food but the older consumers are the main purchasers. The family eating habits are changing dramatically as it has been seen new parents tend to buy more organic baby food. Moreover, parents tend to take huge interest in organic food when they buy it for their family or with the arrival of a baby.

• Education

Strong correlations between increasing consumption of organic food with levels of formal education were seen in research. Income and education have been mixed to classify organic food purchasers.

• Income level

Regular consumers of organic food tend to be of higher social class, af?uent and educated. In developing countries the younger and wealthier individuals are more attracted towards organic food compared to others. Due to the premium pricing organic foods are accessible to the middle classes and onwards.

To Conclude:

Though organic foods are gaining a lot of importance in the Indian food Industry as well as among the consumers, high prices are holding back widespread adoption, as the rural population and low income groups cannot afford such expensive products. However, there have been many efforts from organic food producers to bridge the price gap between organic and conventional products.

As demand for organic food rises, increase in production and economies of scale would result in reduced cost of production, further driving growth in Indian organic food market in the coming years (TechSci Research). Moreover, the vigorous Government initiatives for improving farming activities among the organic farmers would contribute equally in the future of the Indian Organic Food Industry.

Also, consumers are becoming very much Health conscious and are looking for foods that are free from chemicals and are demanding for foods that are organically grown. In short, the more the demand of the consumers for organic foods, the more will be the positive influence on the Organic Food Industry.

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REPORT OF NUTRITION AWARENESS ACTIVITY

held in Kherwadi Municipal School in collaboration with ASEEMA CHARITABLE TRUST

AUTHOR –
By Ms Swechha Soni,
Nutritionist, PFNDAI

Protein Foods and Nutrition Development Association of India in collaboration with Aseema Charitable Trust organized a School Nutrition Awareness Program at the Kherwadi Municipal School, Bandra.

The program was organized on Tuesday 17th September 2019 and was of a short duration of 2 hours from 1.15pm to 3.15pm. The program was organized for the students of 7th standard. The total number of students participated were around eighty.

Nutrition Awareness Activity included following activities:
1. Poster making competition of students
2. Expertise talk
3. Distribution of snacks and Prize distribution

Poster making competition:
Activity was initiated with poster competition for the students. There were two divisions of standard 7th having 40 students in each division. All the students assembled in their respective classes for the poster making competition. They were provided with oil pastel colors and the other stationaries required for poster making. Students were given one hour for making posters.

Topics for poster making competition were based on Health and hygiene. They were as follows:
1. Healthy eating habits
2. Personal Cleanliness and hygiene
3. Safe and nutritious food

Students had to select one topic out of three and make poster accordingly. Followed by the competition was an interactive session between the students and a nutrition expert.

Expertise Talk-
Dietitian, Ms. Shilpa Joshi- National Vice President, Indian Dietetic Association was invited to deliver talk on Nutrition and Hygiene. She spoke on this year's nutrition theme- Eat Right announced by Prime Minister of India. She explained about food groups, healthy foods, food sources of different nutrients and personal hygiene with all the students. Students were also quite engaged and were prompting answers to all the questionsthat were asked. She kept the entire session very interactive and crisp. Students were very enthusiastic and overall the response for session was very productive.

Dr. Jagadish Pai, Executive Director, PFNDAI interacted with the students about the related topic and tried to keep up the engagement of students by asking up about their future interests.

Post this was the prize distribution. The posters of the Students were judged by Ms. Swechha Soni, Nutritionist, PFNDAI and Ms. Anuja Rawool, Food Scientist, PFNDAI. 3 winners were selected from each class. Total six winners from both the classes were selected based on their understanding of the topic, their ideas and the creativity. The winners were awarded with the prizes and the certificates. All the participants were also given the participating certificates along with a document folder.

Children thoroughly enjoyed the entire event. Activities like these help create awareness amongst students.

Ms Swechha Soni, Ms Kasturi, Ms Sajida, Ms Shilpa Joshi, Ms Sana, Mr Peter, Ms Sapna, Dr JS Pai, Mr Santosh Panigrahi

Poster Competition

Dr. Pai interacting with students

Ms. Shilpa Joshi interacting with students

Ms Kasturi Deorukhkar, Ms Anuja Rawool, Ms Swechha Soni and Ms Sajida

Dr. Pai awarding one of the winners

Mr Peter, Ms Sapna-Ms Sana-Ms Sajida

Ms. Shilpa Joshi interacting with students

REGULATORY ROUND UP

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

Dear Readers

Final notification of Labelling and Display regulation is awaited with bated breath. The regulation is likely to cause consider upheaval among the food business operators like reformulating, changing labels, etc. We understand the draft regulation on Processing Aid has been cleared and should be notified soon.

In the meanwhile, please find below notifications, orders and notices published by FSSAI since the last round up. See you in 2020.

Latest list of FSSAI approved testing laboratories.

FSSAI central authority, in its letter dated 22 November 2019, has requested the licensing authorities not to seek documents which are not mandated in the regulation. For example, many applicants are asked for proof of in- house laboratory, etc. which is not mandatory and considerably delays the licensing process. Hope this advisory would speed up the licensing process.

A very important direction from FSSAI deleting the requirement of minimum total soluble solids in Thermally Processed Nectar (2.3.9), Thermally Processed Fruit Beverage/Drink/Ready to Serve Fruit Beverage (2.3.10) and Carbonated Fruit Beverage or Fruit drinks (2.3.30) of FSS (Food Products Standards and Food Additives) Regulation, 2011. This will pave the way for developing these products with "low sugar" claim which hitherto was not possible due to minimum total soluble requirement. This regulation is in line with the overall objective of FSSAI to reduce Sugar, Salt and Fat in foods.

FSSAI has now recognized that many contaminants like antibiotics, hormones could enter human food chain through animal food and in turn animal feed and feed ingredients. To plug this leakage and in absence of any regulations, FSSAI has decided to make BIS standards mandatory as an immediate measure. It goes on to state that all manufacturers and importers of feed and feed ingredients meant for food producing animals must obtain BIS certification and within 6 months. BIS certification is an involved process, requires establishing laboratory, carrying out certain mandatory tests at stipulated frequency. This is likely to be a challenge for small scale feed, feed supplement and feed ingredient manufacturers. It is not clear whether feed includes aqua feed. Wonder if BIS, already burdened with mandatory certification of packaged drinking water, infant formulae, milk powders, etc, can take on this additional product certifications.

The minutes of the meeting between FSSAI, E commerce food business operators and e commerce platform providers are as follows.

- E commerce food business operators and E commerce platform providers must possess valid FSSAI license
- E commerce platform providers must ensure that FBOs selling their products through the portals must ensure that they have valid license and the license numbers are displayed on the website
- In the meeting FSSAI reiterated the requirement of maintaining minimum 30 % or 45 days of shelf life at the time of delivery to the consumer.

Final notification amending the standards of Chhana/Paneer and also introducing new standards for medium fat Chhana/Paneer, Whey cheese and Cheese in brine. The regulation also amends the standard for goat and sheep milk (making it uniform for all India) and total sodium content in milk powders.

Final notification introducing standards for decaffeinated ground and roasted coffee, decaffeinated soluble coffee powder. The regulation also amends the upper limits of Calcium and Magnesium in packaged drinking water.

FSSAI vide its order prohibits E commerce business operators and E commerce platforms from selling alcoholic beverages on line.

FSSAI has issued a guideline on sampling process in case of fortified salt.

FSSAI vide its letter dated 27 November 2019 that importers of packaged drinking water shall do so only from BIS certified manufacturing units. The product shall be labelled as per Packaging and Labelling regulation. Fancy names and abbreviations are not permitted and must comply with Claim and Advertisement regulation.

RESEARCH IN HEALTH & NUTRITION

Discovered new regulation for infant growth

Science Daily October 1, 2019

Researchers have identified new genetic signals for the regulation of how infants grow. This may be a crucial step in the fight against growth-related diseases.

"A better understanding of the biology of infant growth is important as growth-related diseases such as obesity and malnutrition are global societal challenges," says Professor Pål Rasmus Njølstad, Department of Clinical Science, University of Bergen (UiB) who directed the study.

Different BMI-signals for children and adults

It has been assumed that there are more or less the same genes that control BMI development in children and adults."We have now found that such genetic signals actually exist, but that the most important are nevertheless different between children and adults and that they vary considerably during childhood," Njølstad says. The study is the first large-scale genetics study to investigate age-dependent effects in continuous BMI measurements from birth to eight years. It is also the first large-scale genetics study conducted in the Norwegian Mother, Father, and Children Cohort Study (MoBa), which includes 114,000 children and their parents.

Potential target for drug intervention

The study shows a previously unknown and dynamic role of common genetic variants in genes involved in the leptin signaling pathway that affect BMI during fetal, newborn, and infant growth says professor Stefan Johansson who co-led the study. Leptin is a hormone predominantly made by the adipose tissue regulating the energy balance by reducing appetite, which in turn diminishes fat storage in adipocytes. "The study suggests that increased levels of leptin's binding partner, the leptin receptor, in infants have a positive effect on weight gain without being linked to overweight in adults. This finding provides a potential target for drug intervention to increase weight in infants who need it," says Pål Rasmus Njølstad.

Facts: Novel Tools for Early Childhood Predisposition to Obesity and Diabetes, the SELECTionPREDISPOSED Study

• The study´s main objectives are to find novel obesity and diabetes susceptibility genes, to uncover genes involved in the regulation of birth weight and childhood growth, to identify new mechanisms for regulation of growth, development of obesity and diabetes, and to

identify the genetic cause of congenital growth-related malformations.

• The study was conducted in collaboration with researchers at the Norwegian Institute of Public Health, the Norwegian University of Science and Technology, and the University of Gothenburg.

• It has been supported by, among others:. European Research Council ERC, University of Bergen, Bergen Research Foundation, Foundation Kristian Gerhard Jebsen, Research Council of Norway, Health West, Novo Nordisk Foundation, and the Norwegian Diabetes Association.

Touting flavor before nutrition encourages healthy eating

Science Daily October 2, 2019

Most people want to eat healthier, but efforts to encourage healthy eating by providing nutrition information have not drastically changed habits.

A new study suggests that labels emphasizing taste and positive experience could help. Evocative labels such as "twisted citrus glazed carrots" and "ultimate chargrilled asparagus" can get people to choose and consume more vegetables than they otherwise would -- as long as the food is prepared flavorfully, researchers at Stanford University have found. Their findings appear in Psychological Science, a journal of the Association for Psychological Science.

"This is radically different from our current cultural approach to healthy eating which, by focusing on health to the neglect of taste, inadvertently instills the mindset that healthy eating is tasteless and depriving," said Alia Crum, an assistant professor of psychology and the senior author on the new paper. "And yet in retrospect it's like, of course, why haven't we been focusing on making healthy foods more delicious and indulgent all along?"

About three years ago, Crum, Brad Turnwald and graduate student Danielle Boles partnered with Stanford Residential & Dining Enterprises to try out a new approach to encourage healthy eating. Culling adjectives from language that popular restaurants used to describe less healthy foods, they came up with a system for naming vegetables that focused on the flavors in vegetable dishes along with words that created the expectation of a positive eating experience -- hence "twisted citrus glazed carrots." That study, published in 2017, showed that decadent-sounding labels could get people to eat vegetables more often than they would if the vegetables had neutral or health-focused names.

Crum, Turnwald and colleagues have now extended those findings by repeating the experiment at additional university dining halls around the United States. In collaboration with the Menus of Change University Research Collaborative -- a nationwide network of 57 colleges and universities pioneering research to improve healthy and sustainable eating -- the team tracked nearly 140,000 decisions about 71 vegetable dishes that had been labeled with taste-focused, health-focused or neutral names.

They found that diners put vegetables on their plates 29 percent more often when the food had taste-focused versus health-focused names and 14 percent more often when it had taste-focused versus neutral names. Diners also ate 39 percent more vegetables by weight, according to measurements of what they served themselves versus how much ended up in compost.The team found that giving vegetables taste-focused names only worked when those dishes were indeed delicious. At one school where diners thought the vegetable dishes in general weren't as tasty, labeling them using tasty descriptors had little impact.

Taste-focused labeling works, Crum said, because it increases the expectation of a positive taste experience. In particular, references to ingredients such as "garlic" or "ginger," preparation methods such as "roasted," and words that highlight experience such as "sizzling" or "tavern style" help convey the dish is not only tasty but also indulgent, comforting or nostalgic. For example, "twisted citrus glazed carrots" works because it highlights the flavor, while "absolutely awesome zucchini" fails because it is too vague.

The study is part of a broader project to make healthy foods more crave-worthy and less like something we tolerate because they're good for us. That effort also includes Stanford SPARQ's "Edgy Veggies" toolkit, a step-by step guide for how to implement taste-focused labeling that draws on Crum and Turnwald's studies.

In the long run, Crum, Turnwald and colleagues believe, the combination of research and tools that enable real-world change could have a broad impact on eating habits."College students have among the lowest vegetable intake rates of all age groups," Turnwald said.

"Students are learning to make food decisions for the first time in the midst of new stresses, environments and food options. It's a critical window for establishing positive relationships with healthy eating."

Seafood consumption during pregnancy may improve attention capacity in children

Science Daily October 2, 2019

A team of scientists from the Barcelona Institute for Global Health (ISGlobal), a centre supported by "la Caixa," has studied the relationship between the consumption of various types of seafood during pregnancy and attention capacity in children at eight years of age. The results, published in the International Journal of Epidemiology, show that eating a seafood-rich diet during early pregnancy is associated with better attention outcomes in children.

The study included 1,641 mother-child pairs from the INMA Environment and Childhood Project, a Spanish cohort study on the role of pollutants during pregnancy and their effects on children. Over the course of their pregnancies, the mothers completed numerous food-frequency questionnaires that assessed how often they ate more than a hundred different food items, including various types of seafood. Data on the children's dietary habits were also collected using the same questionnaire at one, five and eight years of age. At eight years of age, the children also completed the Attention Network Task (ANT), a computer-based neuropsychological test designed to assess attention function. The main ANT outcomes assessed by the researchers were the number of omission errors committed in relation to target stimuli and the speed of responses to stimuli. Both outcomes are commonly used as indicators of selective and sustained attention.

Image © iStock.com/milanfoto

The study builds on earlier research that analysed children at five years of age. "The consumption of seafood during the first trimester of pregnancy had a greater effect on children's attention capacity than the consumption of seafood later in pregnancy or at five years of age, by which time some neurodevelopment processes have already been completed," commented Jordi Júlvez, researcher in the Childhood & Environment programme at ISGlobal and lead author of the study.

Brain development takes place mainly during pregnancy, through complex biological processes such as neuron formation, synaptogenesis and myelination. Essential nutrients such as polyunsaturated fatty acids (PUFAs) play a fundamental role in these processes. "Docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) are the main omega-3 PUFAs involved in neurological development, and seafood is the main source of both of them," added Júlvez.

Because these nutrients participate in the definition of foetal brain structure and function, they have a large impact on later neuropsychological development. Attention is a complex behaviour that all children must learn, since it precedes other crucial functions such as memory. "We focused on the attention function because attention-deficit hyperactivity disorder is common in school-age children," commented Jordi Sunyer, head of the Childhood & Environment programme at ISGlobal.

The study also assessed the differences between various types of fish and seafood: fatty fish, lean fish, canned tuna and shellfish. Children whose mothers ate a diet rich in various types of seafood scored very well on the attention tests, as did children of women with a diet rich only in fatty fish. However, scores were lower in children whose mothers relied on canned tuna or shellfish for their seafood intake.

The role of genetics in PUFA metabolism was one of the elements analysed in the study. "We observed differences in the effect of seafood on children's attention capacity as a function of genetic variations known as single nucleotide polymorphisms (SNPs)," commented Júlvez. The findings suggest that some SNPs facilitate PUFA metabolism, thereby contributing to better attention outcomes, while others have a negative effect on PUFA metabolism. Seafood consumption was shown to have a compensatory effect in children with SNPs that hinder PUFA metabolism. "Children with, for example, the rs1260326 CC genotype -- which has been associated with lower PUFA levels -- had worse attention scores if their mothers had not eaten much seafood during pregnancy," commented Júlvez. "But their outcomes improved if their mothers consumed more seafood."

Despite the promising results of this study, the authors of previous research have reported a link between the consumption of fish during pregnancy and childhood obesity and increased blood pressure. Consequently, experts insist on the need for more research on this subject to determine exactly which species of fish and what quantities may be beneficial to fetal development.

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FODMAPs diet relieves symptoms of inflammatory bowel disease

Science Daily October 3, 2019

New research from King's College London has found that a diet low in fermented carbohydrates has improved certain gut symptoms and improved health-related quality of life for sufferers of inflammatory bowel disease (IBD).

In a paper published today in Gastroenterology a team of researchers carried out a trial of a diet low in fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP) in patients with IBD, experiencing persistent gut symptoms despite gut inflammation being under control. They found that a four-week low FODMAP diet improved certain gut symptoms such as swelling of the stomach and flatulence compared to those on a placebo diet.

Working with leading gastroenterologists from Bart's Health NHS Trust and Guys and St Thomas' NHS Foundation Trust, the researchers studied 52 patients who suffer from IBD, and who had persistent gut symptoms despite no on-going gut inflammation, and allocated them to two groups; one to a low FODMAP diet, restricting intakes of foods such as wheat, dairy, onions and garlic, and the other a controlled 'normal' FODMAP diet. Of the group that received the low FODMAP diet 52% reported adequate relief of gut symptoms, had a greater reduction in gut symptom severity and had a higher health-related quality of life score.

Lead researcher Dr Selina Cox from King's College London, said:

"While we know that the low FODMAP diet is effective in patients with irritable bowel syndrome (IBS), this is the first randomised, trial showing that it's effective in reducing common gut symptoms. This improves health-related quality of life in patients with IBD when they are in remission."

Inflammatory bowel diseases include Crohn's disease and ulcerative colitis, both of which involve chronic inflammation of the digestive tract. At present, there is no cure for IBD, but symptoms are managed with a combination of anti-inflammatory and immune-modulating medication, and surgery. However, symptoms can persist during periods of disease remission even when they are receiving medication to control gut inflammation, and patients report these symptoms to have a large impact on their life.

The authors also found the low FODMAP diet reduces certain gut bacteria, such as Bifidobacteria, that may be beneficial to health and may reduce inflammation. Despite the changes in beneficial bacteria, gut inflammation did not appear to increase after the low FODMAP diet in patients with IBD.

"We carried out this randomised controlled trial to establish whether these common gut symptoms in patients with IBD in remission could be managed by the low FODMAP diet. Indeed, this could represent a safe and cost-effective management option." said Professor Kevin Whelan from King's College London.

The team now plan to study the effects of a longer-term low FODMAP diet and establish the effect of FODMAP reintroduction on gut symptoms and gut bacteria.

"In clinical practice, the low FODMAP diet is followed by a phase of gradual FODMAP reintroduction -- it is important to establish what the effects of FODMAP reintroduction are on the gut and whether reintroduction reverses the bacterial changes that were observed during the low FODMAP diet," added Dr Selina Cox.

Drinking more sugary beverages of any type may increase type 2 diabetes risk

Science Daily October 3, 2019

People who increase their consumption of sugary beverages -- whether they contain added or naturally occurring sugar -- may face moderately higher risk of type 2 diabetes, according to a new study from Harvard T.H. Chan School of Public Health.

Drinking more sugar-sweetened beverages (SSBs), like soft drinks, as well as 100% fruit juices, were associated with higher type 2 diabetes risk. The study also found that drinking more artificially sweetened beverages (ASBs) in place of sugary beverages did not appear to lessen diabetes risk. However, diabetes risk decreased when one daily serving of any type of sugary beverage was replaced with water, coffee, or tea.


Image © iStock.com/republica

It is the first study to look at whether long-term changes in SSB and ASB consumption are linked with type 2 diabetes risk.

The study will be published online October 3, 2019 in the journal Diabetes Care.

"The study provides further evidence demonstrating the health benefits associated with decreasing sugary beverage consumption and replacing these drinks with healthier alternatives like water, coffee, or tea," said lead author Jean-Philippe Drouin-Chartier, postdoctoral fellow in the Department of Nutrition.

The study looked at 22-26 years' worth of data from more than 192,000 men and women participating in three long-term studies -- the Nurses' Health Study, the Nurses' Health Study II, and the Health Professionals' Follow-up Study. Researchers calculated changes in participants' sugary beverage consumption over time from their responses to food frequency questionnaires administered every four years.

After adjusting for variables such as body mass index, other dietary changes, and lifestyle habits, the researchers found that increasing total sugary beverage intake -- including both SSBs and 100% fruit juice -- by more than 4 ounces per day over a four-year period was associated with 16% higher diabetes risk in the following four years. Increasing consumption of ASBs by more than 4 ounces per day over four years was linked with 18% higher diabetes risk, but the authors said the findings regarding ASBs should be interpreted with caution due to the possibility of reverse causation (individuals already at high risk for diabetes may switch from sugary beverages to diet drinks) and surveillance bias (high-risk individuals are more likely to be screened for diabetes and thus diagnosed more rapidly).

The study also found that replacing one daily serving of a sugary beverage with water, coffee, or tea -- but not with an ASB -- was linked with a 2-10% lower risk of diabetes."The study results are in line with current recommendations to replace sugary beverages with noncaloric beverages free of artificial sweeteners. Although fruit juices contain some nutrients, their consumption should be moderated," said Frank Hu, Fredrick J. Stare professor of nutrition and epidemiology and senior author of the study.

Probiotic may benefit children with GI symptoms, respiratory infections

IFT Weekly October 1, 2019

A study published in Food Research International suggests that spore-forming probiotic may have a beneficial effect on gastrointestinal symptoms (GI) and upper respiratory tract infection symptoms (URTI) in children.

The researchers gave 80 healthy school-aged children in Mexico a flavored water containing either Bacillus coagulans GBI-30, 6086 (1 billion CFU GanedenBC30) or a placebo, daily for 12 weeks. This randomized, double-blind, placebo-controlled study found that supplementation with GanedenBC30 significantly reduced the incidence of flatulence and suggested a positive effect on stool consistency. It also found that the probiotic significantly decreased the incidence of URTI symptoms, including nasal congestion, bloody nasal mucus, itchy nose, and hoarseness, and the duration of hoarseness, headache, red eyes, and fatigue.

The study data reported that GanedenBC30 may have the ability to modulate the immune response, based on beneficial effects on URTI and GI symptoms. The researchers concluded that the “study contributes in the biomedical and clinical research with scientific information that supports the beneficial effects of probiotics in the prevention and treatment of immune-related acute infections. Further studies could aim the evaluation of the effect of GanedenBC30 on other immune-related infections or metabolic disease to explore their impact in human health.”


Image © iStock.com/Povareshka

Converting sugar to GOS fiber: DuPont brings enzymes for lactose-free dairy to market

30 Oct 2019 Nutrition Insight

DuPont Nutrition & Biosciences is launching a new flagship dairy enzyme that facilitates a total sugar reduction of 35 percent or more.

This is while generating prebiotic dietary fiber in situ through the natural conversion of lactose.

Image © iStock.com/topthailand

Dubbed DuPont DaniscoNurica, the range for fermented dairy products is designed with major health trends in mind amid ongoing pressure for companies to reformulate their goods. Nurica will first be available for sale in Europe, Middle East, Africa and Latin America, with products using it expected to hit shelves in the next six months.

"More and more consumers are shifting to a healthier lifestyle and are becoming conscious of the amount of sugar in products, yet they are unwilling to give up taste or texture in their dairy products. Also, an increasing number of consumers are lactose-intolerant. Nurica addresses all of these consumer needs in one unique, enzymatic solution," ClementinaDellomonaco, Global Product Manager in Dairy Enzymes at DuPont, tells NutritionInsight.

During application trials, the product did not show a detectable impact on the acidification process, taste or texture. As a result, Nurica is touted as producing stable, high-quality fermented dairy products that are tailored to consumer health trends. Although any dairy application or product could benefit from the product, the current formulation is best suited for fresh fermented applications, according to Dellomonaco.

It can be challenging to develop enzymatic solutions that solve customer needs while fitting in tightly controlled industrial processes. The enzymes must meet optimal pH, temperature, reaction time and process flow parameters, as well as carrying out the desired function.

"Addressing all aspects of reformulating a dairy product with one enzyme addressing a broad set of consumer challenges was quite the challenge. We were able to design the right solution by combining our core expertise in enzyme development with our industry knowledge," explains Dellomonaco.

Image © iStock.com/ Dave_Pot

Using Nurica, manufacturers can fine-tune the sugar, fiber and lactose content of their dairy products to achieve multiple nutritional claims that benefit consumers who are either lactose intolerant or generally in search of healthier choices.

Tapping into health trends

While standard lactase breaks down the milk sugar lactose into its component parts of glucose and galactose, Nurica transforms galactose into GalactoOligoSaccharides (GOS). This is a prebiotic dietary fiber, which can ultimately deliver a reduction in milk sugar, with the amount being dependent on the lactose content in the matrix.

"GOS is the main fiber in infant formula and is known to stimulate beneficial Bifidobacteria in the gut. Research has also documented the contribution of GOS to increased mineral absorption and a sense of satiety. Inactivation of the enzyme via heat treatment ensures the stability of GOS in fermented dairy applications," adds Dellomonaco.

According to the company, no other dairy enzyme provides such a "well-aimed opportunity to tackle the widespread demand for lower sugar levels and higher fiber in the diet."

Moreover, according to a major review by the World Health Organization (WHO), average fiber consumption is still well below the recommended 25 g daily intake.

There is renewed interest in fiber as consumer interest remains strong. Several recent US Food and Drug Administration (FDA) success stories indicate that greater marketing efforts will go into an area that never seems to tire. Consumers are still mainly consuming fiber for digestive health, but newly discovered health benefits are driving applications too. Gut health is no longer a taboo topic and numerous innovators are thriving on gut feelings amid this market dynamic.

According to a 2018 consumer survey conducted by Innova Market Insights, 44 percent of US consumers are increasing their consumption of fiber, with 33 percent of UK consumers doing so. At the same time, 21 percent average annual growth has been reported in new product launches carrying a fiber claim. Newly discovered health benefits are driving fiber applications. When asked for reasons why they are consuming fiber, unsurprisingly, the majority of US consumers (64 percent) listed digestive health, but interestingly weight management (24 percent) and energy (16 percent) also featured.

Just last week, Cargill announced a US$35 million investment in Europe to add a line of soluble fibers that will enable up to a 30 percent sugar reduction. The company highlighted that fiber can provide a crucial tool to cutting sugar rates without altering sensory characteristics.

Industry is under more pressure than ever to reformulate in light of a growing number of government policies aiming to slash obesity rates. However, in contrast to the roaring success of the UK Soft Drink Industry Levy (SDIL), which saw sugar in soft drinks fall by 29 percent from 2015 to 2018, the British food industry is lagging far behind with an average reduction of just 2.9 percent.

By Katherine Durrell

Is salt "vicious" for cognitive function? Study finds high-salt diet impacts dementia risk in mice

24 Oct 2019 Nutrition Insight


Image © iStock.com/Sebalos

High levels of dietary salt may negatively impact cognitive function by causing a deficiency of the compound nitric oxide, which is vital for maintaining vascular health in the brain.

This is according to a new mice study published in Nature by Weill Cornell Medicine researchers. They established that the impaired cognitive function is not due to a loss in blood flow to the brain as originally thought, but rather to the formation of tau protein "clumps," which is linked to several forms of dementia in humans. The researchers suggest that avoiding excessive salt intake may help to stave off the vascular and neurodegenerative pathologies that underlie dementia in the elderly. "There is some epidemiological evidence suggesting that high salt diets are associated with cognitive impairment and that the incidence of dementia is higher in countries with high salt consumption," Dr. Costantino Iadecola, Director and Chair of the Feil Family Brain and Mind Research Institute at Weill Cornell Medicine, tells NutritionInsight.

Commenting on the study, Professor Graham MacGregor, Professor of Cardiovascular Medicine at Queen Mary University of London and Chair of Action on Salt, says, "This important study illustrates the potential mechanism whereby salt, which significantly increases our blood pressure, can directly increase the risk of dementia and be damaging to the brain. This adds to the ever-growing evidence that we should all reduce our salt intake. With the majority of our salt intakes coming from processed food made by the food industry, it is therefore their duty to remove it for the benefit of our health."

The detrimental impact salt can have on the human body is increasingly understood on both industry and policy levels. Recently, it has been brought to the discussion table that salt available via retailers and salt shakers in restaurants should both carry a front-of-pack, tobacco-style health warnings. Statement author Dr. Norm Campbell noted that unhealthy diets are a leading cause of death globally and excess salt consumption is the biggest culprit, estimated to cause over three million deaths globally in 2017.

"This result was completely unexpected," says Dr. Costantino Iadecola, Director and Chair of the Feil Family Brain and Mind Research Institute at Weill Cornell Medicine. "We knew that a high-salt diet produced dementia-like symptoms in mice, and we went in thinking the culprit would be reduced blood flow to the brain. It turned out that wasn't the case at all."

The researchers established a chain-reaction between a high-salt diet and affected cognitive function. High quantities of dietary salt resulted in a decreased production of nitric oxide in blood vessel cells in the brain. In turn, this restricts blood flow to the brain. The researchers initially assumed that restricted blood flow to the brain caused cognitive impairment in their mice subjects, but digging deeper, they found that there was a different explanation.

Nitric oxide makes up part of a molecular pathway connected to the tau protein. In the former's absence, the tau protein begins to clump together and creates aggregates. It is precisely these tau clumps that interfere with the proper function of brain cells, which can lead to cognitive impairment. Tau namely provides structure for the scaffolding of neurons. This scaffolding, also called the cytoskeleton, helps to transport materials and nutrients across neurons to support their function and health.

Studying their mice, the Cornell researchers observed that the mice with increased salt intakes could no longer perform daily tasks such as building their nests and had problems passing memory tests. To further explore the importance of tau in dementia, the researchers gave mice with a high-salt diet and restricted blood flow to the brain an antibody to promote tau stability. Despite restricted blood flow, researchers observed normal cognition in these mice. "This demonstrated that's what's causing the dementia was tau and not lack of blood flow," Dr. Iadecola affirms.

He encourages researchers to conduct more rigorous epidemiological studies investigating the link between salt and dementia, particularly studies exploring the link with Alzheimer's disease and Frontotemporal dementia. However, the current mouse study is a reminder for people to regulate salt consumption, he warns.

"The stuff that is bad for us doesn't come from a saltshaker; it comes from processed food and restaurant food. We've got to keep salt in check. It can alter the blood vessels of the brain and do so in a vicious way." He notes that the Mediterranean diet, low in salt, is considered the most effective diet to prevent cognitive impairment. However, once the dementia sets in, there is little that can be done at the moment.

War on salt

The war on salt wages on. In Scotland, food and drinks high in fat, sugar or salt (HFSS) have become an increasing consideration to the government, which is moving to become one of the first nations to propose restrictions to limit the promotion and marketing of HFSS food and drinks on a national scale.

Moreover, the publication of the European Food Safety Authority's dietary reference values has set a safe and adequate sodium intake at 2g per day. The body may need salt to function however, the study warns that sodium can cause a number of health risks when consumed in excess.

While in salt reduction efforts, critics have said that despite meat-alternatives benefiting from a health halo relating to various claims, including gluten-free, organic and vegan, they are often highly processed and packed with salt. Researchers are therefore on a quest to find salt alternatives without compensating savory taste. A white paper from Kerry Health & Nutrition Institute states that umami could be key in salt reformulation and clean label efforts, as well as in creating more appealing senior nutrition diets.

Skin-gut axis: Sun exposure influences gut bacteria by boosting vitamin D production

Study finds that UVB light exposure may positively affect the gut microbiome and related diseases

24 Oct 2019 Nutrition Insight

Skin exposure to sunlight – specifically type B ultraviolet light (UVB) – can alter the gut microbiome in humans, according to a new study from the University of British Columbia (UBC), in Canada.

Published in Frontiers in Microbiology, the research suggests that vitamin D, which the body naturally produces when exposed to sunlight, mediates a change in the microbiome. This could help explain the protective effect of UVB light in inflammatory diseases like multiple sclerosis (MS) and inflammatory bowel disease (IBD). The researchers note that the findings could point to novel ways to treat inflammatory gut diseases via phototherapy and vitamin D supplementation, but more research is warranted. "In this study, we show exciting new data that UVB light is able to modulate the composition of the gut microbiome in humans, putatively through the synthesis of vitamin D," says Professor Bruce Vallance, who led the UBC study.

The fact that UVB light causes gut microbiome changes via vitamin D production has so far been shown only in rodent studies. "We found that vitamin D production was the main driver of the shift in the microbiome. It is well known that UVB light produces vitamin D and we now are starting to understand that vitamin D is important to maintaining a healthy gut. Although those facts were known separately, this is the first study that links them in humans. The results were important as there was a strong effect visible within the span of a week," Else Bosman, a PhD student at UBC tells NutritionInsight.

Bosman also says that a gut-skin axis has been previously reported by research. The gut and the skin are relatively similar in structure and function of protecting the body from the outside environment. These studies describe how breaching the skin can provoke an immune reaction in the intestine. In this case, there could be vitamin D dependent and independent factors that are made by the skin, which can communicate to the gut. "The concept of a skin-gut axis is new and much more research has to be done to understand how skin and gut communicate with each other," she adds.


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UVB exposure increases microbial diversity

In the clinical pilot study, the researchers tested the effect of skin UVB exposure on the human gut microbiome. Twenty-one, healthy, female volunteers were given three one-minute sessions of full-body UVB exposure in a single week. Before and after treatment, stool samples were taken for analysis of gut bacteria – as well as blood samples for vitamin D levels. Skin UVB exposure significantly increased gut microbial diversity, but only in 12 of the subjects, who were not taking vitamin D supplements during the winter study. "Prior to UVB exposure, these women had a less diverse and balanced gut microbiome than those taking regular vitamin D supplements," says Vallance. "UVB exposure boosted the richness and evenness of their microbiome to levels indistinguishable from the supplemented group, whose microbiome was not significantly changed."

The largest effect was an increase in the relative abundance of Lachnospiraceae bacteria after the UVB light exposures. "Previous studies have linked Lachnospiraceae abundance to host vitamin D status," adds Vallance. "We too found a correlation with blood vitamin D levels, which increased following UVB exposure." This indicates that vitamin D at least partly mediates UVB-induced gut microbiome changes, the researchers note.

The results also showed some agreement with mouse studies using UVB light, such as an increase in Firmicutes –the phylum of bacteria – and a decrease in Bacteroidetes in the gut following exposure.

The study is not designed to show the exact mechanism by which the microbiome changes occur, but both UVB and vitamin D are known to influence the immune system. “It is likely that exposure to UVB light somehow alters the immune system in the skin initially, then more systemically, which in turn affects how favorable the intestinal environment is for the different bacteria,” notes Vallance. “The results of this study have implications for people who are undergoing UVB phototherapy and identifies a novel skin-gut axis that may contribute to the protective role of UVB light exposure in chronic inflammatory diseases like MS and IBD,” he says.

Bosman says that the researchers believe that vitamin D is creating a favorable environment in the intestine for a healthy and diverse microbiome, rather than altering the microbes directly. As the study showed, people who are taking vitamin D supplements were able to maintain the healthy microbiome composition throughout the winter, when there was no UVB light from the ambient sun. This shows that people need a minimum vitamin D level to maintain a healthy microbiome. “Unfortunately, it is really hard to obtain enough vitamin D from dietary sources, despite the fact that many dairy products are fortified in Canada. For many people, vitamin D supplementation is the only option between October and April,” Bosman adds.

In this context, Irish researchers previously called for vitamin D fortification and supplementation to battle high deficiency rates in populations living at northern latitudes.

Could phototherapy boost the gut? To date, photo-therapy is used for skin conditions like psoriasis and eczema. The effect of UVB light exposure on the skin and skin immunity is very well defined, but not much is known about the effect on the rest of the body. “Once the results from the study are confirmed with a larger study group and in people with intestinal issues, there will be the possibility to try out if gut-related issues can benefit from phototherapy,” Bosman says.

She also explains that more research is warranted. “This study made use of a very selective group of participants, being healthy, female, and of pale skin. It would be very interesting to repeat the study with participants that have a lot more variety in ages and with bigger groups to confirm the results. It would be great if we can test if phototherapy is useful for people with intestinal inflammation to promote their gut health in the future,” she concludes.

By KristianaLalou

Coffee drinkers have healthier gut microbiotas

New research suggests that heavy coffee drinkers have healthier compositions of bacteria in their guts.

Medical News TodayAnaSandoiu on October 30, 2019

More and more research is unpacking the health benefits of drinking coffee. Drinking just one cup may fight off unhealthy fat, ease inflammation associated with obesity, or even protect the brain into old age.

Furthermore, drinking at least three cups of coffee every day may keep arteries healthy and supple by preventing a calcium buildup and staving off the risk of clogging. Coffee could also help fight off diabetes by improving blood sugar control and can keep the liver healthy and "happy." But how exactly coffee yields all of these wonderful health benefits has remained somewhat of a mystery. New research shines some light on the mechanisms behind coffee's effects by looking at the links between coffee and the health of the gut microbiota.

Dr. Li Jiao is the senior and corresponding author of the study. Dr. Jiao is an associate professor of medicine–gastroenterology at the Baylor College of Medicine in Houston, TX, and a researcher at the Center for Innovations in Quality, Effectiveness, and Safety at the Michael E. DeBakey VA Medical Center. Dr. Shawn Gurwara, also from Baylor College, who is the first author of the paper, presented the findings at the American College of Gastroenterology (ACG) 2019 Annual Scientific Meeting, which took place in San Antonio, TX.


Image © iStock.com/NikiLitov

Looking into the gut microbiota

"The beneficial roles of coffee consumption in metabolic diseases have previously been shown," Dr. Jiao told Medical News Today. "We set out to examine whether phytochemical 'caffeine' in coffee would account for this beneficial effect."

Dr. Jiao and team looked at "the association between caffeine consumption and the composition and structure of the colonic-gut microbiota." To do so, the scientists asked 34 participants to undergo a screening colonoscopy and endoscopy to confirm the health of their colons.

The researchers obtained 97 "snap-frozen colonic mucosa biopsies" from various segments of these individuals' colons, extracted microbial DNA, and performed 16s rRNA sequencing analysis. The participants answered a self-administered food frequency questionnaire to evaluate the daily intake of coffee. The team divided coffee intake into high coffee consumption — that is, coffee containing at least 82.9 milligrams (mg) caffeine per day — and low coffee consumption, that is, coffee containing less than 82.9 mg caffeine daily.

The effects of coffee on the gut
The analyses revealed that high caffeine consumers had high levels of the bacterial genera Faecalibacterium and Roseburia, but low levels of Erysipelatoclostridium — a "potentially harmful" bacterial genus. The research team found these associations regardless of the participants' age or the quality of their diets. Although part of a normal healthy gut, excessive levels of Erysipelatoclostridiumramosum (E. ramosum) may be harmful. Previous studies in humans have linked E. ramosum with metabolic syndrome, and animal studies found links with "upregulation of small intestinal glucose and fat transporters," which enhanced diet-induced obesity. Furthermore, the researchers of this present study found higher levels of other bacteria "commonly detected in gut microbiomes" in high coffee consumers. These bacteria included Odoribacter, Dialister, Fusicatenibactor, Alistipes, Blautia, and various strains of Lachnospiraceae.

The authors conclude: "Higher caffeine consumption was associated with increased richness and evenness of the mucosa-associated gut microbiota, and higher relative abundance of anti-inflammatory bacteria, such as Faecalibacterium and Roseburia and lower levels of potentially harmful Erysipelatoclostridium."

Strengths and limitations of the study

Dr. Jiao also commented on the strengths and limitations of the research. The fact that the study examined the mucosa-associated gut microbiome set it apart from most studies, which center on the fecal microbiome, she said. However, she cautioned, "the study was conducted in 34 adult men who had [a] normal colon in a single hospital. It is unknown whether these preliminary results can be applied to women or other populations." Furthermore, said Dr. Jiao, "We used the 16S rRNA gene sequencing that cannot tell which bacterial species are important." Also, the self-reported diet data did not give the researchers information about how the coffee was made or which brands the participants used.

Finally, "We cannot tease out whether polyphenol or other compounds in coffee may also partially explain the association," said Dr. Jiao. "We need [to] learn more about the interaction between the host and gut microbiome in diverse populations," Dr. Jiao added. "More research is needed to understand what these bacteria (such as Alistipes) do in our body."


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Dementia risk higher in those who eat more trans fats

Medical News Today
Catharine Paddock, Ph.D.
on October 28, 2019

A new study of older adults in a Japanese town has found that those whose blood contained higher levels of trans fats were more likely to develop dementia than those with lower levels.

The researchers also found that sweet pastries were likely the biggest source of dietary trans fats in that population. There are two primary sources of trans fats in the human diet: natural and artificial. Natural trans fats are present in small amounts in dairy products and the meat of some animals. Artificial trans fats, or trans fatty acids, are the primary source of trans fats in the diet and are the product of an industrial process that adds hydrogen to vegetable oil to make it solid. According to the American Heart Association, consumption of trans fats can raise the risk of heart disease, stroke, and has links to a higher risk of type 2 diabetes.

In a recent Neurology paper, the new study authors describe how they linked trans fats to a higher risk of dementia using data from an ongoing health study of people living in the town of Hisayama in Japan. "These results," says senior study author Toshiharu Ninomiya, "give us even more reason to avoid trans fats." He adds that "In the United States, the small amounts still allowed in foods can really add up if people eat multiple servings of these foods, and trans fats are still allowed in many other countries." Ninomiya is a professor in the department of epidemiology and public health at Kyushu University in Japan.


Image © iStock.com/Dzevoniia

52–74% higher chance of dementia

The new study used data on 1,628 people who were at least 60 years of age and without dementia when they gave blood samples during a screening exam in 2002–2003. The researchers followed them for another 10 years and noted any incidences of dementia that occurred. During the follow-up, 377 of the participants received a diagnosis of dementia, including 247 for Alzheimer's disease. For the analysis, the team ranged the participants in four equal groups according to their blood levels of trans fats. In the group with the highest blood level of trans fats, the incidence rate of dementia was 29.8 per 1,000 person-years.

In the next highest trans fats group, the dementia incidence rate was 27.6 per 1,000 person-years. In the lowest trans fat group, the incidence rate of dementia was 21.3 per 1,000 person-years. The researchers adjusted the results for other factors that might influence the risk of dementia. These factors included smoking status and conditions, such as high blood pressure and diabetes. After the adjustment, the team found that participants in the highest blood trans fat group had a 52% higher chance of developing dementia during the follow-up compared with the lowest blood trans fat group. For the second highest group, this chance was 74%. The authors note that the link "remained significant after adjustment for dietary factors, including total energy intake and intakes of saturated and polyunsaturated fatty acids."

Trans fats banned in United States

The Food and Drug Administration (FDA) in the U.S. bannedartificial trans fats in 2018, declaring that removing partially hydrogenated oils from processed foods could "prevent thousands of heart attacks and deaths every year." However, the ban contains a provision that allows labels on food containing less than 0.5 grams (g) of trans fats to say that they contain 0 g. This means that some foods may still contain very small amounts of partially hydrogenated oils.

In outlining the reasons for their investigation, the researchers note that few studies had examined the link between trans fats and dementia. Also, those that had investigated the relationship did not yield consistent results. They suggest that the reason for inconsistent results in the previous studies was that they lacked an accurate method for assessing dietary intake of trans fats. In their study paper, the authors describe how they used blood levels of elaidic acid as "an objective biomarker for industrial trans fat." Elaidic acid is a major trans fat in partially hydrogenated vegetable oils. It also occurs in small amounts in milk and some meats.

Sweet pastries accounted for most trans fats

As part of the screening, the participants had also filled in questionnaires about their food intake. By correlating this information with the other results, the researchers were able to assess which foods likely contributed the most to the higher levels of blood trans fats. "Sweet pastries were the strongest contributor," write the authors, "followed by margarine, sugar confectioneries (candies, caramels, and chewing gum), and croissants." "Nondairy creamers, ice cream, and rice crackers also remained in the final model," they add. One of the study's limitations was the fact that it only measured blood levels of trans fats at the outset. The researchers also note that since the data came from a single town in Japan, they cannot say whether the results would be the same in other populations with different patterns of trans fats intake.

The World Health Organization (WHO) have released a step by step guide for removing artificial trans fats from the global food chain. The United Nations health agency estimate that every year, consumption of trans fats causes more than 500,000 deaths from cardiovascular disease worldwide. Prof. Ninomiya observes that WHO have called for the worldwide elimination of artificial trans fats by 2023. "These public health efforts have the potential to help prevent dementia cases around the world, not to mention the decrease in heart disease and other conditions related to trans fats."

Prof. Toshiharu Ninomiya

Yogurt, fiber, and lung cancer: What's the link?

Medical News Today Tim Newman on October 28, 2019

A recent analysis investigated whether consuming dietary fiber and yogurt might be linked to a lower risk of lung cancer. Perhaps surprisingly, the team concludes that it is.

A recent paper in the journal JAMA Oncology looks for a relationship between diet and lung cancer.

In particular, the team focused on two foods: a prebiotic and a probiotic. Prebiotics are compounds that support the growth of gut bacteria.

Dietary fiber — which occurs in fruits, vegetables, grains, and nuts — is the primary prebiotic in our diets. Probiotic foods contain microorganisms. One of the most common probiotic foods is yogurt.

In recent years, the roles of gut bacteria, probiotics, and prebiotics in health have received a great deal of attention. As the authors of the latest study explain: "[S]tudies have [...] reported associations of yogurt or fiber with reduced risks of various diseases, including metabolic disorders, cardiovascular diseases, gastrointestinal cancers, and premature death."

The gut and the lungs

Although it seems surprising that gut bacteria and lung health might be connected, evidence of this association is mounting. For instance, one recent study found that gut bacteria play a role in lung inflammation. Its authors explain how metabolites produced by bacteria, such as short-chain fatty acids, can suppress inflammation in the lungs. Other studies have shown links between consuming fiber and improved lung function.


Image © iStock.com/Rocky89

Although evidence of the links between gut bacteria and lung health is strengthening, the researchers behind the new study write that "direct evidence linking dietary fiber intake to lung cancer risk is scarce." Even fewer studies have investigated the relationship between yogurt and lung health. To fill this void, the team carried out a pooled analysis that included more than 1.44 million people from the United States, Europe, and Asia.

The researchers collated information about each participant's diet. These data allowed them to calculate the amount of yogurt and fiber the participants consumed. They also took into account other factors that play a role in lung cancer, including age, ethnicity, education level, obesity, and smoking status.

A reduction in lung cancer risk
The median duration of follow-up was 8.6 years, and during this time, 18,882 participants developed lung cancer. After adjusting for confounding variables, the authors conclude that: "Both fiber and yogurt intakes were inversely associated with lung cancer risk." People who consumed the most fiber had a 17% lower risk of developing lung cancer than those who ate the least fiber. Similarly, people who consumed the most yogurt had a 19% lower risk of developing lung cancer than those who consumed no yogurt. Even participants who consumed just a small amount of yogurt had a 15% lower risk of developing lung cancer than those who consumed none.

Interestingly, the benefits were more pronounced in the participants who consumed alcohol than in those who drank no alcohol. Also, the relationship was most pronounced in the people who drank heavily. The study authors also note a joint association between fiber, yogurt, and lung cancer. Those who consumed the greatest quantities of fiber and yogurt had a 33% lower lung cancer risk than who consumed the least fiber and never ate yogurt. It is also worth noting that these figures describe relative change rather than absolute change. As an example, if a person's risk of developing lung cancer was 1 in 100,000, an increase in relative risk of 33% would equate to an overall risk of 1.33 in 100,000.

Overall, the study authors conclude: "Our findings suggest that the health benefits of fiber and yogurt may include protection against lung cancer in addition to their well-established beneficial effects on cardiovascular disease and gastrointestinal cancer." These benefits, they theorize, are "rooted in their prebiotic and probiotic properties, through which they independently or synergistically modulate gut microbiota."

Strengths and limitations

This study's two greatest strengths were the large quantity of data and the fact that the researchers accounted for a wide range of factors in their analysis. However, there were certain limitations. For instance, they did not have detailed information on the sources of dietary fiber the participants consumed, such as grains, fruits, or vegetables. Similarly, they had no information about the type of yogurt, the bacterial strains it contained, or its sugar content.

As with all observational studies, there is a chance that the association is due to factors that the researchers did not account for in their analysis. They also note that the benefits of dietary fiber and yogurt were not significant in black and Asian populations. They believe this might be due to smaller sample sizes. However, they explain that "further investigation is needed [...] among those populations." Digging into the role of nutrition in chronic disease is difficult for many reasons. Although the relationship between gut health and lung health is becoming clearer, more work is needed to fill in the details.


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Exercising before breakfast may be most healthful choice

Medical News Today Lauren Sharkey on October 28, 2019

Figuring out when to exercise could be just as important as the exercise itself, according to new research on the relationship between meal times and workouts.

Some studies suggest that the effectiveness of exercise may be tied to when a person eats. However, it is rarely possible to translate findings from studies in lean people to those with obesity. So, scientists from the Universities of Bath and Birmingham, both in the United Kingdom, set out to see if meal and exercise timing had a similar link in people with overweight or obesity.

Having obesity and living a relatively sedentary life can lead to an increased risk of cardiovascular disease. This is because insulin sensitivity is reduced, and hyperinsulinemia — a condition characterized by excess insulin levels — is increased. Finding a way to prevent these insulin-related effects could potentially prove to be life-saving.

'Profound' benefits

The study, which now appears in the Journal of Clinical Endocrinology and Metabolism, aimed to examine how exercising before and after eating affected muscle fat stores and insulin response. It was the first to look at this relationship in people with overweight or obesity. The experiment, which lasted for 6 weeks, involved 30 men the researchers categorized as either overweight or obese.

The team split these men into three groups:

- one that ate breakfast before exercising
- one that ate breakfast after exercising
- one that made no lifestyle alterations

"Our results suggest that changing the timing of when you eat in relation to when you exercise can bring about profound and positive changes to your overall health," says Dr. Javier Gonzalez, from the University of Bath's Department for Health.

A greater burn

Participants who exercised before breakfast burned twice as much fat as those who exercised after eating the same meal. There is a simple reason for this: When people fast overnight, they have lower insulin levels during exercise, allowing their body to use up more fat.

"Importantly, while this didn't have any effect on weight loss, it did dramatically improve their overall health," notes Dr. Gonzalez. The muscles of those who exercised before breakfast responded better to insulin, better controlling blood sugar levels in the body.

Dr. Gonzalez says that this effect is "all the more remarkable, given that both exercise groups lost a similar amount of weight and both gained a similar amount of fitness." "The only difference was the timing of the food intake," he adds.

The muscles of those in the group who exercised before breakfast also exhibited bigger increases in certain proteins — especially those responsible for delivering glucose to the muscles.

Even more notable was the fact that those who ate breakfast before exercising were no better off in terms of insulin response after eating than the control group.

Future Focus

"This work suggests that performing exercise in the overnight-fasted state can increase the health benefits of exercise for individuals, without changing the intensity, duration, or perception of their effort," states study co-author Dr. Gareth Wallis, from the University of Birmingham. These particular findings are sex-specific, as the researchers only worked with men.

Therefore, further studies will need to replicate the conditions in women to see if they, too, benefit from exercising before breakfast. The breakfast that the participants consumed was high in carbohydrates, so future research may also need to examine whether low carb meals produce the same effects. Longer studies will also need to take place before researchers can form any solid conclusions.

However, fasting overnight and exercising before breakfast could be the key to increasing the effectiveness of exercise in people with overweight or obesity.

Potato puree is a promising race fuel for athletes

Medical News Today
Catharine Paddock, Ph.D. on October 22, 2019

Athletes commonly consume carbohydrate energy gels to improve race performance and endurance. Now, research involving trained cyclists suggests that potato puree can be just as effective.


Image © iStock.com/FotografiaBasica

Compared with ingesting water alone, cyclists who ingested potato puree performed as well during an endurance trial as cyclists who consumed a commercial carbohydrate energy gel with the same amount of carbohydrate. "In conclusion," note the researchers in a recent Journal of Applied Physiology paper on the study, "potato and gel ingestion equally sustained blood glucose concentrations and [time trial] performance." "Research has shown," says senior study author Nicholas A. Burd, a professor of kinesiology and community health at the University of Illinois at Urbana-Champaign, "that ingesting concentrated carbohydrate gels during prolonged exercise promotes carbohydrate availability during exercise and improves exercise performance."

"Our study aim was to expand and diversify race fueling options for athletes and offset flavor fatigue," he adds. Although protein and fat can supply energy, the body breaks down carbohydrate much more efficiently to meet the energy demands of high intensity exercise. Carbohydrate energy gels are ideal race fuels because, not only do they sustain performance, but the body readily digests and absorbs them. "Potatoes are a whole food based option that fulfills these criteria, yet their impact on performance remains unexamined, " write the authors.

Potato puree vs. carbohydrate gel

The study involved 12 healthy cyclists with several years of training and whose weekly cycling distance averaged 165 miles (267 kilometers). Their average age was 31 years old. The team randomly assigned each participant to one of three race fuel groups: potato puree, carbohydrate gel, and water only. All groups completed a 2-hour cycling challenge and a time trial while consuming their particular race fuel. The trial had a crossover design, meaning that the groups swapped around so that each participant experienced all three race fuels. The researchers standardized the cyclists' food intake for 24 hours before the trial.

The cyclists gave blood samples throughout the trials. The researchers also monitored their heart rates, core body temperatures, exercise intensity, and gastric emptying. They also noted gastrointestinal symptoms. The measures revealed that heart rate, blood glucose, and blood lactate were higher by similar amounts in the gel and potato puree groups when the research team compared them with the water only group. Lactate is a byproduct of muscle metabolism and a marker of exercise intensity. In addition, time trial performance was the same in the gel and potato puree groups and better than the water only group.

"We found no differences between the performance of cyclists who got their carbohydrates by ingesting potatoes or gels at recommended amounts of about 60 grams per hour during the experiments," notes Prof. Burd. He remarks that both potato puree and carbohydrate gel gave the cyclists a "significant boost in performance" in comparison to water only consumption.

Savory change to sweet carbohydrate gels

There was a marked difference in gastrointestinal effects, however. The potato puree group experienced more bloating, pain, and flatulence than the gel and water only groups. Prof. Burd suggests that these symptoms could be because it takes a larger volume of potato puree to yield the same amount of glucose as that in gels. "Nevertheless," comment the authors, "average [gastrointestinal] symptoms were lower than previous studies, indicating that both (carbohydrate) conditions were well tolerated by the majority of the study's cyclists."

They note that, as a cheap whole food that is dense in nutrients, potatoes offer athletes a promising race fuel option. In addition, they provide a savory alternative to sweet carbohydrate gels. The Alliance for Potato Research and Education sponsored the study. "All in all, our study is a proof-of-concept showing that athletes may use whole food sources of carbohydrates as an alternative to commercial products to diversify race fueling menus."
Prof. Nicholas A. Burd


Image © iStock.com/Kikovic

FOOD SCIENCE & INDUSTRY NEWS

Estimating calorie content not clear-cut for all

Science Daily October 2, 2019

We make food decisions several times a day -- from what time we eat to how much -- but a new University of Otago, New Zealand, study has found we are not very good at judging the energy-density of what we consume.

Lead author Dr Mei Peng, of the Department of Food Science, says inaccurate judgements about food energy and/or portion size can lead to overeating and subsequent weight problems. "It is very important to understand how people make these decisions, particularly in the current food environment, where foods are more accessible, palatable and energy-dense than ever.There is already a large body of literature suggesting that people can vary considerably in terms of knowledge about food, but there is little understanding about how people differ from one another when making subconscious decisions about food," she says.

The research, supported by the Marsden Fund and just published in Appetite, was carried out in conjunction with Associate Professor Ami Eidels of the University of Newcastle, Australia.The group studied how 70 people made decisions between food energy and portion size and found people were good at assessing food quantities, but not the energy density of food."We were particularly surprised to see substantial variations across people for judging food calories. Although people are generally good at differentiating high-calorie foods from low-calorie foods, this judgement process appears to be more intuitive for some than others. For some people, if a high-calorie food is presented in a small quantity, it appears to be less 'unhealthy'," Dr Peng says.

As many of the available health guidelines are based on portion sizes, the researchers believe people need to be better informed about food energy content.Dr Peng believes more explicit and salient energy labels on food packages might be one of the possible methods to help people to make better decisions."It is very important for us to make deliberate effort to plan our meals and snacks to ensure we don't overeat.Relative to controlling food portions, paying close attention to food calories, and making good food choices are possibly more important for weight maintenance or weight loss."

Organic food, beverage launches surge in Europe, North America

IFT Weekly October 2, 2019

According to Mintel Global New Products Database (GNPD), in the last 10 years, the total number of new food and drink product launches globally with an organic claim has risen from 6% to 10% between August 2009 and July 2019.

Mintel research finds that Europe is leading the way in terms of organic food and drink innovation, with almost a fifth of all food and drink products launched in Europe carrying an organic claim. In the 10 years to July 2019, the number of European food and drink launches with an organic claim has shot up from 9% to 17%, satisfying Europe's hunger for organics. Current leading innovators include France (accounting for 22% of all organic launches in Europe between August 2018 and July 2019), Germany (20%), and Spain (9%).

But it's not just Europe that is enjoying a greater variety of organic food and drinks; North America has also experienced an impressive increase in organic launches. The number of organic food and drink products has grown from 9% in 2009 to 15% in 2019 (August 2018–July 2019). While the availability of organic food and drink products in Asia Pacific, Latin America, and the Middle East and Africa has risen slightly, only 4% food and drink launches between August 2018 and July 2019 carried an organic claim in each of these regions. This is up from 3% in Asia Pacific and Latin America, and 2% in the Middle East and Africa 10 years ago.

"Organic produce has seen growing support among European consumers at a time of increasing concerns for wellbeing, health, and the environment," said Katya Witham, global food and drink analyst at Mintel. "Our research shows that the European market is spearheading organic food and drink innovation, with France, Germany, and Spain leading the way. Although organic products have fully entered mainstream channels and continue to gain traction with shoppers, the organic segment still offers innovation opportunities across numerous food and drink categories. This is especially true in categories where organic claims have previously played a minor role, such as wine."

Mintel research also finds that among consumers in France, Germany, Italy, Spain, and Poland, Millennials (aged 25–34) and Gen Zs (aged 16–24) are the most likely to purchase organic food and drink. Of these five countries, Italian Millennials are most likely (87%) to buy organic food and drink, followed by their German (86%), Spanish (85%), and French (81%) counterparts. In Poland, it's Gen Z that is most interested in organic food and drinks, with 83% claiming to buy such products, compared to 80% of Polish Millennials.

What's more, younger consumers are also more likely to pay higher prices for organic food and drink. This is especially true for Spanish Gen Zs: 38% say organic products present good value for money, in comparison to 26% of all Spaniards. Meanwhile, young Germans are less willing than their Spanish counterparts to pay extra for these products: 27% of those aged 16–24 accept higher prices for organics, compared to 21% of the entire German population.

"The golden standard in sports nutrition": Industry leaders expand on whey applications and its alternatives"

31 Oct 2019
Nutrition Insight

Sports nutrition is barreling toward the mainstream with its appeal reaching athletes, fitness enthusiasts and active consumers.


Image © iStock.com/Moussa81

Whey protein remains a key ingredient, while industry is getting creative with applications that satiate consumer demand for performance-boosting healthy indulgence. Leading industry players speak to NutritionInsight about expanding applications, the importance of dairy proteins and how plant-based alternatives are affecting the space. According to Jordan Donohue, Business Development Manager, Sports Nutrition & Health Food at Arla Foods Ingredients, the market outlook is positive for dairy ingredients, driven by increasing consumer awareness of their nutritional value and functionality.

"Dairy ingredients are performing very well in the sports nutrition sector as rising demand for taste, nutrition and naturalness has spurred a lot of impressive product innovation. Due to their high-quality complete protein content, dairy ingredients are valuable components for food and beverage product developers looking to deliver quality nutrition and protein content. Dairy is the gold standard of proteins in the sports performance and nutrition area and that is not changing anytime soon," says Mindy Leveille, Marketing Manager, Proteins at Kerry Taste & Nutrition.

Innova Market Insights reports strong growth in sports-related positionings within mainstream food and beverage NPD. A 188 percent growth has been reported in new products with a high/source of protein positioning and a 65 percent rise in energy/alertness positions from 2013-2017 (excluding sports nutrition). The space is increasingly looking at both animal-derived and plant-based proteins.

Innovating with stand-out applications

Consumers seek to boost performance and gains, but at the same time, they want an added flavor profile that satisfies their need for indulgence. In a Kerry consumer survey about the three most important factors in choosing a protein product, 72 percent of consumers selected the flavor of the product, while 63 percent selected the texture of the product.

To cater to this demand, industry is perpetually exploring novel applications and flavor combinations. "Trends that prevail through the whole food and beverage industry are extending into sports nutrition, and it's our priority to help customers create new formulations that meet those needs. Alongside taste and effective hydration, recreational sports enthusiasts place strong emphasis on attributes like clean labels, convenience and functionality," notes Vicky Davies, Global Marketing Director, Performance and Active Nutrition at FrieslandCampina Ingredients.

"We are investing a lot of time in flavor profiles, masking technologies and high protein food concepts," explains Andrew Sturdy, Head of Product Development at Ornua Nutrition Ingredients UK. "In dairy-based products, birthday cake flavors have been very popular over the last year. Also, malty cereal milk flavor profiles are gaining a lot of popularity. For me, nothing beats a luxurious chocolate flavor. On the pre-workout and amino side, we're seeing a wide range of flavor development requests with blue raspberry and pink lemonade being some of the favorites."

"While powders remain the big chunk of the business, a lot of new consumer interest entering the category is convenience and on-the-go concepts including ready-to-drink (RTD) and ready-to-eat products. There is also a new interesting concept of protein pockets or pouches," notes VictoireVisseaux, Product Manager at Lactalis Ingredients. "While chocolate and vanilla remain the big sellers, it looks like consumers are open to more exotic flavors and refreshing applications with fruity flavors."

Angus Rowland, Head of Innovation, Sports & Active Lifestyle at NZMP says that new formulations for sports nutrition are focused around functional protein innovations and added benefits beyond just protein content. Whether the application is a ready-to-mix powder, an RTD shake or a protein bar, manufacturers are looking to differentiate from the crowded market by including ingredients such as vitamins, fiber or probiotics. "We are developing a range of products that support this type of added benefits and also see growth across all applications for 'HiLo' formulations – high in protein and low in sugar. For protein specifically, we are innovating with functional ingredients that have a particular performance. For example, we are controlling the solubility and foaming for powder applications, making heat-stable proteins for RTDs and soft, stable proteins for bars," he says.

Leveille notes that protein-fortified, RTD beverages are rapidly gaining popularity as consumers see the value in beverages with added protein. Coffee-flavored beverages are of high interest, as are protein-fortified smoothies and milk drinks. "For many consumers, the twin desires of indulgence and trying to follow a healthy diet are a constant battle. Dairy proteins can help deliver improved taste and texture in a healthier format. An example of this is the growth in popularity of Greek-style yogurts with dairy protein providing indulgence in the form of improved mouthfeel, texture and taste in a reduced-fat or fat-free product. This trend is also being seen in the ice cream category with the growth of protein-enriched indulgent ice creams with lower calories and sugar," Leveille adds.

Moreover, advances in dairy processing techniques to influence the water binding and solubility of dairy proteins has resulted in the development of dairy protein bars that are more indulgent, while delivering higher protein levels and significantly lower sugar content than was possible in the past, Leveille continues. "In many ways, whey is still the most important dairy ingredient for sports nutrition. From a protein standpoint, its amino acid profile is still second to none. Its functionality is expanding further into different product categories – drinks, bakery, yogurts, ice creams and so on," notes Donohue.

How does the plant-based trend perform?

The trend for plant-based protein continues to grow as consumers look for transparency in their food ingredients. They are also seeking products with a reduced carbon footprint, says Rowland. However, the nutritional quality of dairy protein when compared to plant-based protein is well understood, and dairy remains the choice for consumers who are looking for the most effective source of complete protein. This is reflected in the percentage of products on the market that are dairy-based versus plant-based, he adds.

"Plant proteins are starting to work in more applications, despite their grainy texture and often poor mouthfeel. However, if you want to formulate with a protein that provides a more comprehensive amino acid profile and superior functionality cross-category, whey is likely to be the better option," says Donohue. "In order to have a nutrient-dense protein from plants we need to combine different sources of plant protein. Dairy protein is, therefore, the ideal one to use to cater to the body's needs," says MathildeGuerville, Research Scientist at Lactalis Research and Development.

"To get a complete amino acid profile, we often need to combine different sources such as pea protein with brown rice protein.

Pea protein is usually low in methionine and cysteine whereas rice protein is low in lysine. Therefore, a combination of the two can complement each other well. Solubility is also a key factor when it comes to formulating a good-tasting beverage, with grainy mouthfeel being the number one challenge. There have been some impressive developments in the processing technologies of plant proteins over the last decade. These have really helped when formulating plant-based products" notes Sturdy.

According to Leveille, many plant protein sources provide a host of nutrients, such as complex carbohydrates, fibers, vitamins, and minerals. "One challenge is that they are lower in certain essential amino acids. Additionally, the protein digestibility-corrected amino acid score (PDCAAS) of most plant proteins, with a few exceptions, is less than one. When formulating nutritional products with plant-based proteins, it is beneficial if different sources of plant proteins are used to complement deficient essential amino acid profiles," she says.

"Milk proteins contain all the essential amino acids in the right proportions to meet the body's needs. This means that they are a good source to use in combination with plant proteins to improve the overall protein quality," Leveille adds. "More choice is good in any market, and we acknowledge that plant-based proteins are required by some consumers. But despite the growing options in the marketplace, whey protein continues to dominate. Dairy proteins are the most nutritionally complete protein available, offering unique macronutrients including high levels of branched-chain Amino Acids," concludes Davies.

What's next

The dairy industry is geared to respond to consumer needs for innovative nutritional products within the sports nutrition sphere. Manufacturers are employing novel, flavorful formulations and applications to reach consumers' demands for healthy yet indulgent protein supplementation. Industry maintains that dairy ingredients remain the best option for sports nutrition applications and while the plant-based trend is influencing the space, it also presents hurdles that dairy has already overcome.

By Kristiana Lalou

Functional fiber and vitamins: SternGut micronutrient premix to support gut health and immunity

29 Oct 2019 Nutrition Insight

Gut health and immunity are increasingly busy platforms within the food and nutrition industry as research continues to demonstrate how a healthy microbiome is instrumental to good health.

Responding to this, SternVitamin, a SternWywiolGruppe company, has developed "SternGut." This immune-supporting vitamin and mineral premix is designed to help consumers uphold a healthy immune system as well as maintain performance in stressful situations. The company will be showcasing its micronutrient premix at Food ingredients Europe (FiE) hosted in Paris, France, December 3-5 this year.

SternGut is targeted to support good gut health of people who suffer from both physical and psychological stress, Dr. Christina Mesch, Product Manager at SternVitamin, tells NutritionInsights. This includes working people, students, as well as everyone from professional athletes to "weekend warriors" – professional consumers who can only practice sporting activities on the weekends. As stress can weaken the immune system, especially in the gut, and impacts the gut's microbiota, these targeted consumers are especially prone to infections.

SternVitamin's premix aims to increase fiber consumption, which bolsters gut health and strengthens the immune system using various vitamins and nutrients. Vitamins C and E act as antioxidants with selenium needed for antioxidant enzyme systems in its role supporting immune defenses. The addition of vitamin D and beta-glucans from yeast prevent upper respiratory tract infections, while the premix's zinc helps maintain the balance of the immune system and reduces the risk of infection. Likewise, the premix contains xylooligosaccharides (XOS), which support the growth of beneficial bacteria such as bifidobacteria and lactobacilli within the digestive tract.

Available in powder form, the SternGut premix can be added to foods and beverages, such as cereals, water, snacks, dairy products, baked goods and confectionery.

The premix's orange smell and taste were chosen as the orange flavor is often commercially associated with immune system boosters. "When you think about products that focus on the immune system, orange is usually the first flavor you have an association with. By using this flavor, the acceptance of our premix has been increased. However, we didn't want to focus on the flavor too much, but rather emphasize the functionality of the ingredients."

R&D challenges

Boosting the immune system is the second most important benefit consumers expect from functional foods, beverages and nutritional supplements, the company notes. Therefore, it was imperative to develop a functional food and drink supplement that suited consumers' specific needs.

Dr. Mesch explains that water solubility and low-sugar content were the two main hurdles to overcome during the development stage. "The SternGut ingredients worked well in terms of water solubility, which was the first aspect that we were very focused on. The second aspect we examined was a low sugar content. When we reduced the sugar content too much, the premix did not taste good at all." This, however, does not mean that SternGut is sweet, she maintains. "Now, we are on a level that is not too sweet nor too natural. It is a really good balance."

Dominating industry trend

Also active in the gut health solutions space, Taiyo will be presenting a line of new dietary additives at FiE, including a functional cola containing Sunfiber.

In response to increasing awareness of gut health, Comet Bio has launched its Arabinoxylan Plant Fiber Extract. The extract provides supplement, food, and beverage manufacturers a functional way to add prebiotic dietary fiber to their products and meet consumer demand around gut health.

Good gut health has become increasingly important to consumers as science-backed studies continue to prove the link between intestine and cognitive health. This means that one-size-fits-all health recommendations no longer address individual digestive health concerns. Rather, the potential for personalized nutrition supplements and technology to support good gut health is prospering within the nutrition industry.

By Anni Schleicher

Is plant-based reaching saturation? Innovation opportunities in a meat-free market

By Flora Southey
10-Oct-2019 – Food Navigator


Image - iStock.com/AnnaPustynnikova

While certain plant-based categories are booming, others are lacking in innovation. So where do market opportunities in vegan product development lie? FoodNavigator hears from industry experts at Oatly, Bol Foods, and Sainsbury's.

Multinationals, start-ups and entrepreneurs in the UK are working hard to meet growing demand for meat-free options. According to Mintel, 2018 saw the UK launch more vegan products than any other nation. Industry will have to continue on this trajectory. By 2025, it is predicted that vegans and vegetarians will make up a quarter of the British population, with flexitarians expected to account for under half of all UK consumers. So which plant-based foods are reaching UK retailer shelves? And if some categories are reaching saturation, where are the gaps challenger brands should be aiming to fill?

Looking beyond the burger 'hype' Whether consumers are cutting out meat for environmental, animal welfare, or health reasons, the plant-based trend is 'definitely not a fad', according to Sainsbury's senior ready meal and meat-free buyer, James Hamilton. The category expert has seen a dramatic increase in the amount of plant-based offerings pass across his desk in the past 12 months. "There are stacks," he revealed at start-up event Bread and Jam in London last week, "there is loads of choice". While Hamilton said he does not see any 'massive gaps' in plant-based innovation, he did suggest that the burger analogue category is fast-approaching – if not already surpassed – saturation point. There is 'too much hype' in burgers, he told delegates during a panel discussion. Approaching this category could indicate 'a lack of thinking in business'. "So if you are going to bring a burger, it has to be a different take on it, doing it in a completely different way."

Soy and coconut-free dairy

It comes as no surprise that for Oatly UK's general manager, Ishen Paran, the target market for plant-based innovation is dairy. The Swedish oat milk brand has achieved significant growth in the UK market. The company's 2018 turnover for this market alone reached £18m, marking an 89% increase from 2017 figures. Turnover for this year (2019) is projected to reach £30m.

Although best known for its oat drinks, the brand has expanded into other dairy-free categories and now sells a non-dairy creamer, a crème fraiche alternative, and a 'whippable' vanilla custard. "There are still big categories that don't have a huge amount of choice," said Paran, citing yoghurt as one sector with plant based market potential.

As it stands, the non-dairy yoghurt market is largely made up of soy-based or coconut-based products. However, consumers may decide against purchasing soy-based products for environmental or health reasons, and coconut has a notoriously strong taste. “So for us as a brand, yoghurt is an obvious one,” said the general manager, along with cheese, cooking products, and icecream. Butter is also ‘on the agenda’, Paran revealed.

An ultra-processed backlash?

While there may be sectors within the greater plant-based category that are saturated, “we are so far away from saturation point”, according to Bol Foods founder and CEO Paul Brown. The ex-Innocent food boss first launched his range of pots, salad jars and soups under the Bol brand in 2015. Two years in, Brown decided to ditch meat and fish from the range, and has since cut out all dairy to become a 100% plant-based brand. It was also a conscious decision to have no ultra-processed foods in the range, the CEO continued. In saying that, ‘it’s about moderation’: “From my perspective … eating a plant-based burger is better than eating a beef burger. But I do think that over the next few years, as we start to get more data about the nutritional qualities – or otherwise – of some of this highly processed stuff, there could be a bit of a backlash.” Brown conceded there is a market for ultra-processed, ‘but it’s not as healthy’.

Sainsbury’s Hamilton similarly predicted a move away from ultra-processed ‘science’ in the future. “I think there will be roles for both parts,” he said, referring to ultra-processed foods made by scientists, and traditional cooking methods. While highly processed manufacturing is advantageous in terms of cost efficiency and reliability, it can create disconnect between values and food, and specifically, how much consumers are willing to pay for products, he continued. Whatever the processing method, Bol Foods’ Brown advised entrepreneurs to push boundaries. “There is a paradigm shift happening and, like any good business idea, you’ve got to be ahead of the trend,” said Brown. “Come up with consumer insight that no one else has done, innovate, and feel really uncomfortable. If you’re doing something that feels really obvious, it’s probably not going to work.”

Where next for edible packaging? From dissolvable pre-workout protein packs to instant oatmeal

By Elaine Watson 16-Oct-2019 – Food Navigator USA

Tide Pods remain firmly off the menu, but individually portioned instant coffee, pasta, oatmeal and servings of protein powder encased in edible packaging that dissolves as soon as it hits water could become a staple in US households as firms seek to reduce packaging waste, boost convenience, and help consumers engage in portion control, says Monosol.

Monosol, which makes patented food grade water soluble edible film from polyvinyl alcohol (PVOH) – a generally recognized as safe colorless, odorless and tasteless substance that dissolves in water in seconds - is seeing growing interest in three areas:

• Consumer packaged goods : Individually portioned pasta, rice, instant coffee, oatmeal and protein shakes and drinks mixes portioned into packets that dissolve during preparation.

• In industrial scale food production : To enable the delivery of precise quantities of ingredients such as coloring, spices, and oil, into large batches of products.

• Foodservice/restaurants : Anywhere with low skilled staff or time-pressed staff looking for a hassle free means of delivering precise quantities of minor ingredients into recipes quickly and accurately.

While weight for weight it’s more expensive to buy pre-packed ingredients, industrial customers are saving money through increased accuracy and speed, less cleaning/mess/dust, reduced wastage, and lower labor costs, Dorota Bartosik, senior manager, new ventures marketing, told


Image © iStock.com/Matveev_Aleksandr

FoodNavigator-USA. "In some cases the benefits are for exployees, who maybe don't have to wear protective gear in environments where dust from certain ingredients is floating around; we're helping create a better working environment."

Mess-free protein powder (no tubs, no scoops)

In consumer products, early adopters such as VADE Nutrition , Podz Nutrition and SERV Nutrition (Prodrop) have introduced dissolvable protein pre-workout packs or protein drops which are convenient, pre-portioned and mess-free (no more scoops and tubs), said Bartosik. "Nature's Bounty has also introduced dissolvable protein packs under the Body Fortress and Pure Protein brands."

For a product such as instant oatmeal, which often comes in pre-portioned paper sachets, these could be ditched and replaced with PVOH, creating no waste, she said.

"We're just scratching the surface when it comes to potential food applications. It's not just about sustainability, but also about convenience, portability and innovation: brand reinvention through new form factors. "For something like pasta, the portion control aspect might be more appealing."

You can stretch it quite a bit "What's appealing about PVOH vs some other edible packaging materials is that it's really strong and robust," added Jon Knight, manager, new ventures technology. "You can stretch it quite a bit, and it dissolves quickly and completely, whereas some other materials kind of disperse rather than completely dissolve," said Knight, who said PVOH is not metabolized by the body and passes straight through the digestive tract. According to its GRAS determination, Monosol produces food grade PVOH by polymerization of vinyl acetate monomer through controlled hydrolysis of the resulting polyvinyl acetate. The FDA issued a no questions/objections letter in September 2019.

WOAH! Protein-packed ice cream and drinks shaking up the Singapore market

By Guan Yu Lim 09-Oct-2019 – Food Navigator Asia

WOAH! Protein is achieving success in the Singapore market with its novel protein ice cream containing L-leucine, which was originally created for the founder's mother who was undergoing treatment for leukaemia.

According to its founder, Edward Foo, one serving of ice cream (100g) provides 11.7g of protein and 4g of L-leucine. Mainstream ice cream contain around 5g of protein per serving. The high protein ice cream is certified by the Health Promotion Board (HPB) in Singapore as a healthier choice product, and is also lower in calories, carbohydrate and sugar.

Protein power

Foo said that L-leucine can help stimulate protein synthesis, reduce muscle degeneration and assist in building muscle mass. L-leucine is an essential amino acid that the body cannot produce on its own, and hence must be obtained from the diet. Mostly found in whey protein, soy protein, and pea protein, it is also found in chicken, fish and beef in minimal amounts. Recently in June, the HPB announced plans to work with food manufacturers to reformulate food products so they contain higher levels of protein for people above 50 years old, to keep muscle and bone mass. This is in line with the HPB 2012's programme to get food manufacturers to develop more functional foods to boost health and fight diseases.

For everyone

The ice cream is intended for all ages, including children, elderly, athletes and weight watchers who are looking for a healthier product to indulge in. Foo added that the product was also suitable for certain patients. He said the development of the product began as a homemade recipe for his mother who was suffering from appetite loss from acute myeloid leukemia in 2017. Coupled with the lack in appealing protein-based foods, he said the protein ice cream was a means to fulfil her dietary protein intake for recovery.

According to Foo, the best-sellers are chocolate and salted caramel. Other flavours available include peanut butter, strawberry, vanilla, cookies and cream. They are available in 100mL and 473mL. The product is also vegetarian and gluten free. He hopes his product, "can benefit all Singaporeans in providing a guilt-free healthy dessert. We want to give consumers the woah (surprise) feeling upon consuming the ice cream, and that the taste is as good as any other ice cream in the market."

Next steps and partnerships

Woah! Protein ice cream was launched in Singapore in July this year, at selected NTUC outlets and Nutrition Depot (vitamin and supplement stores), retailing for SG$19.90 (US$14). Foo said the firm was in the midst of working with other retailers like Phoon Huat, Cold Storage, and Hao Mart (mini mart), although details are yet to be finalised. He said he was also considering tapping into the sports market: "Commercial gyms such as Virgin Active and local gym chain Gymmboxx have expressed interest in promoting healthier dessert options to their clientele. "We plan to have our products available across all platforms."

Foo said he is aimed to roll-out ready-to-drink lactose-free protein shakes and more food categories like frozen yogurt to its list of new healthy high protein foods by 2020. The protein shake will contain 15g of protein and contain isomaltulose, a healthier form of sweetener. It will come in four flavours, milk tea, chocolate, vanilla and latte. "We will be launching more local flavours, and new products range to benefit Singaporeans in leading a healthier lifestyle ," he said. Apart from its presence in Singapore, he is eyeing a regional expansion in Malaysia, Indonesia, Thailand, and Taiwan.


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REGULATORY NEWS

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"Reformulation needed at scale": EC report finds over half of packaged foods too unhealthy for children

31 Oct 2019 Nutrition Insight

Between half and two-thirds of breakfast cereals, ready meals, processed meat, processed seafood and yogurts are too unhealthy to market to children.

This is according to a study from the European Commission's Joint Research Centre (JRC), which examined the nutritional composition of 2,691 European-sold products in five categories. These were compared to various nutrient profile models that have been developed for the purpose of restricting the advertisement of foods and beverages to children. The researchers highlight that the results may partially explain high child obesity rates and are calling for reformulation "at scale."

Overall, the key reasons that the products in the commercial database were ineligible for marketing were:

• Breakfast cereals and yogurts were too high in sugars.

• Processed meat, processed seafood, and ready meals had too much salt.

• Breakfast cereals did not have sufficient fiber.

• Yogurts were too high in total fat and saturated fat.

The report, which is published in Public Library of Science (PLOS) One, highlights that even without marketing, these food products are likely consumed widely and regularly in the EU, including by children.

One of the nutrient profile models studied, the EU Pledge, was developed by the private sector. The study also made use of the World Health Organization (WHO)'s Regional Office for Europe's model. The models were selected as they have a matching Europe-wide scope and have an express purpose of assessing product healthfulness in general show similar criteria.

Additionally, the WHO Europe model has already been used to assess product healthfulness in general.

Although previous assessments had shown substantial differences in terms of model strictness and agreement, EU-wide data on how leading products in the various national markets perform against these health-minded nutrition criteria was unavailable prior to this study. Using the EU Pledge model, the researchers found that 48 percent of products were ineligible for marketing to children. Specifically, ineligibility ranged from 29 percent of yogurts to 65 percent of processed meats.

Meanwhile, according to the WHO Europe model, 68 percent of products were ineligible. Within this, processed seafood had the smallest share (31 percent) and breakfast cereals the largest (80 percent). The researchers note that, looking ahead, nutrient profile models could serve as benchmarking tools for monitoring and evaluating food product reformulation efforts.

Reformulation pressure

Currently, the EU Audiovisual Media Services Directive obliges Member States to foster the use of co- and self-regulation to limit children's exposure to commercials for foods and beverages that are high in salt, sugar, saturated fats or trans-fatty acids or that otherwise do not respect nutritional guidelines. This is because the marketing of foods that are high in saturated fat, sugar and salt counters the efforts by EU countries in promoting healthy eating and may lead to poor diets, especially in children.

The UK's former Chief Medical Adviser recently published a report highlighting the importance of phasing out the advertisement of unhealthy foods and drinks at all major public venues. Controversially, this involved a proposal for banning eating and drinking on urban public transport. Another report noted that fruit drinks and flavored waters that contain added sugars or low-calorie sweeteners and are aimed at children are often marketed as deceptively healthy, with labels carrying images of fruit, for example.

Eating too much saturated fat, sugar and salt, and not enough fiber are key contributors to the prevalence of chronic diseases such as obesity, heart disease, stroke, cancer and diabetes in Europe. Product innovation and reformulation of foods are key strategies to improve the nutritional balance of the food supply. At EU-level, Member States and stakeholders are already working towards specific reformulation goals. The JRC highlight how the study shows that efforts at scale are needed and repeating this analysis over the coming years could help monitor the necessary progress to achieve gains for public health. For example, while the UK Soft Drink Industry Levy (SDIL) saw sugar in soft drinks fall by 29 percent from 2015 to 2018, the food industry is lagging far behind with an average reduction of just 2.9 percent. However, the Scottish government is moving to become one of the first nations to propose national restrictions to limit the promotion and marketing of food and drinks high in fat, sugar or salt. A recent study found that a 20 percent "snack tax" on high sugar snacks could reduce energy intake, body mass index (BMI) and the prevalence of obesity.

By Katherine Durrell

Consumer watchdog questions herbal supplements' efficacy, AHPA flags analysis as "arbitrary"

31 Oct 2019
Nutrition Insight

A Consumer Reports (CR) analysis of 29 herbal supplements available in the US market has found some lead levels that exceed its strict threshold, while others exceeded the US Pharmacopeia's (USP) standards for aerobic bacteria.

The CR analysis tested 16 echinacea and 13 turmeric herbal supplements in pill form in a bid to "better understand what's inside herbal supplements" and determine their purity and potency. However, the American Herbal Products Association (AHPA) has hit back, saying the watchdog relied on "arbitrary or internal" standards for its analysis. AHPA also says that the Consumer Reports analysis seeks "to support its preconceived view of herbal supplements, expressed by repeating in today's article the false myth of 'lack of regulation' of dietary supplements."

In 2018, echinacea and turmeric were listed as the second and third most popular botanical supplements (after horehound, an ingredient in Ricola cough drops) in the annual market report from the American Botanical Council, a nonprofit group that supports herbal medicine. Echinacea is sold on its own and it's also an ingredient in Airborne, an herbal blend that is claimed to fight colds, says CR. In addition, between 2017 and 2018, sales of turmeric grew 30.5 percent, the organization continues. CR decided to put samples of the two widely-used ingredients to the test to determine their potency and purity.


Image © iStock.com/Pat_Hastings

The consumer watchdog says that a "lack of regulation" surrounding dietary supplements has allowed companies to use a wide variety of standards, including their own. Its scientists selected the testing methods and thresholds used in CR's evaluations. "The results are meant to help consumers compare their options and are not indicators of a product's compliance with any given standard," the organization notes.

Lead: None of the products tested exceeded the lead standards set by US Pharmacopeia (USP), but seven had lead levels that exceeded CR's stricter threshold. "No amount of lead is acceptable," comments James E. Rogers, Ph.D., Director of Food Safety Research and Testing at CR.

Bacteria: None of the products tested contained E. coli or salmonella, but some significantly exceeded the USP standards for aerobic bacteria. Higher aerobic bacteria levels don't necessarily make a supplement unsafe to take, but they can indicate that products were manufactured or processed in unsanitary conditions, the CR says. However, there is no evidence to suggest this is the case with the tested supplements.

Key active compounds: Several products that CR tested didn't contain sufficient amounts of phenols and curcuminoids, making their claims unsubstantiated, according to the organization. Many products, however, did meet CR's criteria and did not exceed limits for heavy metals, such as lead, or for bacteria. "That doesn't mean that they're safe or effective; it indicates that our tests showed that they are what they're claimed to be and don't have the contaminants we tested for," the watchdog says.

AHPA responds

AHPA has assessed the article and found that CR relied on arbitrary or internal standards for its analysis, apparently in order to support its preconceived view of herbal supplements. AHPA also notes that compliance with label claims is a key element of the US Food and Drug Administration's (FDA's) robust regulation of dietary supplements.

In response to CR's stance on lead, bacteria and key active compounds levels in the supplements, the association notes that companies are obligated to comply with FDA's stringent labeling rules to ensure that what is on the label is also in the bottle. However, they are not required to meet arbitrary expectations for what CR thinks should be in the bottle. "The reductionist focus by CR on one specific compound ignores that herbs are complex mixtures of numerous natural constituents and are often valued for more than a single such compound," the AHPA statement reads. Lastly, the association noted that while it appreciates the guidance from CR, the watchdog is biased and unwilling to consider experienced input in the matter.

Edited by Kristiana Lalou

Researcher calls for stricter plant-based definition amid conflicting European perceptions

30 Oct 2019 Nutrition Insight

Millennial consumers in European countries have wildly different perceptions toward foods marketed as being part of a plant-based diet (PBD), although many people find the term more appealing than diets that are vegetarian (VTD) or vegan (VND).

This is according to a study that explored consumer awareness, knowledge and attitudes toward PBD in Belgium, Denmark, the Netherlands and Spain. The researchers are now highlighting that the concept of a PBD is promising for future health promotion initiatives in Europe, with a special focus on the provision of adequate information. They also highlight that a stricter definition of PBD is necessary. "In the minds of some consumers, PBD can be anything from vegan to the flexitarian type of omnivore. It seems that from an industrial perspective, PBD reflects the absence of ingredients of animal origin in the formulation of their products. This shows that in terms of definition, there is still some way to go," Dr. Federico J. A. Perez-Cueto, Associate Professor of Food Design & Consumer Behavior at the University of Copenhagen and co-author of this study, tells NutritionInsight.

Within the study, PBD is defined as consisting predominantly of foods from plant origin, while still containing limited amounts of animal-based foods. Meanwhile, VTD is marked by a general avoidance of meat. The researchers note that the diet refers to a wide variety in dietary patterns and can be specified by the presence or absence of fish, dairy products or egg consumption. This is in contrast to VND, which avoids all animal-based products in diet and lifestyle.

There were 438 participants aged 18-30 who completed an online survey. The group was predominantly female, omnivorous and highly educated. "We wanted to have young adults' perspectives as they are the ones shaping current demand for innovation in plant-based foods. With this consideration, we designed the study as the first step for other similar studies covering more countries," notes Perez-Cueto.

One of the questions that participants responded to asked whether they agreed that PBD was equivalent to VTD or VND. Of the Danish participants, 42 percent considered PBD to be equivalent to VTD. Meanwhile, just 31 percent of Belgians, 28 percent of Dutch and 24 percent of Spanish respondents agreed. Around half of Belgian and Spanish respondents perceived PBD to be equivalent to VND, in comparison to 71 percent of Danes and 78 percent of Dutch people.


Image © iStock.com/SIphotography

A more appealing term?

While over half of Belgian and Dutch participants considered PBD to be more appealing than VND, this was true for only 35 percent of Danish and 34 percent of Spanish participants. In all four countries, a minority considered the term PBD to be more appealing than VTD. However, almost half of Danish and Spanish respondents neither agree nor disagree in perceiving PBD more appealing than VTD and VND. "It is likely that PBD is seen in a positive light because the term embraces health, sustainability and animal welfare, which are the three most important consumer drivers. Additionally, it provides a hint of good taste, which is the key to market success," explains Perez-Cueto.

While he doesn't believe that there is a fatigue of VTD and VND as terms, he notes that it would be interesting to follow the social media discourses to better understand the need (or lack thereof) for the PBD term. "VGN and VTD are consolidated concepts, and use them where they are well established, like in Belgium and the Netherlands, while PBD could be a promising strategy in other countries like Denmark and Spain."

Differing awareness

In all countries, PBD was less well-known than VTD and VND. However, this difference was much larger in Spain, where only 38 percent of participants were aware of PBD in comparison to Belgium (55 percent), Netherlands (69 percent) and Denmark (83 percent). The countries were chosen to create a snapshot of what is happening in Western EU regions. "It is not a census, so we cannot generalize the results to all of Europe. Country differences could be explained to an extent. For example, in Belgium, they have implemented DonderdagVeggiedag (Thursday vegetarian day) for more than ten years now, so people are more aware of plant-based options, and have practiced eating 'delicious vegetables,'" explains Perez-Cueto.

Also, Belgium has been a pioneer in the production of plant-based dairy alternatives such as Alpro and Provamel. In Southern Europe, the main concept is the Mediterranean diet, which is largely plant-based. However, it seems that consumers in Spain are more indifferent to the terms vegan, vegetarian or plant-based. "Some of the findings were indeed a bit surprising. Initially, we thought that young consumers would appreciate equally the term plant-based throughout Europe, so, these country differences were unexpected," says Perez-Cueto.

Dietary recommendations point toward the need for more plant-based consumption, including a new report that shows plant-based diets are not only tied to health, but also lower environmental impacts. The findings further underline the EAT-Lancet commission's report on a diet within planetary boundaries. "Therefore, plant-based consumption would deliver for healthier living and for a more sustainable and responsible system of consumption and production. It would also help improve the living conditions of animals in industrial production facilities," Perez-Cueto adds.

Future health promotion should also focus on the point that eating 100 percent plant-based is delicious. It is also nutritionally sufficient to live a healthy life, while being consumer-friendly, he concludes.

By Katherine Durrell

New labeling requirements: FDA grants six-month extension to nutrition and supplement manufacturers

28 Oct 2019
Nutrition Insight

During the first six months following the general January 1, 2020-compliance date for new nutrition labeling regulations of conventional foods and dietary supplements, the US Food and Drug Administration (FDA) will be cooperating with manufacturers to meet the new labeling requirements.

The FDA is postponing enforcement actions as a response to the multiple requests from manufacturers and industry groups to receive additional time to comply with the new requirements. These changes include different titles of nutrients, updated calculations and amended measuring units for selected dietary ingredients.

"For dietary supplements, the revisions mostly affect products that provide significant levels of dietary ingredients with Reference Daily Intake (RDI) values or Daily Reference Values (DRV), such as vitamins, or macronutrients such as fat, sugar and cholesterol," says American Herbal Products Association (AHPA) President Michael McGuffin, commenting on the regulations' changes.

"Since herbal supplements often do not provide significant amounts of these, many products may not see many changes in nutrition labeling compared to the old regulations. However, herbal supplement manufacturers should be aware of coming changes and ensure that their products' Supplement Facts boxes are compliant," he adds.


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Multiple Traffic Lights

Reference Intakes

Warning symbol

Nutri-Score

Health Star Rating system

The revisions are intended to reflect the changes in science and dietary habits that have occurred since the nutrition labeling regulations were first established in 1999. The compliance dates for the requirements without the extension period are January 1, 2020 for manufacturers with US$10 million or more in annual sales and January 1, 2021 for manufacturers with less than US$10 million in annual food sales.

AHPA has published a free guidance document to help companies navigate the new labeling requirements.
Some of these changes include:
• Vitamin D, potassium and added sugars are now “mandatory nutrients” required to be declared when present in significant amounts.
• Vitamin A and vitamin C are no longer “mandatory nutrients.”
• Differentiation between “added sugars” (for example from acidulants and flavors) and naturally-occurring sugars.
• Differentiation between folic acid and naturally-occurring folate.
• Reference values used to calculate the percent Daily Value (DV) for declaration on the Supplement Facts box were updated for most dietary ingredients with established DVs.
• Change in units of measure for a few dietary ingredients, such as vitamin A, folate, vitamin D and vitamin E.

In late September, 13 trade associations wrote a letter to appeal to the FDA to provide the necessary flexibility in its enforcement of the new nutrition labeling rules. The letter indicated that extra time to implement the new changes is needed due to the magnitude of the task of revising all labels, the difficulty of predicting label inventory levels and the high cost and environmental impact of disposing of existing label inventory. Moreover, the continued use of existing labels for a short period following the compliance date would not present a risk of misleading consumers, states the letter.
Besides asking for a time period extension, the letter also requested the FDA to provide enforcement discretion to companies that have not labeled its products by the compliance date but can demonstrate good-faith efforts to bring their full portfolio of labels into compliance by January 1, 2020.

Nutri-Score was the easiest FoPL to understand out of five varieties.

Labeling in the spotlight
Science-backed facts found on food labels are of paramount importance to ensure consumers can make informed, healthy purchasing decisions. The FDA, for example, has previously implemented labeling differentiation between “nutrition” and “supplement” facts to ensure responsible supplement manufacturers and suppliers will promote product transparency.

Moreover, a study found that the FDA’s impending mandatory added sugar labeling policy for packaged foods and beverages – set to take effect between 2020 and 2021 – could prevent or postpone nearly 1 million cases of cardiometabolic disease, including heart disease, stroke and Type 2 diabetes, over a 20 year period.
Outside of the US, the traffic light resembling Nutri-Score labeling system has been called the most effective style of front-of-pack labeling (FoPL) to help consumers rank products according to their nutritional quality. Spanish supermarket chain Eroski became the first European store to introduce the Nutri-Score system, doing so on a handful of its own-brand products in January. France and Belgium also use the labeling system voluntarily in an attempt to uniform the nutritional labeling system in Europe.
By Anni Schleicher

Keeping food safe: How new technology is ensuring food safety and authenticity in Asia Pacific

By Pearly Neo 26-Sep-2019 –Food Navigator Asia

Foodborne contamination and illnesses have always been a top-of-mind issue for the Asia Pacific food and beverage industry, especially with the number of such incidents on the rise within the region.


Image © iStock.com/Kondor83

That's why this edition of Asia's Food Future: Industry 4.0 takes a look at the role that new technology can play to keep food safe.

Data from market research agency Markets and Markets revealed that the global food safety testing market (which covers both tools and technology) was worth some US$17bn in 2018, and is expected to grow at a CAGR of 7.7% to hit US$24bn by 2023."This growth will be driven by an increased need for testing, more demand for packaged foods, globalisation in food trade, an increase in foodborne disease outbreaks and more contamination incidents," said the report.

Technology is one of the World Health Organisation's major priorities when it comes to addressing food safety, and these are expected to deliver 'significant impact' by 2030 if properly scaled. According to food and nutrition consultant Dr Tan SzeSze, food safety is in itself a scientific discipline, and covers 'the various approaches to handle, prepare and store food in a way to prevent, reduce or eliminate the risk of food borne illnesses' . "Based on my experience working with Asian food regulators and manufacturers, the [most] serious food safety issues are faced by the meat and seafood sector as well as the prepackaged food sector," Dr Tan told FoodNavigator-Asia . "The rise in demand of meat, fish and seafood in Asia has led to the excessive use of veterinary drugs, growth hormone, antibiotics and even illegal chemicals in the final products. These food safety issues are further aggravated by the lack of cold chain, food safety experts and testing infrastructure in many Asian countries, leading to the use of hazardous chemicals such as formalin to prolong the shelf life of fishery products."

As for food additives, she said that these are widely applied by food manufacturing and food service industries, and more and more new and novel types are 'introduced to the market each day'. "The long term health effect of these food new additives are yet to be determined, [and] many users do not realise that their usage must be carefully controlled to ensure consumers' health is not jeopardized," she said. As a result of the rising affluence in Asian society, the consumption of prepacked foods and dining out have also increased, which Dr Tan added would 'directly increase the amount and types of food additives' consumed. Food safety tools and technology There are a variety of tools in the market today that cater specifically to food safety applications, from on-pack indicators for temperature and gas detection, to point-of-care devices that detect actual contamination. A popular type of point-of-care device is the scanner and its related technologies, which are particularly important in the primary production of food.

One example of such a scanning technology is New Zealand-based company Veritide, which specialises in optical scanning techniques to pick up bacterial and faecal contamination, particularly in meat. "Traditionally, contamination detection was performed visually by inspectors, but the problem with that, especially considering the speed at which production takes place these days, is that it is very difficult to actually see and spot contamination," Veritide Executive Director Gerard Kilpatrick told FoodNavigator-Asia. "Our handheld scanner is based on technology that allows us to pick up chlorophyll from faecal matter - as the meat is scanned with the fluorescent light, the scanner will react by vibrating and lighting up to indicate the detection of chlorophyll and alert the user of possible contamination. This applies for both visible and invisible contamination – during the processing of meat, a lot of water is used for cleaning, and quite often a lot of the contamination has been watered down and diluted and cannot be seen by the inspector, but our scanner can still pick this up."

Kilpatrick added that the major benefits of such a technology are most prominent when it comes to the cost and time saved. "In many places, either a lot of water or an acid wash is used, or the meat is put through a blast furnace to try and remove contamination – this is very expensive and time-consuming," he said. "With this technology, you get an instant result and there is no longer any need to wait many hours for swab results to come back from the lab as to whether or not there is contamination. You know the results at line speed on the spot."

Particularly for the Asia Pacific region, Veritide is also looking to further develop their technology to apply to pork and poultry in addition to the current beef and sheep meat, as these two meat sources are 'very substantial' to the region. "There's not a lot of chlorophyll in the pork and poultry diets, as they don't need much green plant-based foods, but we're working on a solution for this, and hoping to have a solution within six months or so," said Kilpatrick.

The importance of authenticity for safety

In addition to tools and technology specifically configured for food safety purposes, other types of technology that can bring proof of authenticity, such as traceability and platforms/databases carrying comprehensive information, are also gaining in importance within the food safety area. "Authenticity is a key topic [of discussion] in Asia when it comes to alcohol and is frequently in the news, for example earlier this year when more than 10 people died due to the consumption of fake alcohol," beverage technology (BevTech) company Omniaz CEO and Founder Lukasz Piotrowski told us. Omniaz has developed an alcoholic beverage platform termed DRNK, which not only provides both B2B and B2C users with information covering some 500,000 alcoholic brands within their database, but also looks to provide confidence in the products' authenticity.

"Alcohol definitely is an area where there needs to be more focus, more protection and more custom-made solutions to curb safety concerns] for consumers such that they do not worry about waking up the next day after consumption and needing to go to the emergency room," he said. "DRNK wants to provide a comprehensive solution, including a means of authenticating the bottles, bring a certain level of security for consumers, as well as give the producers a level of guarantee so they can protect their brand."

Asia's major food safety challenges

For food manufacturers in Asia, varying regulatory challenges also need to be closely considered when making any changes for food safety, which can in itself be a major challenge, according to Thermo Fisher Scientific Asia Pacific Vice President Commercial Operations, Chromatography & Mass Spectrometry Ian Smith. "Domestic regulations such as China's GB standards can be different from international standards such as the European Union's General Food Law Regulation or the United States' Food and Drug Administration (FDA) rules and regulations," he told us.

In addition, there are various external factors that also need to be tackled including the environment, authenticity and integrity, which he described as 'inextricably interlinked in a lot of ways'. "For example, at the agricultural level, although pesticides are used to protect the world's crops, their presence beyond pre-defined safety limits could pose health risks to consumers and must be closely monitored," he said. "Governments in Asia are taking pesticides seriously. Take China for instance, the Ministry of Agriculture and Rural Affairs (MoARA) is striving to develop more maximum residue limits (MRL) for pesticides in food as well as testing methods."

As a result of this, Thermo Fisher is emphasising technological solutions surrounding informatics e.g. its Lab Information Management Systems (LIMS); and enterprise solutions e.g. the Thermo Scientific Chromeleon Chromatography Data System "These work to ensure traceability as well as to store, manage and access the vast amounts of data associated with food safety testing," he said. Smith added that over the next 18 to 24 months, food safety concerns surrounding pesticides are expected to take centre stage as a result of these initiatives by China, as well as its updates to the National Food Safety Standard in early 2020. "Transparency and traceability are also key trends in food safety as Asia's consumers take interest in issues about the environment, food authenticity and integrity. Food packaging and storage will also be of concern as consumers and businesses look towards plastic alternatives that are 'food-friendly'," he added.

Reformulation in India: Good taste and clear nutrition labelling found to be key factors for success

By Pearly Neo 05-Sep-2019 – Food Navigator Asia

Keeping products tasty and providing clear nutrition labelling have been found to be key factors influencing consumer appeal when it comes to food and beverage reformulation in India, a new report has found.

According to the Healthier Product Reformulation in India report released by IGD and Food Industry Asia today, 83% of consumers reported that they would be 'happy if the product recipes are changed to make them healthier, provided they are still as tasty'. "Taste is one of the factors that can hinder consumer acceptance, as it remains one of the top considerations when buying products," FIA Policy Director Steven Bartholomeusz told FoodNavigator-Asia. "Hence, it is crucial that companies maintain existing flavour profiles while improving the nutritional quality of their food and beverage portfolios."


Image © iStock.com/Ridofranz

81% of food companies 'should tweak their recipes to make products healthier'. "According to this research, 69% of companies (participating in the study) have been working to reformulate their products. This includes reformulating existing products to reduce artificial colours, flavours and preservatives, removing saturated fat and fortifying products with fibre, protein and vitamins, which are all aligned with the country's nutrition strategy," said Bartholomeusz.

In addition, nutritional labelling was also identified as a key factor driving consumer appeal - 81% of consumers said that the 'clear display of nutritional information on pack' was an important element to them when choosing to purchase food and grocery items. "Nutrition plays a particularly important role in how Indian consumers choose products," said the report authors. "97% claim to look at nutrition information on pack at least some of the time and 63% claim to look regularly." The importance of nutritional labelling was also found to be more important to Indian consumers (63%) as compared to those in Singapore (42%) as a whole, possibly due to the higher risk of food adulteration and fraud in the country especially for items such as dairy, alcohol, oil and more.

Reasons for reformulation
Health reasons are a major factor driving reformulation in India, which 'faces a double burden of malnutrition with high rates of undernutrition coexisting alongside increasing rates of obesity and NCDs'. "India represents 40% of the world's diabetes burden, affecting 72 million in 2017 and an estimated 98 million may be diagnosed with Type 2 diabetes by 2030, whereas an estimated 135 million are affected by obesity in India, [with some] 20% of the adult population were classified as overweight or obese in 2016," said the report. As such, F&B companies have noticeably altered the direction of their reformulation efforts over the last five years, from fortification towards the removal/reduction of artificial additives, saturated fats, allergens and sugar content.

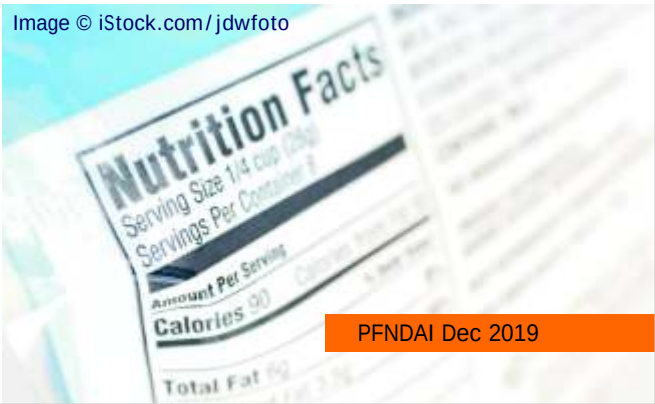
"Companies are [also] committed to adding fibre and wholegrain in their product offerings, which may not be a top nutrition priority to consumers but is strongly recommended by nutrition experts," said the authors. Public health concerns aside, government regulations were also seen to play an important role, with 62% of all surveyed companies saying that their 'main motivation' for reformulation was to 'respond to government regulations' . That said, 68% of companies were 'concerned' about the 'lack of clear national nutrition targets/guidelines' in the country, and 46% felt that existing national nutrition targets were 'unrealistic' .

"Currently there is more of a voluntary approach to reformulation. The government is considering a more formal approach which is required to get the whole industry moving. Uniform policy is what we need," stated the report. India's primary food safety and regulatory agency is the Food Safety and Standards Authority of India (FSSAI), which has been known to propose and initiate many food-related policies but delayed the enforcement of many of these after industry stakeholders voiced complaints.

Challenges to reformulation
In addition, consumer acceptability and budget limitations were found to be major hurdles for reformulation in the country as well. "Consumer acceptance to reformulate products is a challenge across all the markets where this research was conducted," said Bartholomeusz. According to company feedback in the report: "The issue with asking consumers what they want when it comes to health is the discrepancy between claimed and actual behaviour. They say they want low sugar and low salt but in reality they don't want to compromise."

"There is a serious issue of high blood pressure in India. Salt intakes are as high as 14-15g/day so the Indian palate is accustomed to food products that are high in salt. This makes salt reduction challenging." India is also considered a 'price-sensitive' market, so if reformulation results in any sort of increased costs, companies found consumer acceptance to this to be 'low'. As for whether high rates of adulteration in the country could pose a challenge to reformulation, Bartholomeusz said: "Distrust of reformulated foods and the stigma of adulteration are sometimes cited as reasons for rejection from consumers, but our research has shown that they did not constitute major barriers in the Indian market. In fact, meeting consumer demand was cited as one of the top five motivators for reformulation as there is strong commercial incentive for companies to provide healthier products."

He added that increased government support would also 'go a long way' in terms of accelerating the industry's progress. "73% of companies said that with more fiscal incentives from the government, they would be encouraged to conduct more R&D associated with reformulation. This is particularly relevant to the local market, as 90% of the companies conduct their R&D efforts in India and for a lot of smaller players, costs of reformulation and technical knowledge can be a barrier."



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B/ 816, Lodha Supremus II, Road No. 22,
Wagle Estate, Thane (W) Maharashtra- 400604
Tel: 022 40243817-21
Email: rohit.raut@jrsindia.com
meeta.raheja@jrsindia.com