

**INSIDE** Bakery & snacks  
Free-from foods  
Insight: NPD  
Paper-based packaging

foodanddrinktechnology.com  
JUNE 2020



# Rising trends

## Assessing market and sectoral developments





# Picking The Right Solution For Your Total Packaging Automation

[www.ampautomation.co.uk](http://www.ampautomation.co.uk)  
[sales@ampautomation.co.uk](mailto:sales@ampautomation.co.uk)  
+44 1427 611 969

AMP Automation  
Sommerby Way, Gainsborough  
Lincolnshire, DN21 1QT, England

# CONTENTS

FOOD & DRINK TECHNOLOGY –  
JUNE 2020 – VOLUME 19, NO.9

## Bakery trends: a multi-phased approach

The bakery category runs the gamut from the wholesome to the indulgent. But there are some trends running across all segments like the desire for fresh products, avoidance of gluten and a general desire for healthy nutritious foods.

## REGULARS

- 6 The month
- 8 Euro News
- 10 On the move



42 60-Second Interview...  
Nimisha Raja,  
founder and CEO  
Nim's Fruit Crisps

## TRENDING

- 12 **Coronavirus and private label**  
*F&DT* explores how businesses have responded and what the future holds for private-label
- 14 **Hitting the sweet spot**  
The appetite for bakery products requires a multitude of offerings as consumers tweak their eating habits to suit their lifestyles

## INSIGHT

- 30 **Trials prove the worth of freeze dried ingredients**  
Nicola Trafford, R&D lead at European Freeze Dry, looks at some of the current work bringing new types of products to market.

## FEATURES

### BAKERY & SNACKS

- 16 **The advantageous applications of pasteurisation in baked goods**  
Thermal pasteurisation systems continue to improve, giving food and beverage processors a uni-verse of alternative treatments

- 18 **Upcoming EU legislation on 3-MCPDe: Are you ready?**  
Bunge Loders Croklaan explains why it has strengthened mitigation of 3-MCPDe in its oils portfolio

- 20 **Ensuring a rise**  
Stephanie Hardtmann, head of bakery innovation center, Buhler and Sylvia Murgueito-Purschke, bakery training and technology specialist, Buhler discuss the processes, equipment and services on offer for bakery operations

- 22 **What's making taste buds tingle**  
Jacqui Passmore, marketing manager UK and Ireland at Dawn Foods looks at the importance of flavour and texture in bakery taste trends



- 24 **Made for snack inspections**  
As Europeans increase their love for snacks, food makers require help to build up their portfolios

### FREE-FROM FOODS

- 26 **What we eat matters**  
Will free-from messaging expand to include climate impact and how will that influence food safety practices? Louise Grinyer, food safety and microbiology consultant at Leatherhead Research discusses



- 28 **A closer look at gluten-free in 2020**  
How does gluten work? And what can be done to prevent cross-contamination in production?

### FUNCTIONAL FOODS

- 32 **The potential of porcine collagen**  
What is it and what is it good for? Pauline Huang, product and branding manager, Rousselot Health and Nutrition provides an overview for it in food, beverages and supplements



### PACKAGING

- 34 **Now and paper**  
Paper battery offers potential cheap smart applications for food and drink packaging, writes Brenda Dionisi

### PLANT SERVICES

- 36 **Ask the expert how specialty lubricants handle today's challenges**  
Marius Czech, Kluber Lubrication's food market manager, explains how specialty lubricants handle the challenges of processing operations

### SUSTAINABILITY

- 38 **Generating power from waste**  
An ingredients supplier achieves energy milestone

### CLASSIFIED

- 39 **Supplier's Guide**



**Corbion**  
*Keep creating*

# Let's create the perfect candy!

Creating confectionery perfection means getting a lot of things right, all at the same time: ideal sourness and texture, long-lasting flavor, stability in hot and humid export climates, the desired nutrient content and more. That can be tricky; tweaking one factor can compromise another.

Whatever your confectionery application, Corbion has the formulation expertise and biobased ingredient solutions to help you bring it all together in perfect alignment.

Learn more at  
[corbion.com/confectionery](https://corbion.com/confectionery)



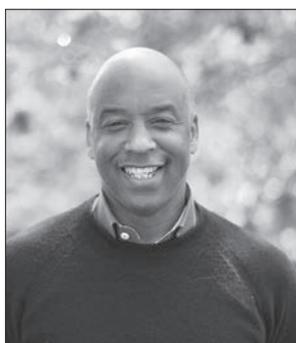
We can help you make the perfect candy



[corbion.com/confectionery](https://corbion.com/confectionery)



[food@corbion.com](mailto:food@corbion.com)



# Commission's strategy puts a fork in the ground

EDITORIAL DIRECTOR  
Sarah McRitchie  
sarah@bellpublishing.com

EDITOR  
Rodney Jack  
rodney@bellpublishing.com

DIGITAL EDITOR  
Alex Rivers  
arivers@bellpublishing.com

ART EDITOR  
Sue Burke  
prepress@bellpublishing.com

SALES MANAGER  
Katie Healy  
katie@bellpublishing.com

GROUP SALES MANAGER  
Mark Neilson  
mark@bellpublishing.com

ACCOUNTS  
Yee Yau  
accounts@bellpublishing.com

PUBLISHER  
Neil McRitchie  
neil@bellpublishing.com

EDITORIAL & SALES OFFICE  
The Maltings, 57 Bath Street,  
Gravesend Kent DA11 0DF, UK  
Tel: +44 1474 532 202  
Fax: +44 1474 532 203

bellpublishing.com  
©Bell Publishing 2020  
Published by: Bell Publishing Ltd.  
No part of this publication may be  
reproduced, stored in a retrieval  
system or transmitted in any form or  
by any means without the prior writ-  
ten permission of Bell Publishing Ltd.

Printed in the UK by Buxton Press  
ISSN 1743-4874



Follow @Bell\_Publishing on Twitter  
or LinkedIn for regular snapshots  
from all of our magazines.

**H**ow do we feed our cities? It is one of the great questions of our time. There is increasing urbanisation, the negative effects we are placing on the climate and the challenge of finding the best infrastructure to support diets.

After a two-month delay, the EU Commission unveiled its Farm to Fork and Biodiversity strategy. According to the Commission this – an "agenda for all stages of food production" – is as comprehensive as it gets. What's explicit is the need for countries to shift to a "more plant-based diet" for environmental and health reasons.

Expected though some of these ideas were, the final proposals have received a very mixed reaction. 'Token gestures' appears to be the views of those behind plant-based products, who feel regulatory barriers are still in place to halt their growth. This can't be what the Commission was hoping for after all the man-hours spent putting the strategy together.

The Covid-19 pandemic is changing minds. Professor Christian Bugge Henriksen, a climate and food security expert at the University of Copenhagen in Denmark, thinks it may provide added impetus for authorities to rethink food supply chains. As we are learning, it not clear how long current supply chains will last in any future pandemic. At the very least, change is in the air when it comes to food systems.

The Commission's strategy is a start. The time is ripe to transform the food system.

## Weekly newsletter

Food & Drink Technology has changed email providers for our newsletters. If you are already subscribed, you do not have to do anything, but please be aware that your weekly email updates will be from the following email address: newsletters@bellpublishing.com My name will still be at the top. If you have not received our most recent newsletter, please first check your junk folder. If for any reason you do not receive the newsletters you've signed up to, please email arivers@bellpublishing.com

## Don't forget

We have opened up content on the Food & Drink Technology website to allow the industry to keep abreast of the latest developments during the pandemic. The latest digital edition is free to read at [foodanddrinktechnology.com](http://foodanddrinktechnology.com)

**Rodney Jack, Editor,  
Food & Drink Technology**

## SUBSCRIPTIONS

Includes 10 issues delivered direct to any address worldwide, full website access to Library Archive, digital magazine in PDF or interactive format, and weekly newsletter. Prices £100 UK, £112 Europe, \$144 Rest of world



[foodanddrinktechnology.com/subscribe](http://foodanddrinktechnology.com/subscribe)

## Editorial Advisory Board

**Steve Osborn**  
Principal Consultant,  
The Aurora Ceres Partnership

**Tim Rycroft**  
Corporate Affairs Director,  
Food and Drink Federation (FDF)

**Jon Poole** Chief Executive,  
Institute of Food Science &  
Technology (IFST)

**Dr Steven Walker**  
Director General, Campden BRI

**Fiona Kibby**  
Director, Society of Food Hygiene  
and Technology (SOFHT)

**Professor Lisa Jack** Co-ordinator,  
Food Fraud Group/Gate to Plate,  
University of Portsmouth

**Richard Ratcliffe**  
Food innovation consultant

# Farm to Fork strategy backs alternative proteins

The European Commission is supporting a shift to plant-based diets in its new Farm to Fork Strategy.

The Farm to Fork Strategy aims to achieve a “fair, healthy and environmentally-friendly food system” and is an important component of the European Green Deal. The deal seeks to make Europe climate-neutral by 2050, improve people’s well-being and to protect the natural habitat. The new strategy cites the impact of food on the climate, reducing obesity rates and cancer prevention as key health reasons why it is necessary for the public to shift to a more plant-based diet.

The Farm to Fork Strategy proposes that €10 billion (\$1bn) of funds (a dedicated €100bn (\$109bn from 2021 to 2027) be used for research in sustainable food sources, including, in part, meat substitutes and other plant-

based proteins.

The strategy laid out a commitment to “help reduce the environmental and climate impact of animal production”. It said there will be a review of the EU promotion programme for agricultural products with a view to enhancing its contribution to sustainable production and consumption in line with the political priorities of the Commission.

The strategy also said it will strictly assess any proposal for coupled support in member states’ Strategic Plans from the perspective of the need for overall sustainability. There is also a strong emphasis on alternative food and feedstuffs, saying that research will focus on “increasing the availability and source of alternative proteins such as plant, microbial, marine and insect-



based proteins and meat substitutes.”

It also states it will examine EU rules to reduce the dependency on critical feed materials, citing “soya grown on deforested land” as an example.

It will tackle this by “fostering EU-grown plant proteins as well as alternative feed materials”, in which it names insects, marine feedstocks and by-products from the bio-economy.

# Cargill uses technology to improve transparency in supply chain

Cargill has reaffirmed its commitment to a transparent and sustainable supply of cocoa in its latest progress report.

Using a range of measures, which includes improving the lives of farmers in the five origin countries from where it directly sources cocoa, it highlights how Cargill uses technology to connect every dot in the cocoa supply chain.

The highlights of Cargill’s latest efforts and the progress it has made are in the *Cargill Cocoa & Chocolate 2018-2019 Sustainability Progress Report*.

“Maximum transparency in the cocoa sector is critical for making real progress on sustainability. It not only

helps cocoa farmers, their families and communities prosper, but also helps protect our planet. I am confident that working with our partners we can continue to make great strides in achieving a thriving cocoa sector,” said Harold Poelma, president of Cargill Cocoa & Chocolate. Through the Cargill Cocoa Promise, Cargill said it is realising the opportunities offered by technologies, such as mobile money, GPS mapping and digital data collection, which allow for greater transparency on how cocoa is grown and sourced from farmers.

Cargill sees digitisation driving change across the entire cocoa supply chain.

Utilising the valuable information that is collected will inform on how to achieve the best impact on the ground. For this, Cargill has developed a data platform that has more than 300 data points along the supply chain. It will use this data to inform customers through an interactive customer portal about how collaborative sustainability programs are benefiting farmers and their communities.



# NUTRITION GROUP SEES RISE IN VITAMINS

Nutrition Group has created 20 new jobs, invested in faster machinery and increased its working hours to keep up with demand for its immune system-boosting products.

Orders for vitamin C, vitamin D and zinc tablets increased by almost 100 per cent year-on-year in February, with similar rises in March and April. The majority are destined for the UK mail-order and online markets.

Nutrition Group chief executive Richard Greathead said: “As a result of the increase in our order books we have introduced a second shift on our protein bar line. Our tableting and tablet coating operation has been boosted by the acquisition of new, faster machinery and we have introduced extra working hours in the factory to keep up with demand.”



## Defra needs to address guidance, says GMB

The GMB has called on Defra to open a dialogue with food producers and unions to address the “inadequacy of the government guidance” on Covid-19.

The call come after confirmation that three workers at a Cranswick food processing facility in Barnsley, are confirmed to have died after testing positive for coronavirus.

Earlier this month the union wrote to the Secretary of State and major retailers, about potential problems in the supply chain that could lead to unnecessary deaths in the industry.

Eamon O’Hearn, GMB national officer, said of Cranswick: “We really hope that they’ve been following GMB guidance on social distancing, which is significantly more comprehensive than Government guidance recently issued.

“We wrote to the Secretary of State for Defra about our concerns earlier this month, precisely because we wanted to avoid further deaths.

“It’s now crucial that Defra establish a dialogue on the food and drink supply chain, including addressing the inadequacy of the Government Guidance.”

## KHS INVESTS €20 MILLION IN SITE MODERNISATION

The KHS Group has invested €20 million in modernising its headquarters in Germany. In a bundle of measures underway since 2015 the company has

built a huge, approximately 4,300m<sup>2</sup> production shop and fully renovated another. The systems supplier has now created conditions that enable the relevant technology for container and pack conveyors to be merged and order processing to become more efficient. With an investment volume of €6m for this project alone it has incorporated new technology that includes a fiber laser, a combined punching/laser machine and a fully networked sheet metal warehouse.



## BPMA: Post-Brexit trade requires urgent action

The BPMA has raised three priorities with government to help industry remain closely aligned with EU rules as well as minimise trade friction.

Three of the key areas that BPMA members have raised concerns over are groupage, export health certificates and health marks.

“We now have time to establish how groupage consignments containing products of animal origin will be managed from a veterinary certification point of view,” the BPMA wrote in a statement. “As things stand, there is no internal mechanism in place for these types of groupage consignments to continue to function after the end of the transition period. This

is something we can address right now as it is largely dependent on the UK’s own internal processes in terms of how vehicles with mixed loads and/or multiple consignee/consignors are handled.

The BPMA has also called for action to press ahead with seeking agreement with the EU on the certification of products for which export health certificates do not currently exist such as fresh meat preparations and fresh minced beef, both of which will only be able to be exported to the EU frozen once the UK no longer has unfettered access to the EU single market. This is also true for the trade in animal by-products which are a vital part of the value chain in the meat sector.

## NEWS IN BRIEF



### Edlong unveils organic flavours

Edlong says food makers can tap into decades of its dairy expertise and booming consumer demand with its line of organic dairy flavours, featuring natural milk, butter, cheese, sweet, masking, and cultured varieties. “From sweet to savoury, this collection sets a new standard for flavor and functional performance in organic dairy flavours,” said Mario Jez, Edlong flavourist and Better For You Strategy team lead.

### Prunes perfect in meat-plant blends

The California Prune Board, which works globally to raise awareness of the sunshine state’s premium prune industry, is keen to highlight prunes as a viable inclusion for manufacturers looking for high quality, plant-based ingredients, which won’t compromise the taste or texture of the meat-plant blend. The nutritional benefits of California Prunes are also a potential lever for consumer buy-in, with just three prunes equivalent to one of the recommended ‘five a day’.

### Last chance to save on energy bills

Red meat processors have a small window of opportunity between now and 28 August to save up to 92% on their energy bills by applying for membership of the British Meat Processors’ Climate Change Levy Scheme. Anyone interested should contact [BPMA@slrconsulting.com](mailto:BPMA@slrconsulting.com) for information and an application pack.

### Bühler continues virtual world

Participation in the Bühler Virtual World has been so successful, Bühler extended the Bühler Virtual World until May 31. Despite it being concluded, you can watch every single expert presentation on demand for free, and explore the in-depth Solution Space to get to know the latest innovations via Bühler’s website.

BY KEITH NUTHALL AND LIZ NEWMARK

## EU spends to help food and drink manufacturers weather Covid-19 crisis

The European Commission has unveiled measures to help food and drink manufacturers and their suppliers cope with the Covid-19 crisis. It has, for instance announced that dairy (skimmed milk powder, butter and cheese), and meat (beef, sheep and goat meat) producers will be paid 'private storage aid' to warehouse such products for between two and six months to reduce current excessive supplies. Also, milk and potato producers have been given the right to cooperate and plan production for six months to ensure supplies fit anticipated demand, when such coordination would usually be banned under European Union (EU) competition laws.



The EU executive has also announced that national governments can subsidise food companies more than is allowed under EU state aid rules. The full list of EU Covid-19 support measures for the EU food and drink industry – [https://ec.europa.eu/info/food-farming-fishes/farming/coronavirus-response\\_en](https://ec.europa.eu/info/food-farming-fishes/farming/coronavirus-response_en)

## Funds raised for olive oil factory

The European Bank for Reconstruction & Development (EBRD) is lending Moroccan Dirham MAD55 million (USD5.5 million) to Morocco olive oil producer Al Dahra, helping it finance the construction of a new olive oil factory in the Fez-Meknes region in northern Morocco, boosting overseas and domestic sales of its 'Oliva' brand.



## EU-Mexico trade deal in final stages

The EU and the Mexican government have agreed the final text of a new trade agreement especially focused on removing existing duties on a wide range of food and drink products sold between these jurisdictions. These range from confectionery to spirits, meat to baked goods, fruit to sugar and more. The deal will now await ratification by both sides before coming into force.

## EC confirms front of pack labelling legislation

EU legislation insisting on front-of-pack nutrition labelling for food and drink products sold in member states will be drafted and proposed, the European Commission has confirmed when launching its long-awaited Farm to Fork Strategy on 20 May.

The Commission added it would launch initiatives to stimulate product reformulation by setting up nutrient profiles to restrict the promotion (via

nutrition or health claims) of foods high in fat, sugar and salt. However, it did not commit to extending mandatory origin indications on certain products, only to consider the idea.

The Commission added it would propose by 2023 legally binding targets on reducing food waste across the EU, set against a baseline set following upcoming EU-wide monitoring of food waste levels.

## WTO and IMF warn against restrictions

The World Trade Organisation (WTO) and the International Monetary Fund (IMF) have called on governments to stop imposing export and other trade restrictions on key food supplies and lift trade barriers imposed in early 2020 because of the Covid-19 crisis. "Food export restrictions multiply rapidly across countries and lead to ever greater uncertainties and price increases," warned a WTO/IMF joint statement.

## Russia opens formula quota

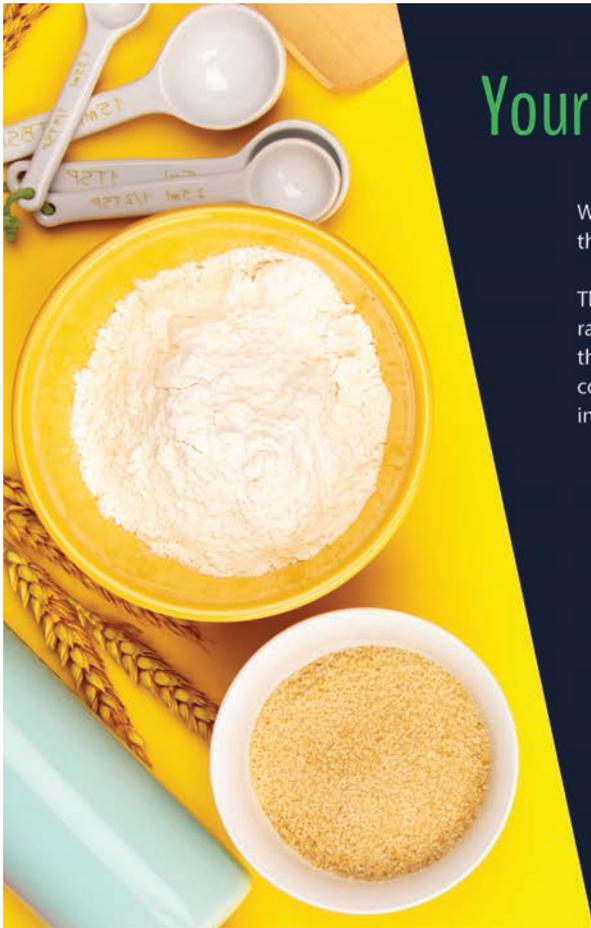
The Russian government has opened an infant formula import quota to shore up essential supplies to cope with the Covid-19 outbreak. The quota applies to European and north American countries whose food exports to Russia have been blocked since 2014 over the diplomatic standoff sparked by Russia's annexation of the Crimea. The European Dairy Association (EDA) thinks Russia will accept 3,000 tonnes of formula this year through the new quota.

## EC publishes report on GI rules

The European Commission has released a detailed report on the growing value of sales of food and drink protected by EU geographical indications (GI) rules, which insist certain food names are restricted to products made in a historic production area using traditional manufacturing and sourcing methods. The study said that the total 2017 sales value of EU GI products was €74.8 bn.

## Committee requests delays to organic regs

The European Parliament's agriculture committee has formally requested that the European Commission delays by one year, from 1 January 2021, to 1 January 2022, the coming into force of the EU's new organic regulation (2018/848). Food companies coping with the Covid-19 crisis have insufficient time to prepare for the new organic rules, argued MEPs.



# Your Ingredients, Perfectly Mixed.

When you need speedy powder induction and dispersion, the **Admix Rotosolver** is your high shear mixing solution.

The Rotosolver provides optimal flow and high shear rates that are unrivaled. Whatever your ingredient, the Rotosolver will mix it faster and better than conventional mixers. Benefits to processors include:

- 100% ingredient dispersion
- Up to 30% energy savings
- Low maintenance, CIP designs
- Drastically reduced batch times



**Rotosolver®**  
High Shear Mixer

See how.

admix.com  
+45 (3213) 8743



 Dairy Ingredients made in Germany



Success needs best ingredients.  
[www.ingredients.uelzena.com](http://www.ingredients.uelzena.com)

## Sweetened condensed milk

Our sweetened condensed milk with various fat contents and dry matter levels is the perfect ingredient for cream caramel bars and chocolate fillings:

- kosher, halal and/or organic quality or also blended with vegetable fat
- clean and pure caramel taste
- great mouthfeel



## Former FDF president joins The Felix Project

Former president of the Food and Drink Federation (FDF) and CEO of Premier Foods, Gavin Darby, has joined food redistribution charity.



The Felix Project as its new chair. Darby's career includes 15 years at Coca-Cola as well as work with large FMCG and Telecom businesses across Europe, US, Africa, India and China. He also served on the Food and Drink Sector council and has held numerous non-executive board positions across food, telecoms, and testing sectors.

## New MD for Ravenwood Packaging

Ravenwood Packaging has appointed Sam Aloschi in the role of Asia/Pacific managing director. Aloschi will manage growth plans in the Asia/Pacific region, supporting the business's linerless and pack inspection distributor network. He brings more than 24 years' experience with a proven track record previously being head of site for retail ready operations and a national retail manufacturing manager.



## New group MD and sales director at Lactalis

Lactalis UK & Ireland has announced the appointment of a new group managing director. Mike Chatters, formerly the company's sales director, will take responsibility for all the Lactalis UK & Ireland businesses from 1 June 2020. Hugues Meaudre, the current group MD will take on a new position as MD of Lactalis AOC France based in Roquefort. In a connected move, Ian Sanger, has been promoted to the role of sales director. Sanger, who joined Lactalis in August 2011, has had a number of commercial roles, latterly as business unit director – retail sales.



## A change in leadership at Volpak

Since March, Alain Zijlstra has taken the lead role in Volpak, after being named as the company's new chief executive officer. Zijlstra, originally from the Netherlands, boasts over 25 years of professional industrial experience globally, of which 10 years have been spent in Spain. In his long international career, he has served as CEO of various industrial companies and has acquired experience in the flexible packaging industry as well. Zijlstra's role will involve building on Volpak's product portfolio and sustainable automated packaging solutions.



## UK Clasado chairman appointed to taskforce

Clasado Biosciences has announced its board chairman, Moncef Slaoui, has been appointed chief advisor to the U.S Taskforce for Covid-19 vaccine development. Slaoui's primary mission as head of the task force will be to determine which vaccines are selected in the accelerated research and development programme that is seeking to manufacture more than one vaccine before trials are fully completed.



## Paul Gurnell appointed as general manager

Purearth has appointed Paul Gurnell as general manager. Gurnell brings almost 20 years of FMCG industry experience, having previously worked at large corporations such as GlaxoSmithKline & Unilever where he held a variety of senior category and sales roles. Most recently Gurnell worked as CEO of Savse, a cold-pressed smoothies brand. The organic water kefir and functional drinks brand wants to unlock the potential of the functional drinks market.



## Brian Sharoff, president of PLMA, passes away



Brian Sharoff, president of the Private Label Manufacturers Association passed away on Saturday 23 May, after a brief illness, according to a statement issued by Tim Simmons, PLMA's vice president, communications. Brian was named president of PLMA in 1981, shortly after the association was founded.

During his tenure the association expanded from headquarters in New York to establish international offices in Amsterdam, The Netherlands, and a representative office in Shanghai, China. Membership increased tremendously as well, growing from two hundred companies in the US to more than 4,500 manufacturers, suppliers and brokers worldwide. Brian Sharoff is survived by his wife Judith, daughter Alexandra, son Peter, five grandchildren, and sister Shirley Sharoff.

## New chairman at Organic Research Centre

The Organic Research Centre (ORC) has announced the appointment of former NFU president, Tim Bennett as the new chair of its Council of Management. Bennett's appointment follows the planned retirement



of long-standing chair, Mike Turnbull, who has spent the past eight years both as a trustee and chair of ORC. Tim brings more than 40 years' experience in the food and farming supply chain. As well as running an organic farm in south Wales, he has served as NFU President, as chairman of Defra's dairy Environmental Task Force and as chair of the Food Standards Agency. Currently, Bennett is the chair of the Centre for Innovation and Excellence in Livestock.



## ETHNIC FERMENTED POWDERS

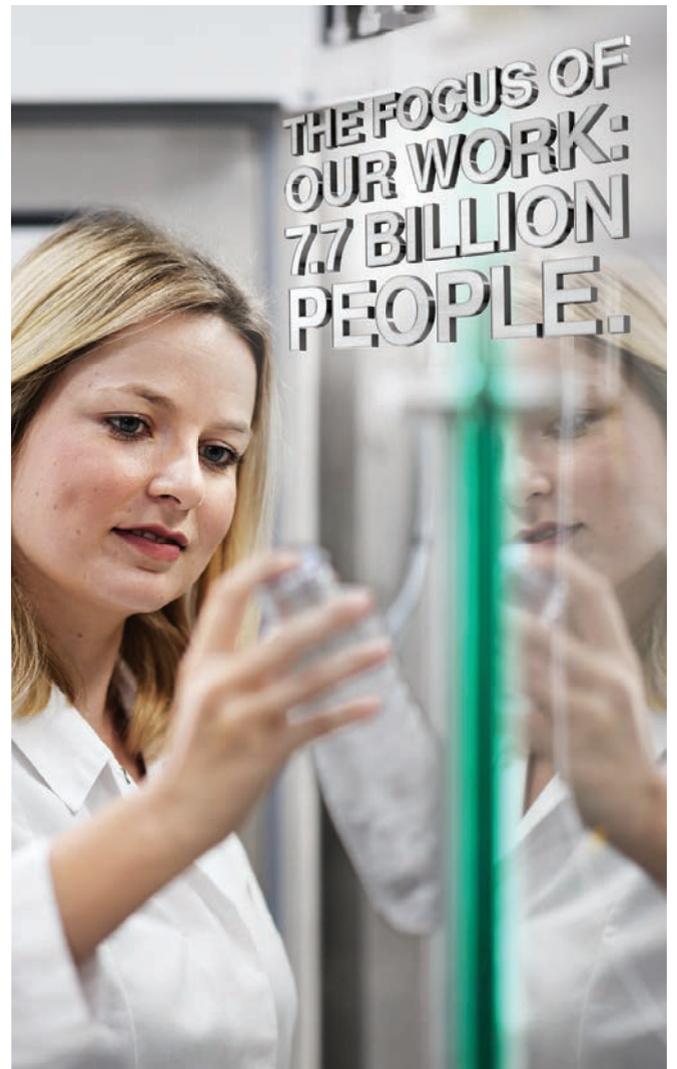
### FULL OF BENEFITS!

epi-ingredients.com



# SYNTEGON

PROCESSING & PACKAGING



## The numbers speak for themselves.

150 years of experience meet newly gained independence. The result is flexibility that will convince you from day one. Of course we remain your reliable partner for the pharmaceutical and food industries worldwide. Bosch Packaging Technology becomes **Syntegon. The new name for processing and packaging technology.**

Syntegon. Formerly Bosch Packaging Technology.  
[syntegon.com/numbers](http://syntegon.com/numbers)



STARCH TRAYS

## INCREASE PRODUCTION EFFICIENCY

- » Expressly designed to integrate with all regular and jumbo-sized moguls
- » Integrates easily with older wood and plastic trays
- » Dimensional stability ensures compatibility with high-speed machines
- » Contoured corners will not trap moisture or residue
- » Unprecedented durability; stacks without sagging or warping
- » Over 70 models offered and custom designs available



PH 814 683.4500  
[www.mfgtray.com](http://www.mfgtray.com)





# Coronavirus and private label

**As companies in the food and beverage industry and beyond continue to feel the impact of Covid-19, F&DT explores how businesses have responded and what the future holds for private-label products**

**P**rivate label is generally faring well across markets globally. As shoppers stocked up with essential items during the coronavirus pandemic, private labels were a big winner.

Yet dealing with the pandemic is causing changes to shopper behaviour. While the significance and duration of this has varied across markets, relatively similar patterns have been seen, with initial surges in demand for grocery staples such as rice, pasta and flour.

Demand in categories such as meat, produce and snacks have also tended to increase, although these have been less extreme, with shortages overcome quickly. This has led to an overall increase in sales for grocery retailers – for many, they have seen private label growth outstrip that of branded products.

What is driving the increased private label share? According to market analysts IGD, the flexibility and agility of private label supply chains means that many retailers have been able to prioritise production of high demand products and rapidly increase supplies, whereas branded manufacturers have not always been able to increase output and are limited in their ability to switch production lines.

Keshia Beadle, senior retail analyst, says: “The pandemic caused availability issues for many products and this led to many shoppers switching brands or purchasing private label products as availability of their usual products was limited. Many shoppers have also widened the selection of stores they visit, in a bid to get the products they need. This has given them access to private label they may not have previously encountered.”

## Long-term growth

While it is difficult to forecast the longer-term effect of the Covid-19 pandemic, it is likely that some of the changes to shopper behaviour will remain. Beadle notes that for those who have tried private label products and found them to be satisfactory or better than expected, they are likely to continue purchasing them if prices provide them with value. This does not necessarily mean the lowest price, but a quality at a price that works for the shopper in relation to the product they are buying.

## Long term lesson for private label

Consultants have advised that coronavirus will require a shift in mindset by manufacturers. McKinsey says there will be an historic shock to the supply chain everyone is used to.

Pascal Kuipers, an FMCG consultant says change is needed to create a resilient supply



chain post corona times, which will be agile and responsive to future crises and disruptions.

"This new supply chain needs to overcome the vulnerabilities of the current version.

Retailers are supplied by myriad private label manufacturers, often SMEs who struggle with demand volatility and logistic frictions," he explains. "Coronavirus showed many parts of the supply chain are China-centric. This has caused unavailability of ingredients, parts or products."

Strategic partnerships with long-term collaborations create trust. Besides this companies need to reduce their risk despite additional loss of cost and efficiency if companies want to create a geographically broader supplier base, Kuipers notes.

He says advisers suggest three key steps.

- Decoupling dependency from a single source of supply by finding alternative routes and pathways to secure supply.
- Mapping the supply chain and creating visibility of the different tiers of suppliers and the logistic routes between them.
- Drawing what-if scenarios in responding to frictions in availability of products and ingredients.

### Expect brands to fight back

Branded manufacturers are already taking steps to try to combat these developments, finds Beadle.

"The level of competition will likely be increased in the future term. This includes improving supply chains and manufacturing capabilities to cope with increased demand," she states.

Some major brands are also working on launching direct to consumer sales. PepsiCo has launched two online stores where shoppers can order products for home delivery. This helps bypass the in-store restrictions that currently exist and keeps products front of mind for consumers. The convenience of this solution may make some of these shopping behaviours stick once the pandemic is over.

The economic climate is also expected to play a role, with a recession expected in many countries and regions. With tighter budgets, shoppers will be looking for ways to save on groceries and good value private label products can be an attractive option.

Mitigating risk will be a key element to future-proof a redesigned supply chain. 

# KANEGRADE



*in touch with nature*

[www.kanegrade.com](http://www.kanegrade.com)

Tel: +44 (0) 1438 742242

Email: [info@kanegrade.com](mailto:info@kanegrade.com)

## NATURAL FOOD INGREDIENTS

# HITTING THE SWEET SPOT



**The appetite for bakery products requires a multitude of offerings as consumers tweak their eating habits to suit their lifestyles in and out of the home**

**A**cross Europe, the bakery market is in a period of maturity and stagnation. While volume growth rates are marginally higher in Eastern European countries, the sector has witnessed only minimal growth from a volume perspective over the period 2019-2024, notes FMCG Gurus. Although snacking occasions are rising across Europe as consumers seek out moments of indulgence, they are also looking for better-for-me products as consumers become more proactive when reducing products that are associated with poor dietary habits.

## Products and motivations

FMCG Gurus consumer insights show that fresh bakery products are consumed all throughout the day as consumers increase their snacking occasions. In Europe, the top product consumed in the morning is cereal. The key motivation for choosing cereal in the morning is to satisfy hunger (63 per cent), however, 30 per cent of consumers across Europe have cereal in the morning as a replacement to a main meal. This highlights that consumers are looking for convenient products to eat in the morning as they may not have time for a main meal.

When it comes to lunch, there are a variety of products consumers choose to snack on. FMCG Gurus' research shows that American

fresh cookies are one of the top five products consumed. One of the key motivations for this choice amongst European consumers is for indulgence and its great taste (28%). This highlights that although consumers are looking for healthier alternatives they are still prone to products that offer great taste which they can indulge in as a snack.

Evening fresh bakery products are dominated by sweet treats. This is often seen, as consumers with busy lives often look for sweet and indulgent products in the evening to help them relax and unwind. Cakes and patisserie are the top product in Europe consumed in the evening. Viennoiserie's are also a popular product in the evening. One of the main motivations for this is that it is high in good ingredients like fiber (27 per cent). Although consumers are prone to sweet indulgent products in the evening they are still a number of consumers looking for products with a nutritional benefit.

## Sweet tooth out of home

Nearly 10 years on from the start of the Great British Bake Off, is British foodservice benefiting from a growing appetite for bakery products as consumers increasingly appreciate the healthier, more adventurous aspect of bakery?

Global information company The NPD Group says the popularity of savoury and sweet bak-



ery in Britain is helping to increase eating out visits in an otherwise sluggish industry. For the wider out-of-home (OOH) or eat-out foodservice market, overall visits were up a meagre +0.3 per cent for year ending (YE) September 2019, and they were down -0.3 per cent the previous year. Britain's eat-out market has the slowest growth of the top five European markets (France, Italy, Spain, Germany and Great Britain).

In contrast, figures from the NPD Group's new Bakery Tracker Service reveal that foodservice visits that specifically include purchases of bakery products have increased three years in a row: up +5.7 per cent YE September 2017, up +3.5 per cent YE September 2018 and up +1.8% YE September 2019. In fact, with a growth of +3.5 per cent to YE September 2019, bakery visits are helping to drive traffic to Britain's beleaguered high streets and shopping centres. Bakery servings increased by +2.5 per cent YE September 2019 to a total of 6.2 billion with bakery now representing over 21 per cent of all OOH servings in Britain. Savoury bakery products are growing slightly faster (year-on-year servings up +2.5 per cent) than sweet bakery (year-on-year servings up +2.2 per cent).

### Savoury for work; sweet for a treat

The NPD Group's Bakery Tracker reveals that the British public has a growing appetite for both savoury and sweet bakery products; with each enjoying clear growth in visits and spend. When people are at work, they think of savoury bakery products, and this accounts for around one in five visits to an outlet selling bakery products. The ongoing dominance of sandwich servings in

the bakery market lies behind such figures, with servings of sandwiches representing two thirds of all savoury bakery servings, and just over half of total bakery servings.

In contrast, sweet bakery items are seen as less of a habit and more as an indulgent pleasure, with purchases motivated by the desire for a treat or when out socialising. And with the foodservice industry bringing endless variety to fillings for sandwiches, baps, wraps, pitta bread, fajitas, pasties and much more, many consumers see bakery products as an opportunity to find a light or healthier meal. Almost 300m visits and £500m of spend are driven by a desire to eat a light or healthier bakery product out-of-home.

### Vegan and artisan bakes among new trends

Vegan bakery is a well-established growth area that seeks to replace butter, milk, eggs and meat with plant-based alternative ingredients such as coconut cream, nuts, pulses, vegetables, fruit, tofu and meat substitutes. Many bakery and coffee shop chains already offer vegan cookies, brownies, cakes, doughnuts, wraps and sausage rolls. In addition, the growing popularity of artisan bread – made using traditional methods and natural ingredients – taps into consumer demand for premiumisation and healthier alternatives.

New concepts and ongoing innovation will ensure bakery continues to thrive, encouraging consumers to increasingly include a bakery product during an eating out visit. NPD's Foodservice Outlook service predicts that while overall eating out visits will struggle to grow (less than +1 per cent growth in visits is expected by YE September 2022), bakery visits could increase by as much as +10 per cent (or +470m visits), led by savoury bakery products (+12 per cent visits), while sweet bakery visits could increase by +8 per cent (+108m visits) by YE September 2022. 



# The advantageous applications of pasteurisation in baked goods

**Thermal pasteurisation systems continue to improve, giving food and beverage processors an expanding universe of alternative treatments that align with changing market demands**

**H**ealth benefits and digestibility remain prominent trends in the sweet baked goods market right now. This has led to an increasing development towards ancient grains and the reduction of refined sugars to combat obesity. With this in mind, alternative processing methods have had to be introduced, especially for cakes and breads where high moisture content is retained. Without stabilisation many of these baked products are liable to yeast and mould growth as well as the risk of pathogenic bacteria.

## SPROUTING

One recent innovative solution supported by Innovate UK and involving Holmach Ltd, Campden BRI and Everfresh Natural Foods, is to use sprout-

ed grains and legumes to make sweet tasting cakes with all-natural ingredients and importantly, no preservatives or refined sugars. This sprouting process, where the ingredients are wetted and developed over several hours, turns the starch into sugar which when used with flour makes a natural sweet dough.

However these sprouted bread and cakes have a higher water content than traditional baked goods, for instance ginger cake is naturally moist and sticky, so they still require a thermal process in the final packaging to ensure the elimination of spoilage bacteria. A simple steaming and cooling autoclave process, to achieve a 6-log reduction, results in an ambient product with an extended shelf-life, whilst retaining flavour and valuable moisture, without spoilage.

## THERMAL PROCESSING

For many years, allergen-friendly and part-baked wheat breads have been available in a pasteurised format but traditional UK exported grains like barley, spelt, oats and rye are increasingly becoming available in this format. Proven to give beneficial functionality to diets and being relatively low-cost ingredients, a mass-market consumer audience has risen.

Another recent application of thermal processing is for high fibre, low-calorie and gluten-free flat-breads that can be used as pizza bases or wraps. Offering a 90% calorie saving compared with a



standard pizza base, the flatbreads are flexible but have no need for preservatives.

## SHELF-LIFE

A challenge for proponents of extending shelf-life is the resistance around the perception of freshness. There is a mind-set that you can cook something for hours in open-cooking systems, add flavouring and preservatives to give 10 days' life and then sell it as fresh. Cooking the same ingredients in a sealed pack for a lot less time and without those preservatives as well as achieving a month to 6-month shelf-life are not seen in the same way, despite the fact that only a short time at 90°C is required to achieve it. Currently the focus seems to be on packaging reformulation and expensive modified atmospheric gasses rather than the simple benefits of gentle cooking!

Given the recent coronavirus impact on millers and bread makers, offering an ability to tackle food shortages, by increasing shelf-life, reduces the reliance on instantaneous capacity being available.

## AUTOCLAVE

One of the advantages of an autoclave over a steam oven process is the ability to apply overpressure to control any stress on the packaging material. Added to this, a cooling process enables com-

plete repeatability, stopping the cook at exactly the same point in the cycle via sophisticated PC control. A batch report, compliant with Defra and the US FDA is generated after each process, simplifying compliance and record keeping for traceability.

Thermally processed puddings and cakes are not a new phenomenon, canned sponge pudding, jelly tubs and microwaveable desserts have used this technology all the way back to the early part of the last century. However, autoclave use has advanced significantly and is now widely applied across the food chain from baby foods to soft poached eggs and cauliflower rice.

The process also benefits from a significant saving in steam and energy for cooling, treading less heavily on resources than traditional steaming and blast cooling technologies. With good validation support and straight forward process calculation, thermal processing is also a 'tried and tested' science.

Everfresh Natural Foods' range of baked goods is just one prime example of an innovative product using natural ingredients and a process to deliver sweetness that does not have to come from refined sugar. A bonus when the field of baked goods are increasingly looking to contribute to tackling both portion sizes and obesity within the population. 



Chris Holland is managing director of Holmach Ltd, which celebrates 46 years in the industry this year. He is a member of the Scientific and Technical Committee at Campden BRI and active within IFST and the Institute for Thermal Processing Specialists (IFTPS).



# Upcoming EU legislation on 3-MCPDe: Are you ready?

The European Commission will place new, stricter maximum limits on 3-MCPDe levels in all vegetable and fish oils incorporated into foodstuffs. Renee Boerefijn, director of innovation for Bunge Lodens Croklaan EMEA, explains to *F&DT* why it has strengthened mitigation of 3-MCPDe in its oils portfolio

In 2021, the European Commission will place new, stricter maximum limits on 3-MCPDe (3-monochloropropanediol esters) in all vegetable and fish oils incorporated into food-stuffs, as 3-MCPDe in food poses a potential health concern to consumers in younger age groups. The upcoming legislation will impact food manufacturers operating in the bakery, confectionery, and infant food & formula industry.

### What is 3-MCPDe?

Both 3-MCPDe and GE (glycidyl esters) are process contaminants: they are formed when vegetable oils are exposed to high temperatures in the refining process.

3-MCPDe was first detected in 1978, and first discussions on 3-MCPDe in edible oils date back to 2006. Retailers were the first to acknowledge and require lower levels of 3-MCPDe, while NGOs activated a public discussion on food safety. In Europe, Bunge Lodens Croklaan has been able to perform full mitigation of 3-MCPDe and GE since 2014. By 2016 we were at the forefront in low contaminant levels in infant food with a fully automated, in house method that measures contaminants in near real-time. This in house analytical method was the subject of two peer-reviewed publications and is currently in the final stage of a global ring-test to become an ISO standard for measuring 3-MCPDe and GE in oils and

LEGISLATION ON 3-MCPDE AND GE IN µg/kg				
SPECIFIC TARGET GROUP	PRODUCT	MAXIMUM LEVELS IN µg/kg		
		GE 2021	3-MCPDE CURRENT	3-MCPDE 2021
	LIQUID FORMULA	6	N.A.	15
	POWDER FORMULA	50	N.A.	125
INFANTS AND YOUNG CHILDREN	VEGETABLE OILS & FATS, FISH OILS AND OILS FROM MARINE ORGANISM, AS AN INGREDIENT	500	N.A.	750
	REFINED NAMED VEGETABLE OILS, FATS: COCONUT, MAIZE, RAPESEED, SUNFLOWER, SOYBEAN, PALMKERNEL AND OLIVE (AND MIXTURES OF THESE)	1000	N.A.	1250
	ALL OTHER REFINED VEGETABLE OILS, FATS: PALM, SHEA, FISH AND OILS FROM MARINE ORGANISM (AND MIXTURES OF THESE)	1000	N.A.	2500
GENERAL POPULATION				

NB: the above is a simplified version of the expected GE and 3-MCPDE legislation, for the details we refer to the Annex to Regulation (EC) No 1831/2006





fats. Since 2017, we have offered a fully mitigated oils and fats portfolio.

And as of 2020, we take advantage of having the industry's most globally integrated supply chain and can adapt and improve our supply of oils and fats all the way to the point of origin.

### **New EU legislation on 3-MCPDe coming in 2021**

The scope of the upcoming legislation includes all refined oils including vegetable oils, fish oil and oils from marine organisms. The legislation covers products meant for human consumption produced within and imported into the European Union. This legislation pays special attention to infants and young children, in the age of 6 to 36 months. New legal limits for vegetable oils in the product categories for young children will be 750µg/kg for 3-MCPDe.

For liquid and powder infant formulas, maximum 3-MCPDe levels are set for the final product, similar to current GE legislation. Other categories of the new regulations set maximum 3-MCPDe limits for products intended for general consumers to 1,250µg/kg for named, refined oils (such as coconut, maize/corn, rapeseed, sunflower, soybean, palm kernel and olive oil) and to 2,500µg/kg for all other oils, including palm, shea, and fish oil. These new 3-MCPDe limits are complementary to existing GE levels that were already in place since 2018.

### **Implications for brand owners and consumers**

The new legislation mentions specific food categories: processed cereal-based foods and food targeted at infants and young children, such as cookies and ready meals in convenience packs. Compared to products intended for general consumers, this part of the legislation sets

much lower maximum limits for both 3-MCPDe and GE and makes no distinction between oil types. These infant and young children foods and family concepts may carry brand names which also have products in the general consumer category intended for other age groups, like cookies and spreads. In this case, brand owners need to consider carefully how they want to position their brand, whether to extend the extra low limits across the entire brand portfolio or to segment this only to certain products. The oils and fats with lower limits must not be mixed with regular components during the production process, which may present supply chain challenges.

As food safety is a major public concern, consumer organisations and television programs may take products from the market and analyse them. The EU Rapid Alert System for Food and Feed shows the first notification related to oils & fats dates back to 2009. These notifications generally result in withdrawal of the product and damage to brands can be significant.

### **Solutions available today**

Building on 130 years of history and more than a decade of experience in 3-MCPDe and GE mitigation, Bunge Loders Croklaan offers a full range of solutions at levels beyond legislation. "Today, we are positioned to ensure food companies can transition smoothly into conformity with the regulations by January, 2021," says David Vandermeersch, vice president of Bunge Loders Croklaan in Europe.

"We also will serve companies that, irrespective of the looming regulations, are seeking the lowest levels of 3-MCPDe and GE on the market. We can tailor our full portfolio of oil offerings to meet their specific needs and clean-label aspirations." 

# ENSURING A RISE

Bühler's Stephanie Hardtmann, head of bakery innovation center and Sylvia Murgueito-Purschke, bakery training and technology specialist, discuss the processes and equipment for bakery operations



JetMix

**I**n today's highly demanding world, it is impossible to ignore consumers' preference for tasty foods on the one hand and healthy foods on the other. We also have to factor in that veganism has entered the mainstream at a time when the world is paying more attention to how food is produced – harbouring regional foods from regional raw materials. Snacking is now more popular too than the traditional three meals a day.

## Sustainable foods

One way to address these trends is via the numerous possibilities presented by hydration and aeration, says Stephanie Hardtmann, head of bakery innovation center, Bühler.

"We can reduce fats by aerating several fillings and products, and we can also help tackle obesity by replacing sugar," Sylvia Murgueito-Purschke explains. "For vegan marshmallows, for example, we can remove gelatine, replacing it with plant-based proteins and stabilisers. We can contribute to less water consumption, which is needed for gelatine production." Vegan aerated mayonnaise is an example of food she says has come to market because of the free-from and health and nutrition trend – and is viable because of the aeration process. Strikingly, Sylvia Murgueito-Purschke notes, it is made without egg – and aeration is used to substitute its functional property as an emulsifier.

## How do aerators work?

In Bühler's Mandomix series, gas is injected continuously into a liquid phase. The aerators and mixing heads are offered in different sizes depending on the required capacity and density. The smallest size is close to 1.5l and the largest just over 9l. In batch mixing, bakers must not just choose the right tool for the job they must incorporate the right parameters

"When aerating a mass of fluids, important variables to keep in mind are pressure in the mass of fluid created by the

pump, temperature of the mass of fluid, speed of the mixing head and the aerator, required density outcome and the temperature control of the process," Hardtmann outlines.

When all of the variables are kept under proper control the aeration of the mass of fluid should be successful.

## Hydration

With hydration, bakers can create a sustainable baked good, which has desirable properties such as increased shelf life, slower staling for more softness, absorbance of more water for binding, shorten mixing times, therefore reducing energy consumption and making more tasty fulfilling products without additives, a faster fermentation time, creating a better dough and better machinability.

## How do hydrators work?

Bühler's JetMix hydration technology allows bakers to hydrate flour (hydration module) and to produce uniform pre- and sourdoughs (hydration system) – under industrial process conditions. The Jetmix hydration module is for hydrating powdery materials for fine to coarse materials with up to seven tonnes per hour.

Introducing a JetMix hydrator brings continuous processing and increased process control.

Hardtmann says: "The consistent dosing of flour gives a homogeneous dough and a uniform flour hydration with a high oxygen input. Thereby the mixing and dough development times are reduced by up to 50 per cent and the evaporation in the baking process is reduced."

Via various tests, Bühler has confirmed the possibility to increase the energy input during mixing by up to 5.5 per cent, increase the volume by 3.4 per cent, increase the softness by up to 12.5 per cent and reduce microbiological growth by 74.7 per cent.

Increasing the hydration level of the final end product means increasing the level of water in a recipe, in the final dough and final product by keeping the water activity level constant. By doing this, it is possible to hold the shelf life of the product despite the hydration level being increased in total. 



Mandomix

# caotech

grinding technology



## Your partner for producing the best chocolate, compound & other fat based masses



At Caotech, we know our customers and understand their needs. When it comes to chocolate processing, product quality and reliability are important factors for success.

In cooperation with our clients, we develop the most efficient processing lines for chocolate, compound & other fat based masses, enabling clients to produce the best products for their customers. By using our ball mill lines, our clients are very successful in the confectionery business, meeting the demands of the market in all respects.

Our capacities range from 10 up to 3000 kg/hour, from batch wise to continuous. The unique configuration of the grinding tank, shaft, and media guarantees optimum grinding efficiency. This makes the equipment suitable for processing heat sensitive masses, such as sugar free chocolate or compound.

Advantages of our equipment are:

- Limited space requirements
- Efficient power consumption
- Low maintenance costs
- Consistent product quality
- Perfect particle size distribution
- Long(er) shelf life

After sales support is one of the most important key factors in a business relation. We maintain regular contact with our clients, assisting them whenever necessary. Thanks to our support and flexibility within our organisation, we have grown rapidly in recent years. Caotech are world leaders in confectionery grinding technology.

**caotech**  
grinding technology

Handelsweg 3 - 1521 NH Wormerveer - The Netherlands  
phone +31 75 640 43 13 - info@caotech.com - www.caotech.com



# What's making taste buds tingle



*Lime and mint compound summer roll*

## Jacqui Passmore, marketing manager UK and Ireland at Dawn Foods, looks at the importance of flavour and texture in bakery taste trends

**N**atural flavours and colours as well as textures have never been as important, as consumers become more concerned about health. Our palates have become tuned to less sweet tastes or at least we are craving smaller portions of very sweet flavours. There's a big increase in fresh citrus flavours, as well as the softer gentler notes of botanicals and of texture, all playing a big part in contributing to taste and mouthfeel.

### **Fresh & fruity**

Fresh citrus flavours are increasingly popular as an inclusion or topping on baked products, and like other fruit fillings, high fruit content and origin fruit are in demand.

Consumers are looking for something a lit-

tle different though – clementine is emerging rather than simple orange, along with yuzu as a more complex citrus option to lemon.

It is part of a trend for more natural products and those with a perceived health benefit.

Citrus flavours add a 'sweet and sour' combination to bakes and appeal to the palate of today's consumer, which has become more tuned into less sugary notes.

As we move into the summer months, tropical flavours are on the horizon as consumers look for lighter refreshing beverages and foods. There is real cross over between flavours in beverages and bakery.

Dawn recently launched a naturally vegan lime & mint compound made with real lime juice concentrate and a hint of spearmint that can be added to mousses, non-dairy creams,

ice creams, fillings and frostings to give a delicious, Mojito-inspired summery flavour.

Natural fruit pastes are a way of subtly dialling up the flavour of a bakery item and are proving popular with bakers.

Dawn offers a range of compounds – all-natural flavour concentrated pastes – that can be added to frostings and filling creams to give a delicious flavour boost.

Featuring natural fruit juice concentrate or extract such as pomegranate, blueberry, mango or passionfruit, which are all bang on trend, the compounds offer an easy way for bakery manufacturers to add flavour and visual impact.

### Comforting traditions

We are also still seeing interest in botanical flavours due to consumer interest in nostalgia.

The coronavirus pandemic has seen a big increase in home baking and consumers are keen on comforting, traditional flavours from the past, such as elderflower, violet and lavender.

Botanical flavours can add a new flavour dimension to a bake. For example, if sugar has been reduced or bakers are using a recipe suitable for vegans.

They give a layer of flavours that is more complex than sweetness alone and work well in icings and toppings to give a flavour hit that is not overpowering.

### Savoury & sweet

There is also a move to include herbs and spices, often associated with savoury bakery, in sweet products too. These include combinations such as lemon and rosemary drizzle cake, chocolate cupcakes with fresh mint buttercream or scones filled with cardamom infused cream.

Savoury versions of traditionally sweet products are also giving a contemporary twist – such as the Chilli & Cheese Hot Cross Buns on sale this Easter, and savoury muffins.

Dawn offers a savoury muffin mix that can be used to make a range of exciting savoury takes on the sweet American-style muffin, such as Savoury Muffin Pizza slices for sharing, a US-style Meat Feast Muffin or a Cauliflower & Broccoli Cheese Savoury Muffin, ideal for serving as an accompaniment to soup.

### Eastern influence

Now that matcha and green tea are accepted flavours, more delicate Asian flavours such as jasmine and white tea are gaining popularity.

The boom in Japanese food, particularly with millennials, has also seen experimentation with Japanese flavours such as pandan, yuzu and cherry blossom. The simplicity of Japanese

cuisine taps into overall consumer interest in simple, natural ingredients.

Artisan chocolatier William Curley experiments with unorthodox flavours such as apricot and wasabi, as well as Japanese black vinegar and yuzu.

These flavours can be transposed into bakery too, as in Japanese black vinegar sesame cupcakes filled with yuzu curd or apricot and wasabi muffins for an edgy take on traditional sweet bakery flavours.



### Tempting texture

Textures, whether delivered through inclusions or toppings on a bakery product, are high on the agenda with consumers. Nuts, seeds and dried fruit are a way of not only adding a new taste perspective, but also a healthier dimension to otherwise indulgent bakery items. Such ingredients minimise consumer guilt of 'me time' luxury and tap into the trend for healthier bakery ingredients too.

One of Dawn Foods' eight 'megatrends' for 2020 is 'Enlightened Eating' – where health conscious consumers seek great tasting, pure and simple products that are free from artificial ingredients and loaded with nutrients.

For example, by using granola as a topping for muffins and donuts, thus adding real textural contrast to the soft eating dough.

Muffins can be filled with apricot pieces, dried cranberries and pumpkin seeds throughout for an added flavour burst, then filled with a fruity apricot jam.

The granola topping not only adds 'pick-me-up-appeal', but gives a crunchy contrast to the jam filling too. 



Vegetarian savoury muffin

# MADE FOR SNACK INSPECTIONS



*With a case through dimension as little as 125mm (191mm including flanges), the Vertex easily slots into existing VFFS packaging and weighing turnkey lines*

**It's official. Europeans love their snacks. With more than 60 per cent adding them into weekly grocery baskets, 30 per cent buying on demand and 66 per cent trying healthier alternatives such as popped, rice-based and baked alternatives, snack processing and packaging lines look set to get busier**

**F**uelled by consumer 'snackification' demands for quick, on-the-go foods, snack brands are continually innovating and diversifying product portfolios. Although considered by many to be discretionary purchases, the snack market continues to expand. Western Europe is the third-largest region in the global savoury snacks sector and is expected to grow from US\$20,985 million in 2018 to US\$25,404 million by 2023, at a CAGR of 3.9 per cent.

Documenting the rise of the 'super snacker', Frito-Lay recently published its top 2020 forecasts indicating that spice, citrus, global influence, unexpected combinations and health benefits will drive new product developments.

With snacks becoming such a mainstream mode of eating, a number of manufacturers in the snack space are swiftly tapping into these trends and adding more packing and inspection lines, observes Fortress Technology's European managing director Phil Brown. He notes that

it's not unusual to see up to 200 turnkey weighing, metal detectors and VFFS packing lines side-by-side in large snack factories.

## **Security for super snackers**

Protecting snack, pretzel, nuts, popcorn, cereal and corn and potato crisp brands by supporting fast product changeovers, a Vertex unit, when fitted with Halo, reduces the time food factories dedicate to performing frequent routine verification checks. As many snack manufacturers have discovered, they realise major labour cost savings.

Fitting into restricted production spaces where other detectors can't, the Fortress inline inspection system is designed to integrate with vertical form fill seal (VFFS) pouch-packing solutions. With a case through dimension that can be as little as 125mm (191mm including flanges) and a circular aperture, the Vertex slots into existing VFFS packaging and weighing turnkey lines to enhance quality and consumer confidence.

Brown explains: “The addition of new ingredients, flavours, own-label, sub-brands, pack sizes and nutritional concepts means that a snack company’s average portfolio can easily comprise 100 stock keeping units.”

Vertex, with the addition of Halo, is pretty much an off-the-shelf metal detector, enabling snack manufacturers to rapidly introduce new lines and speed up their time to market. Similarly, the aperture sizes tend to be quite standard. “Small enough in diameter to ensure metal detection sensitivity is not compromised, yet wide enough to ensure there’s no product choke-off,” adds Brown.

Despite its slim stature, the Vertex meets, and in many instances exceeds, the sensitivities of comparable snack metal detection systems. Utilising the very latest digital signal processing technology, each unit inspects freefalling product at high speeds, detecting and rejecting the smallest metal contaminants including pieces of wire, shavings and swarf.

Rather than adding a side reject system, which would be too bulky for most snack packing lines, when the Vertex identifies a metal contaminant, a signal is sent to the PLC, or to the downstream bagging equipment. Typically, the reject output is connected to the bagger, which then either stops the line or inhibits the cutting of bags. This means the contaminant is trapped and sealed in an extra long bag that is easily spotted and removed by personal, or more typically by a downstream checkweigher, which will reject it as overweight.

The Vertex can also be utilised to avoid issues that may arise when inspecting sealed products in metallised polybags. It is also possible to inspect for metal in a metallised bag.

## Say Halo

Naturally, snack manufacturers may worry when metal contaminants are detected. But equally they may be concerned if their metal detector hasn’t picked anything up for a while. It’s why performance checks are conducted at regular intervals, typically hourly, on inspection machinery.

Due to the scale of their automated weighing, inspection and packing operations, automatic testing is widely adopted by the snack community. As well as reducing the cost associated with performing these checks manually, automatic testing improves the repeatability of routinely monitoring a metal detector’s performance.

Halo is Fortress’ version of automatic testing. It works by repeatedly and accurately simulating testing with all metal types (ferrous, non-ferrous and stainless-steel) by mimicking the signal



disturbance of particles of a calibrated size. Each Halo, which is a separate kit of electronics from the search head, is calibrated to simulate the presence of a metal contaminant falling at the speed of the application being inspected.

Brown comments: “Turnkey vertical packing lines are compact and make access even more challenging for performing good quality checks. To test the worst-case scenario, metal test pieces would need to pass through the exact centre of the Vertex aperture tube. It is always good practice to challenge the metal detector in a way that simulates the speed in which product is passing through the machine and the hardest to detect scenarios, which manual checks don’t do consistently. The result may be a false sense of security that the metal detector is reliably detecting to the desired performance level.”

Multiple machines can be networked to generate a site performance due diligence report. “We are not aware of any other technology in the food inspection market that can test all sizes and metal types so reliably, precisely and at such a fast speed,” states Brown.

The impact Halo can have on cost of ownership is easy to see. Most large snack processing lines performing manual tests have two people dedicated just to this task. One to insert and another to remove, document and report the test. If testing 100+ metal detectors at the start, end and throughout a shift (often hourly) and after every product changeover, the costs soon climb, and the possibility of human error also rises. As a relatively inexpensive metal detector, Brown is quick to point out that for any food company brand protection is critical. “The quality and brand stakes in snacks are high. Vertex equipped with Halo offers snack manufacturers a fast return on investment in a rapidly evolving market where product costs and production speeds continue to rise.” 

# WHAT WE EAT MATTERS

**Will 'free-from' messaging expand to include climate impact and how will that influence food safety practices? asks Louise Grinyer, food safety and microbiology consultant at Leatherhead Research**



**T**here is no globally unified definition for 'free-from'. In the UK it is associated only with allergens, while in the US it is far broader, overlapping with 'natural'.

The 'free-from' claim has different definitions in different markets. In the UK the phrase is generally understood to mean a product free of an ingredient causing an allergic response or food intolerance, for example milk, eggs or fish. In the US 'free-from' has a broader meaning, overlapping with 'natural' (incidentally another ambiguous term), incorporating allergen-free products as well as those free of: added preservatives, high-fructose corn syrup, GMOs, artificial ingredients, trans-fats, hormones or added sugar. Vegetarian and vegan products could also be considered 'free-from' meat, and products of animal origin respectively.

## **FREE-FROM AND SUSTAINABILITY**

With the growth of plant-based and climate-conscious products and brands, expect to see 'free-from' extending to sustainability considerations.

The market share of plant-based 'free-from' and vegan products continues to rise, catering not only to consumers with specific dietary requirements, but increasingly being purchased by those who perceive these products to be healthier. The environmental impact of our lifestyle, including

mass consumption of foods containing ingredients of animal origin, has become more of a concern in the last few years, particularly for millennials.

The reduced carbon footprint associated with plant-based foods free of ingredients such as meat, eggs and milk, makes these products attractive to the environmentally conscious consumer. In the future, the phrase 'free-from' may evolve to be associated not only with allergen-free products and healthy eating, but also sustainability.

The 'green' evolution is not just a consumer driven change: it has legislative teeth that have already made their way into policy, which directly impacts the food and beverage industry.

The European Commission's (EC) European Green Deal aims to tackle climate and environmental-related issues, with the ultimate aim to achieve net zero greenhouse gas emissions by 2050. It incorporates plans to increase sustainability, preserve and restore biodiversity, reduce pollution, supply clean energy, mobilise industry for a clean and circular economy, and to promote a fair, healthy and environmentally friendly food system.

## **FARMING PRACTICE**

The 'Farm to Fork' strategy for sustainable food is a key component of the deal, with aims to reduce the environmental impact of the food processing and retail sectors, and to promote healthier eating and reduce food waste. Another part of the strategy is

to reduce the use of chemicals such as pesticides, fertilisers and antibiotics in the food system, with an increased emphasis to be placed on organic farming.

These changes are already being implemented throughout the supply chain.

The process of implementing additional pesticide restrictions is already underway in Europe, albeit proceeding at different paces at country-specific level. Manufacturers need to be vigilant and keep up to date with the current status of restrictions in the markets where they source and sell products.

Consequently, we are witnessing changes to farming practice alongside shifting demand, potentially exacerbating food safety risk.

The EC recognises that the 'Farm-to-Fork' strategy will create some challenges for farmers and food manufacturers. There are potentially some increased food safety-related risks associated with the planned change to 'cleaner' farming practices, exacerbated by the increasing consumer demand for plant-based products. These include:

- Reduced yield of fruit, vegetables and cereals could lead to supply and demand issues, causing an increased risk of adulteration with cheaper, more readily available and contaminated ingredients
- Increased incidence of pests at primary production stage, leading to physical and microbiological hazards
- Greater supply chain complexity due to need for additional suppliers to meet demand
- Risk of plant products containing restricted chemical pesticides, particularly those imported into the EU
- Increased risk of contamination of plant commodities with mould and mycotoxins.

## NEW TECHNOLOGIES

Unknowns may prevail as the dynamic between arable and pastoral farming play out alongside climate change, a growing world population and new technologies

In the longer term, the possible shortage of produce caused by pest damage and increased demand for plant products, may be negated by the reduced need for animal feed. Currently approximately one third of the world's grain and two thirds of soya, maize and barley are used as feed crops for livestock.

The demand for animal products may decrease as more and more consumers switch to a vegan, vegetarian or flexitarian diet. This could elicit the transition of some farmers to human food crops, such as peas for producing pea protein, an ingredient commonly used in meat-analogues. However, the challenges posed by chemical-reduced farming will still be a threat to safe and high quality food production.

Technology will supplement, not replace, existing food safety management practices.

The solutions required to control potential food safety hazards will of course involve the standard practices of testing, surveillance audits and threat analysis: our industry is comfortable with these approaches which have proven efficacy. Consequently, we believe that continued utilisation



of these techniques will be paramount to maintaining control. However, we also believe that these measures can be supplemented by more innovative solutions such as block chain technology to enhance traceability (and speed), and custom-made software solutions to gather and manage internal and external data, reducing the burden on stretched resources.

The Covid pandemic travel restrictions have also forced the hand of many businesses to explore remote auditing: a practice that in our opinion would work well for some aspects of the audit, such as documentation and process design, but less so for other key aspects like implementation and production practice. The lack of comparable data-sets between the two (remote vs in-situ) also makes it difficult to make a fast, safe transition between the two.

In time, we also anticipate real-time measurement and observation technology to play a role, for example combining inline sensing, virtual audits and drone technology to monitor practices in the field. Remote surveillance practices like this would not just reduce the immediate health and safety risk to auditors and food workers but would also cut carbon emissions through reduced national and international travel.

## DRIVE CHANGE

Whether 'free-from' will extend to mean sustainability is, like many elements we touched upon, unknown. However, we anticipate that the growing group of health and socially conscious consumers will increasingly demand both allergen-free and animal-free products. We can be confident that the legislative pressures being imposed to increase the environmental credentials of the food and beverage sector, will drive change and with change comes risk. We know there is no one-size fits all solution to ensure food safety within your business, but we would advocate for a risk-based approach that reflects your specific activities and supply chain. We would also caution against wholesale adoption of new technologies to replace established food safety norms, we see greatest value in combining both approaches. 



Louise Grinyer,  
food safety and micro-  
biology consultant at  
Leatherhead Research

Image courtesy of Bowman Ingredients

# A closer look at gluten-free in 2020

Baked goods from rustic bread, pizza dough and pasta to tender cakes rely on gluten. How does it work? And what can be done to prevent cross-contamination in production? Bowman Ingredients answers

**W**hat is gluten?  
Gluten is a protein that some people find hard to digest. It is found in all varieties of wheat, rye and barley, including the rye/ wheat hybrid triticale.

It is estimated that one to two per cent of the population have coeliac disease (an autoimmune form of gluten intolerance), up to six per cent have what has been termed non-coeliac gluten intolerance and 0.2-0.4 per cent have a wheat allergy. These conditions can cause a range of symptoms from discomfort and bloating to serious digestive problems, and may impact on other organs including the brain. As there is no treatment, following a strict gluten-free diet is a lifelong necessity for people with coeliac disease and those who are intolerant or sensitive to gluten if they want to avoid symptoms.

## Different reasons for going gluten free

Increased focus on health and wellbeing has

bred a generation of savvy consumers who appreciate the link between gut and digestive health, its impact on overall mental and physical fitness.

Among this is the belief that following a gluten-free or gluten reducing diet may reap benefits such as increased energy, reduced bloating, and better overall digestive health, regardless of whether you have a diagnosed coeliac or a wheat intolerance. 22 per cent of UK consumers who have experienced a gastrointestinal issue agree they have managed their GI issues through diet. (Mintel 2019)

Mintel's January 2020 report 'Allergies and intolerances: free from dieting trends' recommends a focus on delivering products that support digestive health, with the opportunity to link gluten-free products with this trend. An associated diet which has seen a recent growth in popularity is the FODMAP-free or low FODMAP diet (fermentable oligo-, di- and mono-saccharides, and polyols-).

Originating in Australia where as reported by Mintel, 39% of new product launches con-

tained a reference to Fodmapsend 2014- end 2019, the diet is now growing in popularity in the UK.

Someone who is sensitive to FODMAPs is reacting to the type of carbohydrate found in wheat, barley, and rye, as opposed to the protein (gluten). However, people may be sensitive to both. Often if a gluten-free diet does not resolve symptoms, a low FODMAP diet may be the next step.

**The rise of gluten free**

Thanks in part to this consumer focus on digestive health/ gluten-free as a lifestyle choice, and in part due to the reported increase of food allergies, the share of food product launches with a gluten-free claim has continued to rise. As much as 19 per cent of all new food product launches in 2019 were gluten-free, from cakes and snacks, to cereals and pasta.

**Connection to clean label**

With food allergies reportedly on the rise, and some high profile examples of non-labelled ingredients having some very serious ramifications there are likely to be requirements for better and clearer labelling in food and drink – both from regulatory demands and consumer expectations.

The importance of clean label – both in on shelf products and on menus, has never been greater. In fact according to Mintel, 35 per cent of UK consumers would be interested in seeing allergy information (e.g. gluten free, contains nuts etc) on food and drink menus.

**Non-gluten alternatives**

There are a huge number of options available when it comes to gluten-free alternatives to wheat (provided they are processed in a gluten-free environment).

**The risk of cross contamination**

While all of the above are naturally gluten free, if they are be milled where wheat flour is also milled then they are likely to be cross-contaminated and can no longer be classified as gluten-free. Cross contamination can happen because wheat flour is in the atmosphere or traces of it remain in storage containers. This is why oats are not always labelled as gluten-free.

The term ‘gluten free’ is covered by law and can only be used on foods which contain 20 parts per million (ppm) or less of gluten.

While there is currently a high level of trust in the label ‘gluten-free’, cases of contamination may begin to erode consumers’ confidence in it. For example, according to a study published in the American Journal of Gastroenterology, some 32 per cent of restaurant foods labelled gluten-free contain gluten, likely due to the use of the same cooking pots for both gluten-free and non-gluten free foods.

**Dedicated gluten free production**

Bowman Ingredients are experts in creating gluten-free coatings, from breadcrumbs, breaders and matters to marinades. We were the first business in the UK to run a dedicated gluten-free factory, ensuring there is no chance of cross contamination. If you are looking to develop new products for retail or foodservice to cater to a gluten-free or FODMAP-free diet talk to us. Our new product development team are knowledgeable in a wide variety of gluten-free grains and can work with you to develop the exact taste and texture of coating you desire. <sup>[71]</sup>

“ The term ‘gluten free’ is covered by law and can only be used on foods which contain 20 parts per million (ppm) or less of gluten. ”

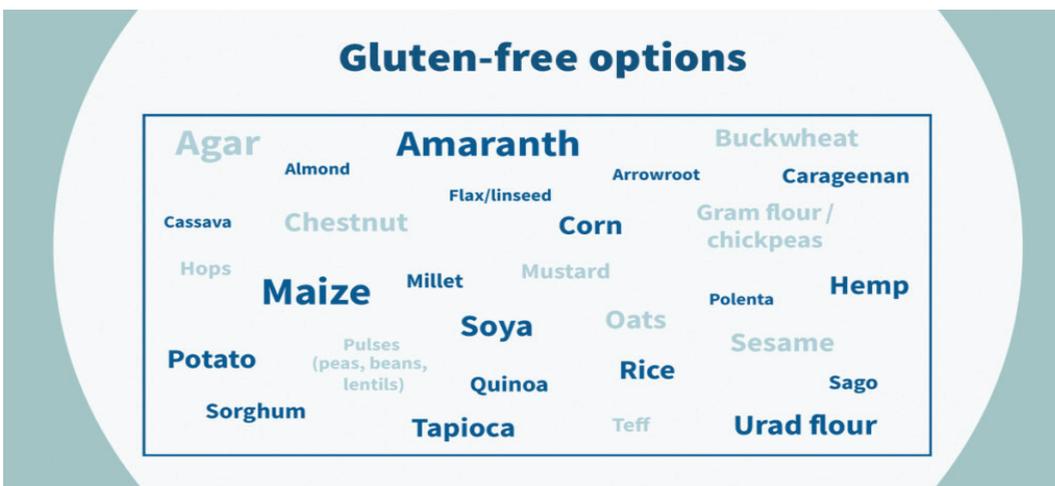


Image courtesy of Bowman Ingredients

# Trials prove the worth of freeze dried ingredients

The work that goes on behind the scenes in the R&D process is often unseen as new types of products come to market. Nicola Trafford, R&D lead at European Freeze Dry, looks at some of the current work



Nicola Trafford, R&D lead at European Freeze Dry

**T**he attention to detail is so intense that tasting of potential new products and ingredients for our customers is conducted daily.

With changing lifestyles and demands in the food we eat including vegan, we are constantly adapting our NPD to meet manufacturing and consumer requirements from our dedicated facilities at our headquarters in Preston, Lancashire, where we have a kitchen, specialist drying technology and tasting areas.

Working with the customer every step of the way through the R&D process, technical experts advise on the make-up of raw materials for consistency, colour, nutritional value, taste and presentation. The trials are run on all new products with five or six personnel making up the tasting team daily from a panel of 20 staff.

## Vegan focus drives rise of NPD

Last year, we launched a vegan pasta arrabbiata and five-bean cassoulet after going through the rigorous process. Currently, our NPD teams are also looking at soya beans and green beans.

The process is built around the customer, starting with their needs and the question, can it be freeze dried? There is market research, trends analysis and data gathering to be undertaken. The sourcing of the ingredients is then started – with a certain reliance on the supply chain – and sourcing and procurement of the product in question.

The production can then begin in earnest in the factory, culminating in tasting and selection, working closely with the customer at all times.

The R&D team sees a continued rise in popularity of freeze-dried vegan ingredients, to be used in new products or food production



Vegan food ingredients are rising in popularity

processes, with popular ingredients including turtle beans, diced sweet potato, black-eyed beans, diced beetroot and caramelised onion.

Products under development in the R&D team currently include diced caramelised toffee apple, soya beans and black turtle beans.

We have seen an increase in demand for our products in tins and ready meals during the Covid-19 pandemic, with food manufacturers increasing the volumes of food for those who are vulnerable and unable to leave their homes.

### Technology maintains structure and flavour

Using freeze drying technology, many products can be truly marketed as nothing added and there can be multiple benefits with natural colours and flavours coming through in beverages, for example.

The key benefits are that the process retains the structure – and the flavour and nutritional value – of the products. This means they are ready to be used as ingredients in a range of applications be it sweet or savoury.

In essence, this technology gently removes the water in a product without affecting the goodness. At European Freeze Dry, the products for freeze drying start as frozen raw materials, and undergo a process known as sublimation under standard programmes.

During the freeze drying process a deep vacuum is applied, and under these conditions neither ice or water can exist. The pressure from the vacuum, with a controlled amount of heat applied, causes the ice to leave the product as a vapour trail which is then captured on an ice condenser within the freeze drier, upon which the vapour forms again as ice.

The process takes approximately 24 hours, carried out in a set of 'chambers' which can be controlled at various temperatures and time schedules depending on specific product requirements.

Increasingly, manufacturers need to reassure their customers that super-foods are everything they claim them to be without added sugars or anything unknown or potentially harmful and this technology enables us to do just that.

### Freeze dried offers value to nutraceuticals

We are also using our technology in the development of nutraceuticals – natural foods and dietary supplements – with the natural flavours and colour retention being an integral part of the product. We are constantly breaking new ground with our customers and bringing new ideas and products to market to support food



*Freeze drying technology gently removes the water*

trends such as meat replacement and special dietary requirements. Meanwhile, scientists and nutritionists are examining a variety of common and more exotic food types, and how their natural qualities can provide health benefits, from adding a nutritional supplement to a diet, through to targeting more specific benefits such as aiding weight loss or cancer prevention.

More recently, newly discovered flavonoids such as rosehip and elderberry juices are being included in flu prevention products. Similarly, lamb's hearts are used routinely in a powdered format to supplement men's health and well-being. Freeze-dried liver is also regularly used as an iron supplement, which can improve red blood flow and reduce the chance of anaemia.

For nutraceutical producers, maintaining the viability of cells in the food product is as important as ensuring a long shelf-life.

To ensure a quality final product which continues to offer health benefits, while creating a supplement that won't deteriorate over a long-period of time, requires an extremely gentle drying process. Compared to more aggressive drying methods such as spray drying or air drying, freeze drying methods are proven to retain the purity of the product, even when they are ground down into a powder.

Freeze drying also means there is a much reduced potential for micro-organisms existing in such low amounts of water, ensuring that nutraceuticals can stay safe to consume over an extended time period, up to two years.

The result is a 100 per cent natural freeze dried product, which retains the flavour structure and nutritional benefits of the raw product. From there, it can be supplied as a stable supplement or ground down into a powder which can be inserted into tablets. 

Cereal bar with collagen



# The potential of porcine collagen

**What is it and what is it good for? Pauline Huang, product and branding manager, Rousselot Health and Nutrition provides an overview for it in the food, beverage and supplements markets**

**T**he popularity of collagen solutions continues to rise, with the ingredient's broad application capabilities being one of the key drivers. The global collagen market is growing at a compound annual growth rate (CAGR) of 7.63%, at which it is anticipated to reach US \$5,345 million by 2022. From maintaining bone and joint health to supporting skin beauty and sports recovery, collagen peptides – a hydrolysed form of collagen – have the potential to improve people's health and wellbeing throughout adulthood. Consumer interest in food, beverages, and dietary and beauty supplements that contain collagen peptides from a range of

sources is increasing worldwide, with collagen of porcine origin being no exception.

As consumer demand for porcine collagen solutions rises, the number of products on the market formulated with this ingredient is inevitably increasing too. To set themselves apart from the competition, in an increasingly crowded commercial landscape, and create strong appeal for populations worldwide, producers must identify the best-suited porcine collagen ingredient that is supported by scientific evidence and meets consumers' expectations for safety and traceability. In this article, Pauline Huang, product and branding manager at Rousselot Health and Nutrition, will provide

a snapshot of the porcine collagen market, including some key facts and figures, and offer insights on what makes Rousselot's porcine collagen solution, Peptan P, stand out in this marketplace.

### Market snapshot: how is porcine collagen performing globally?

While bovine collagen products comprise the biggest market share worldwide, porcine collagen solutions come in at a close second place. What is interesting to see is that the porcine collagen market is anticipated to grow at a higher CAGR than its bovine counterpart (bovine 5.98% vs porcine 7.08%). In addition, more than twice as many supplements available on the market contained porcine collagen in 2019 than in previous years. At Rousselot, we have observed that porcine collagen food, beverages and supplements are more cost-effective than similar products with other sources of collagen, while providing the same health benefits and meeting the high quality and health appeal standards expected by consumers. For example, Rousselot's new co-branding customer in Japan recently launched a dietary supplement with Peptan IIm P that promotes joint health, supporting a healthy, active lifestyle.

### The evolution of porcine collagen

Porcine collagen carries a longstanding legacy; it has played a key role in human nutrition throughout history, from helping our ancestors survive in harsh environments, to the present



Milk jelly with collagen

day where it continues to take a central place in lifestyles across the globe. For instance, in Japan — a country with a rich history of collagen consumption — pork products, like porcine collagen, enjoy widespread consumer acceptance, which makes them a popular choice for health and beauty supplements. From nutritional functionality to its adaptability, porcine collagen is a highly versatile ingredient that is reclaiming its position in consumer diets and beauty routines.

### Peptan P: future-proofing food, beverages and supplements

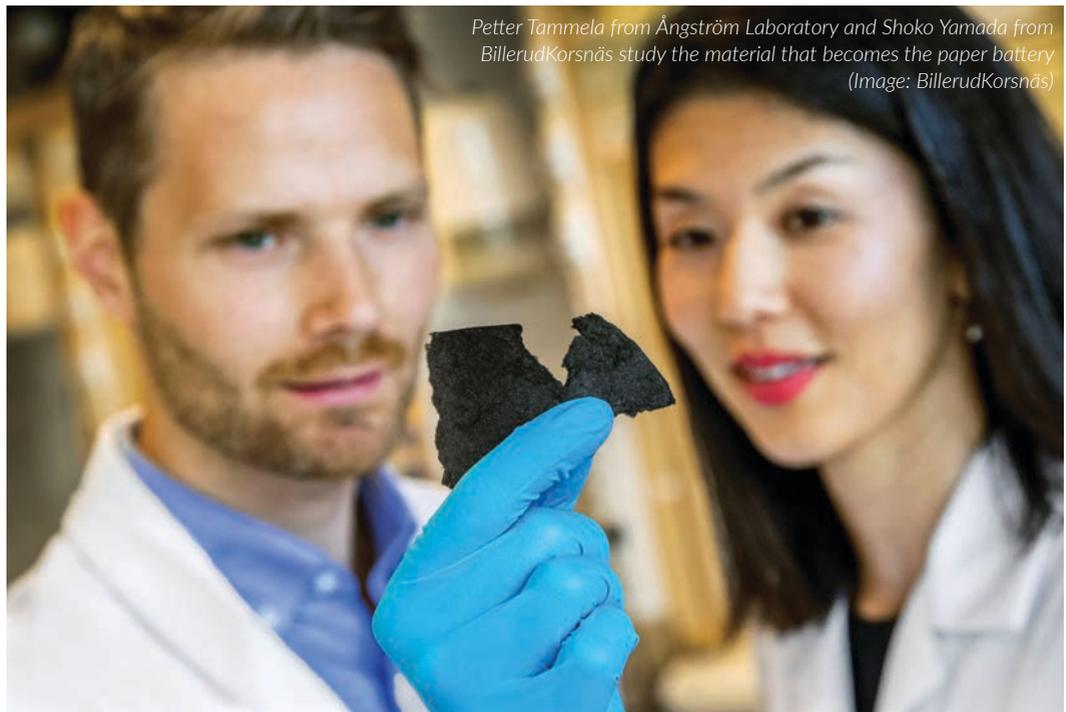
A natural bioactive collagen peptide ingredient, Peptan P allows producers to provide a range of science-backed health benefits to consumers — from promoting skin beauty and healthy ageing to supporting sports recovery. It is clean label, safe and can be traced back to its source within few hours, helping food, beverage and supplement manufacturers meet the ever-evolving expectations of a global society that demands to know what is in the products they consume and where the ingredients come from. To guarantee full safety, collagen peptides have been recognised as safe by international bodies, including The World Health Organization (WHO) and The European Food Safety Authority (EFSA). All raw materials used for producing Peptan P are also sourced from the EU and meet its requirements for animal welfare and feeding, and food safety.

Highly versatile and cold water soluble, this solution can be easily integrated into product formulation for a range of applications, such as food, sports drinks and powders, gummies, and dietary and beauty supplements — without affecting the taste, texture or mouthfeel of end products. 

For more information on the rise of porcine collagen and how Rousselot's Peptan P can help manufacturers develop food, beverages and supplements that meet the demands of today and tomorrow, visit [Rousselot.com](https://Rousselot.com) or contact [collagen@rousselot.com](mailto:collagen@rousselot.com).



# NOW AND PAPER



*Petter Tammela from Ångström Laboratory and Shoko Yamada from BillerudKorsnäs study the material that becomes the paper battery (Image: BillerudKorsnäs)*

## Paper battery offers potential cheap smart applications for food and drink packaging, writes Brenda Dionisi

**A**fter 10 years of research, researchers at the Ångström Laboratory at Uppsala University in Sweden, working with Sweden-based paper packaging manufacturer BillerudKorsnäs, are close to the commercial development of a bio-based paper battery which would serve as a small energy source on paper packages. It could, for instance, power sensors measuring key food and drink qualities, such as temperature, pressure and light.

The prototypes of their paper battery are made of electrodes based on cellulose from wood pulp fibres that can be integrated, like a small cushion, into paper-based packages, or be part of paper labels on glass and plastic packs and bottles. The

battery consists of two black pieces of paper, each acting as one electrode, with a standard piece of white paper as a separator. The battery is coated with a conductive polymer that absorbs charges and can store electric power: "We also use some additional additives that are non-toxic and food safe," says Lars Sandberg, project manager innovation at BillerudKorsnäs, the intellectual rights proprietor of the invention.

### FLEXIBILITY

The device can store charges just like any traditional battery, says Sandberg, and it can store approximately the same amount of energy per weight that would a traditional AAA battery. The battery can be folded, cut out of rolls of charged paper and

shaped for various applications. It can also be printed on with an inkjet printer. A light sensor and/or timer can be printed onto additional paper accompanying the battery, giving it more functionality. Finally, it could be recycled along with the paper packages or labels and can be used to make new paper packages or paper batteries.

While intelligent and active packaging is becoming a big market in terms of upcoming products and possibilities, it is still a small proportion of all packaging that is produced globally, Sandberg tells *Food & Drink Technology*.

The company says paper batteries can improve food and drink sector logistics and product safety, delivering (with a printed sensor) real-time tracing to optimise supply chain logistics. It could also be used as an anti-theft and anti-tamper tool, pinpointing where a package was opened, damaged or stolen. It also could provide real-time information on cross border travel of products and duties owed, which is particularly important for wines and liqueurs, he says, noting a reduction in battery costs would allow such systems to be used with a larger number of goods. Sandberg adds that the innovation would allow brands to interact with consumers in a more creative way, such as creating flashing lights, and enabling consumers to open packages by pressing a button.

Fintan O'Leary, managing director of Levercliff Associates, a UK-based food and drink business consultancy firm, agrees that a paper battery and sensor on a food package could help transmit warnings that a product has been contaminated or is unsafe to eat. It could also ease recycling, by indicating to consumers which parts of a package can be recycled and in which recycling stream.

He adds that paper battery-powered sensors on chilled convenience food packs could guarantee consistent temperature control and this might give both manufacturers and retailers confidence that shelf life extension of that food could consistently be achieved over time: "And this will ultimately lead to a reduction in food waste and prevent margin loss," he explains. He says the innovation might also aid retailers in creating more effective anti-theft strategies, including powering bottle security locks and security tags.

## COMMERCIALITY

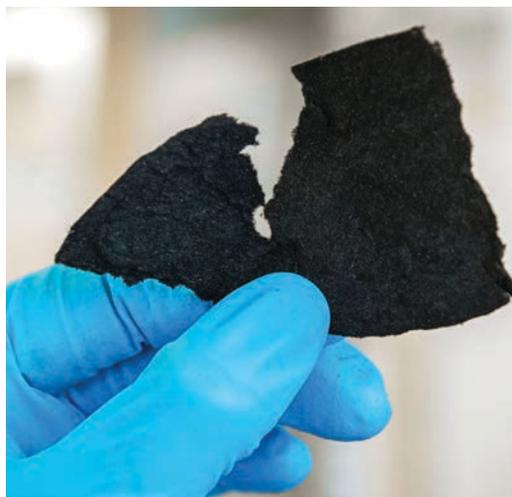
A commercial pilot run last April (2019) confirmed that the paper-based electrode can be produced effectively and on an industrial scale, with the developers proving 'runability' – testing the ease with which the paper passes through an ordinary high-speed paper machine. BillerudKorsnäs is also looking for additional non-food uses, such as large-scale energy storage devices in smart grids – more successful applications will build volume and reduce

“ A paper battery and sensor on a food package could help transmit warnings that a product has been contaminated or is unsafe to eat. It could also ease recycling, by indicating to consumers which parts of a package can be recycled and in which recycling stream ”



costs for food industry users, Sandberg says. "If we can produce the paper battery in tonnes, so at high capacity, then we estimate that the production costs of a 3cmx3cm paper battery would be circa one cent (€)," he says. "So, cost and sustainability are important parts of this equation," Sandberg says, who predicts the paper battery could be launched commercially in 2021 or 2022.

Indeed, cost-effectiveness will be key, says O'Leary. "The cost of the battery, plus the cost of the sensor and its installation and the costs of monitoring will all add up. Food and drink manufacturing and retailers are typically low-margin sectors and won't take on-costs if the cost/benefit analysis is balanced in favour of the inventor, and not the consumer," he concludes. [71]



# Q & A

## Ask the expert: How specialty lubricants handle today's challenges

**In this interview, Marius Czech, Klüber Lubrication's food market manager, explains how specialty lubricants handle the challenges of griddles, fryers and other snack and bakery operations**

**Q. What challenges are snack/bakery operations encountering where specialty lubricants can make a big difference?**

**A.** Let's start with the big picture. From the viewpoint of the food and beverage manufacturer, there is always a struggle to hold maintenance costs to a minimum. And there is always the need to be more productive, which requires shorter and faster production cycles. In various ways, advanced specialty lubricants can address those challenges.

**Q. What about energy costs?**

**A.** Of course, energy efficiency is another challenge – which is becoming more pressing due to economic and environmental issues.

**Q. Is it tougher to keep food processing lines operating profitably today?**

**A.** Yes. It is a huge challenge to keep food processing plants profitable. Ever shorter production times, faster running machinery, warm and cold-loaded machine components, as well as hygiene requirements, are just some of the challenges. We are constantly looking at ways we can help our customers operate more productively and safely.

**Q. How do specialty lubricants help meet those challenges?**

**A.** Specialty lubricants meet the requirements in regards to extended maintenance intervals for high-speed applications, high load and high or low temperatures.

**Q. What new or upgraded products have you developed recently?**

**A.** One of the critical requirements a specialty lubricant must provide food processors is appropriate high-temperature performance. Three new products come to mind. Our new



Klüberfood NH1 CH 6-120 SUPREME chain oil features a solid white formulation that has an operational limit up to 1200°F (650°C). Our new high-temperature polyurea special bearing grease, Klüberfood NH1 74-401, offers a wide service temperature range of up to 320° F (160°C). And our assembly paste, Klüberpaste UH1 96-402, provides protection against tribo-corrosion or fretting corrosion at permanently higher temperatures up to 2200°F (1200°C).

**Q. What assurance do food processors have that these lubricants are safe?**

**A.** Customers can rest assured that the high standards and best practices we use for non-food lubricant is the foundation for manufacturing our food-grade lubricants. In addition to necessary lubricant certifications, we meet NSF H1, Kosher/Halal and ISO 21469 standards alongside our proprietary quality assurance programmes. We are committed to implementing the quality-assurance processes and the research-and-development programmes that our customers need to succeed now and in the future. 



Marius Czech,  
Klüber Lubrication's  
food market  
manager

# Asia CanTech 2020

9 - 11 November  
Ho Chi Minh City, Vietnam

The annual Conference and Exhibition that  
puts can makers and fillers from across  
Asia in touch with their global suppliers

[www.asia-can.com](http://www.asia-can.com)

Organised by



CanTech  
INTERNATIONAL

*The Muntons AD plant doesn't only produce electricity, a by-product of the process is a bio-fertiliser*



# Generating power from waste

## Ingredients supplier achieves energy milestone

**M**aking malt is not enough for one UK maltster. Muntons, based in Stowmarket, Suffolk, has just announced that it has reached a genuine milestone having generated 10 million kilowatt hours of electricity since opening its anaerobic digester (AD) plant in 2015, enough electricity to power 2,000 average sized homes every year.

Muntons' AD plant has been operational since January 2015 making Muntons the first maltster in the UK to take this bold step for increased sustainability. Not only does it generate electricity, it also makes significant reductions in road haulage.

By using its own process waste water, residues from the processing of barley into malt and malt extract, it has saved the equivalent

of 3,000 tonnes of greenhouse gas emissions. This substantial saving is the equivalent of the emissions from 1,600 cars every year.

The Muntons AD plant doesn't only produce electricity, a by-product of the process is a high quality digestate, or bio-fertiliser, which can then be used on local farms to enrich the soil, helping to ensure top quality crops are grown ready to be malted. It really is full circle sustainable thinking in action.

Nigel Davies, Muntons director of technical and sustainability, comments: "Our decision to build an AD plant has proved to be well founded, making a valuable contribution to our energy requirements. Generating energy locally is efficient and environmentally sound, and the positive impact on nature is significant, reducing greenhouse gasses and helping to enrich the soil on local farms."

Muntons has calculated that since the plant was commissioned, they have produced 5,606,175 cubic metres of biogas. It has also treated 411,000 cubic metres of waste water, which is then safely introduced into the river Gipping to help keep the fish swimming and the river flowing. 

“Generating energy locally is efficient and environmentally sound, and the positive impact on nature is significant, reducing greenhouse gasses and helping to enrich the soil on local farms”

# The Suppliers' Directory

A definitive guide to the suppliers of equipment, ingredients and packaging solutions for the food and drink industry.

To advertise in the directory, please contact Katie Healy on +44 (0) 1474 558975 [katie@bellpublishing.com](mailto:katie@bellpublishing.com)

## Dietary Requirements

**Plant extracts manufacturers**

since 1984

**WATER SOLUBLE HERBAL EXTRACTS**

Adhatoda vasaka | Amla | Bacopin  
Centelin | Garlic | Green Tea | Tulsi |  
Gymnema | Licorice | Momordicon  
Olive | Phyllanthus Amarus | Shatavari  
Terminalia Arjuna | Terminalia Belerica  
Terminalia Chebula | Triphala

**SABINSA EUROPE GmbH**  
P : +49 6103 2701111  
E : [info.europe@sabinsa.com](mailto:info.europe@sabinsa.com)  
W : [www.sabinsaurope.com](http://www.sabinsaurope.com)

## Filling Machines

**Manufacturers of depositors & filling machines for the food production industry**



**riggs autopack**

Tel: 01282 440040  
[info@riggsautopack.co.uk](mailto:info@riggsautopack.co.uk)  
[www.riggsautopack.co.uk](http://www.riggsautopack.co.uk)

## Filters



**Hygienic stainless steel systems, fabrications, filters and fittings**

**Axium Process Ltd**  
Hendy Industrial Estate,  
Hendy, Swansea SA4 0XP  
Tel: +44 (0) 1792 883 882  
Fax: +44 (0) 1792 886 041  
Email: [info@axiumprocess.com](mailto:info@axiumprocess.com)  
Web: [www.axiumprocess.com](http://www.axiumprocess.com)

**axium PROCESS**

## Flavours

Stringer Flavour



Manufacturing **Natural Flavours**

**FLEXIBLE ORDER QUANTITIES**

[www.stringer-flavour.com](http://www.stringer-flavour.com)  
Tel: 01442 822621

To advertise in the Suppliers' Guide please contact **Katie Healy** +44 1474 558976

## Flavours

Create unique, sour taste experiences



Discover the advantages of PURAC® Powder at [corbion.com/acid-sanding](http://corbion.com/acid-sanding)

- Instant sourness
- Maintain stability
- Low-acid migration

**Corbion**  
Keep creating

**Foodie Flavours**  
NATURAL FLAVOURING

**HIGH STRENGTH NATURAL FLAVOURING**  
for the food professional

Extensive range of natural flavourings and extracts for food & drink applications. Low minimum orders. Made in the UK.

**foodieflavours.com**  
Call: 0333 222 5968

**symrise**  
always inspiring more...

We offer ideas and innovations for sweets, chocolates and chewing gums

Symrise AG  
Mühlenfeldstraße 1  
37603 Holzminden, Germany  
Tel: +49 5531 90 0  
Fax: +49 5531 90 1649  
[info@symrise.com](mailto:info@symrise.com)  
**www.symrise.com**

## Flavours



**Natural and nature-identical flavours** for confectionery, bakery, dairy, coffee and tea.

Curt Georgi GmbH & Co. KG  
Otto-Lilienthal-Str. 35-37 71034 Boeblingen  
Tel +49 (0) 7031 640101 Fax +49 (0) 7031 640120  
[www.curtgeorgi.de](http://www.curtgeorgi.de) [curtgeorgi@curtgeorgi.de](mailto:curtgeorgi@curtgeorgi.de)

## Food Safety

**fera**

A centre of science excellence, applying original thinking to improve global food security & sustainability. Protecting you, what you eat and the world in which we live for future generations.

W: [www.fera.co.uk](http://www.fera.co.uk)  
E: [info@fera.co.uk](mailto:info@fera.co.uk)  
T: +44 (0) 300 100 0323

## Fruit Juice Concentrates

**EXPERT BLENDERS & PURVEYORS OF QUALITY JUICES & SPICES**



**GERALD McDONALD & CO LTD**  
SINCE 1917

[www.geraldmcdonald.com](http://www.geraldmcdonald.com)  
+44(0)1268 244900

To advertise, contact Katie Healy +44 1474 558976 [katie@bellpublishing.com](mailto:katie@bellpublishing.com)

**Fruit Juice Concentrates**

**KANEGRADE**  
*in touch with nature*

**Fruit Juice Concentrates  
Fruit & Vegetable Juice  
Concentrates & Purees**

**Aseptic Packed  
Immediate delivery  
from stock**

**Kanegrade Ltd**  
Ingredients House,  
Caxton Way,  
Stevenage, Herts SG1 2DF  
Tel: +44 (0) 1438 742242  
Fax: +44 (0) 1438 742311  
E-mail: [info@kanegrade.com](mailto:info@kanegrade.com)  
Web: [www.kanegrade.com](http://www.kanegrade.com)

**Handling Equipment**

**Packline**  
*Materials Handling*



[www.packline.co.uk](http://www.packline.co.uk)  
[info@packline.co.uk](mailto:info@packline.co.uk)  
T: +44 (0)1202 307700

**Ingredients**

ADM WILD Europe  
GmbH & Co. KG  
Rudolf-Wild-Str. 107-115  
69214 Eppelheim / Germany

Learn more at  
[wildflavors.com](http://wildflavors.com)



**Hygiene**



**hillbrush**  
HYGIENE

HIGH QUALITY CLEANING  
EQUIPMENT AVAILABLE IN  
UP TO 12 COLOURS

[hillbrush.com/uk/hygiene](http://hillbrush.com/uk/hygiene)

**Ingredients**

**Muntons  
Ingredients**

Muntons Ingredients offers an extensive range of malted ingredients – from flours to extracts, spraymalts to kibbled and flaked grains, makes malt the perfect, versatile ingredient for adding natural flavour, texture and colour to your foods.

[www.muntons.com](http://www.muntons.com)  
Tel: 01449 618300  
Office@muntons.com

**kalsec**  
EUROPE LTD

7 Merlin Park, Fred Dannatt Road  
Mildenhall, Suffolk, IP28 7RD  
United Kingdom  
+44(0)1638 715 011 T  
+44(0)1638 715 031 F  
[www.kalsec.com](http://www.kalsec.com)

Producers of Spice & Herb Extracts,  
Capsicum Extracts, Natural Colours,  
Garlic & Onion Extracts, Oxidation Control  
Products & Customised Spice Blends.

To advertise in the  
Suppliers' Directory  
please contact  
Katie Healy  
+44 1474 558976  
[katie@bellpublishing.com](mailto:katie@bellpublishing.com)

**Labelling &  
Labelling Machines**

**Atwell**  
self-adhesive **Labellers**

**New Contract Labelling Service**

**Manufacturers and  
suppliers of labels  
and labelling  
equipment**



Tel: +44 1444 239 970  
[www.labeller.co.uk](http://www.labeller.co.uk)

**Membrane Solutions**

**David Kellett  
& Partners Ltd**

Maple Court Wormbridge House  
Wormbridge Hereford HR2 9DH

Tel: 01981 570611 Fax: 01981 570599  
Email: [sales@davidkellett.co.uk](mailto:sales@davidkellett.co.uk)  
Web: [www.davidkellett.co.uk](http://www.davidkellett.co.uk)



**REVERSE OSMOSIS,  
ULTRA-OSMOSIS,  
ULTRAFILTRATION &  
MICROFILTRATION  
SYSTEMS AND  
MEMBRANES**

**Motion Control**

**Intelligent Motors  
with  
Ethernet, CANopen,  
PROFIBUS  
or EtherNet/IP**



**Reliance**  
Precision Mechatronics  
Tel: +44 (0) 1484 601060  
[www.rpmechatronics.co.uk](http://www.rpmechatronics.co.uk)

**Natural Colours & Flavours**

ADM WILD Europe  
GmbH & Co. KG  
Rudolf-Wild-Str. 107-115  
69214 Eppelheim / Germany

Learn more at  
[wildflavors.com](http://wildflavors.com)



**KANEGRADE**  
*in touch with nature*

**Kanegrade Ltd**  
Ingredients House,  
Caxton Way,  
Stevenage, Herts SG1 2DF  
Tel: +44 (0) 1438 742242  
Fax: +44 (0) 1438 742311  
E-mail: [info@kanegrade.com](mailto:info@kanegrade.com)  
Web: [www.kanegrade.com](http://www.kanegrade.com)

**Packaging Machinery**

**iwis**  
antriebsysteme  
wir bewegen die welt



**iwis - Specialist Industrial Chain Applications**

Product range

- Simplex & Duplex Spike Chains for thermoform equipment.
- Simplex & Duplex Grip chains for film and tray sealing equipment.
- Extended pin chains for packaging and carton erecting machinery.
- Lubrication free chains (Megalife) for high speed applications giving additional service life.

For more information, contact us: [www.iwisuk.com](http://www.iwisuk.com)  
iwis drive systems Ltd. / Unit 8c Bloomfield Park  
/ Bloomfield Road, Tipton / West Midlands, DY4 9AP  
Tel: +44 121 5213600 / Fax: +44 121 5200822 / [salesuk@iwis.com](mailto:salesuk@iwis.com)

**PACKING  
MACHINERY UK**

- Linear & Multihead Weighers
- VFFS Bagging Machines
- Pouch Sealing Machines
- Complete Packing Lines
- Installation, Training & Support

**EXTREMELY COMPETITIVE PRICING!!!**



[hello@packing-machinery.co.uk](mailto:hello@packing-machinery.co.uk)  
**0345 222 0 572**  
[packing-machinery.co.uk](http://packing-machinery.co.uk)

To advertise, contact Katie Healy +44 1474 558976 katie@bellpublishing.com

Packaging

**YPS YORKSHIRE PACKAGING SYSTEMS**

**SHRINK WRAPPING solutions you can TRUST**  
since 1977

**MANUAL TO FULLY AUTOMATIC SYSTEMS**

L Sealers Side Sealers  
Sleeve Sealers Shrink Tunnels  
Shrink Film Spares & Service  
Packaging Automation

**01924 441 355**  
www.yps.co.uk info@yps.co.uk

Pipework

**JACOB**

**NUMBER ONE FOR PIPEWORK SYSTEMS**

MODULAR PIPEWORK  
- FAST ASSEMBLY  
- TIGHT CONNECTIONS



[jacob-uk.com](http://jacob-uk.com)  
E sales@jacob-uk.com  
T +44 1694 722841

Power Transmission

**iwis** antriebsysteme wir bewegen die welt

**OVIS GIB FLEXON**

Our goal is perfection – no more and no less

**100** Striding Ahead in a Journey of Excellence  
iwis: the first 100 years [www.iwisuk.com](http://www.iwisuk.com)  
iwis drive systems Ltd. / Unit 8c Bloomfield Park / Bloomfield Road,  
Tipton / West Midlands, DY4 9AP  
Tel: +44 121 5213600 E-mail: salesuk@iwis.com

Reusable Transport Packaging

**REUSABLE. RETURNABLE. PROFITABLE.**

information@schoellerallibert.com  
www.schoellerallibert.com

**Schoeller Allibert**  
Innovating your logistics for a better world.

Shrink Wrapping Machinery

**YPS YORKSHIRE PACKAGING SYSTEMS**

**SHRINK WRAPPING solutions you can TRUST**  
since 1977

**MANUAL TO FULLY AUTOMATIC SYSTEMS**

L Sealers Side Sealers  
Sleeve Sealers Shrink Tunnels  
Shrink Film Spares & Service  
Packaging Automation

**01924 441 355**  
www.yps.co.uk info@yps.co.uk

**F&D TECHNOLOGY**

To advertise in the Suppliers' Directory please contact

Katie Healy  
+44 1474 558976

[katie@bellpublishing.com](mailto:katie@bellpublishing.com)  
[foodanddrinktechnology.com](http://foodanddrinktechnology.com)

Temperature, Humidity and Water activity

**rotronic**

MEASUREMENT SOLUTIONS

**ROTRONIC manufactures precision**

Temperature, Humidity, Water Activity, CO2, Pressure and Airflow instruments.

Our RMS monitoring system provides all data remotely.

Contact us to discuss your application.

Rotronic Instruments (UK) Ltd  
Email: [instruments@rotronic.co.uk](mailto:instruments@rotronic.co.uk)  
Web: [www.rotronic.co.uk](http://www.rotronic.co.uk)

**Tel: 01293 571000**

Training

**Technical Training Solutions**

Providing Practical Engineering Skills For The Food Industry

Operator Training  
Electrical Maintenance  
Mechanical Maintenance  
Instrumentation

City & Guilds Approved Centre

[technicaltrainingsolutions.co.uk](http://technicaltrainingsolutions.co.uk)  
tel.01634 731470

Valves & Steam Traps

**ARI ARMATUREN**

Control - Isolation - Safety - Steam trapping

The equipment provider for users of steam, thermal oil & hot water

Valves  
Steam traps  
Engineered systems

ARI-Armaturen UK Ltd  
Tel: 01684 275 752  
Email: [enquiries@uk.ari-armaturen.com](mailto:enquiries@uk.ari-armaturen.com)  
Web: [www.ari-armaturen.com](http://www.ari-armaturen.com)

Viscosity & Texture Analysis

**BROOKFIELD AMETEK**

SUPPLIERS OF VISCOMETERS, FOOD TEXTURE ANALYSERS & THE POWDER FLOW TESTER.

SAMPLE TESTING & CONSULTANCY

Call or visit on-line for product or instrument service and calibration information.

Tel: 01279 451774  
[www.brookfield.co.uk](http://www.brookfield.co.uk)  
[www.textureanalysis.com](http://www.textureanalysis.com)

Water Quality Monitoring

**Pollution & Process Monitoring**

Manufacture & supply of continuous water quality instrumentation

Product Loss  
Effluent Quality  
Plant Load  
Spill Detection

pH, Conductivity, DO  
Temperature, TOC, Oil  
Turbidity, Ammonia

[www.pollution-ppm.co.uk](http://www.pollution-ppm.co.uk)  
Tel: +44 (0)1732 882044  
[s.tuck@pollution-ppm.co.uk](mailto:s.tuck@pollution-ppm.co.uk)

Weighing

**APPLIED WEIGHING**

**W**

**Weighing Solutions for the Food & Drink Industry**

Backed up by a Nationwide Service Organisation

APPLIED WEIGHING INTERNATIONAL LTD  
Tel: (0118) 9461900 Fax: (0118) 9461862  
Email: [sales@appliedweighing.co.uk](mailto:sales@appliedweighing.co.uk)  
Web site: [www.appliedweighing.co.uk](http://www.appliedweighing.co.uk)

# Sixty seconds with ...

## Nimisha Raja



### Nimisha Raja, founder and CEO Nim's Fruit Crisps

Nimisha Raja is founder of Nim's Fruit Crisps, a multi award winning snack. She set up Nim's Fruit Crisps in 2012 after being inspired to combat unhealthy snacking patterns in kids and adults alike. Nimisha's passion for healthy snacking and a healthy life-style in general has led her to spend years researching and developing various healthy snacks.

**Describe yourself in three words**

Passionate, committed and innovative.

**How did you get to where you are today?**

Nim's Fruit Crisps was an idea that turned into a passion, which has since turned into an enjoyable, yet demanding mission.

**What does a typical day look like for you?**

45-minute drive into work, so I arrive at 7am to oversee the start of production on the factory floor. I go over the plan for the day with the sales and technical teams, before wading through lots and lots of emails and frequent checks on production throughout the day. I tend to leave around 9pm.

**What's your biggest professional achievement and what made it so special?**

The innovation that has helped us successfully launch our fruit and vegetable crisps, edible teas and infusions, which have won so many industry plaudits and the Queen's Award this year. What makes it really special is that retailers and consumers have embraced our products.



**What is the most satisfying part of your job?**

Getting a phone call or email from a large retailer asking to stock our products.



**What are the biggest challenges you are facing as a food manufacturer?**

Finding the right people at a managerial level who get what Nim's is all about.

**How do you think coronavirus will change the food industry?**

In the long-run, I think it will help British manufacturing as there is a new appetite to produce more on our own shores. However, I think it will take time for smaller manufacturers to make up the losses they have suffered and will continue to suffer for some time to come.

**What have been the highlights of your company's history, in your opinion?**

There have been many, but the standout ones have to be our listings in Morrisons, Tesco, and Waitrose, the incredible press coverage we have received around the world, the loyalty and dedication of our core production team and Innovation titles from *Food Manufacture* and The Queen's Award for Enterprise.

**What is your pet hate?**

Misleading consumer information on food packaging.

**Give us a prediction for the food category Nim's plays in over the next 12 months?**

It truly is an exciting and fast-growing category, which rewards innovation and I'm excited about the opportunities it affords small companies like Nim's Fruit Crisps. Going forward, I think an increasing number of customers are looking for transparency in food labelling in terms of ingredients, nutritional value and provenance.

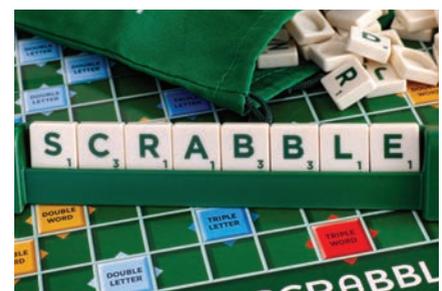


**Tell us something about yourself that few people know?**

I was the youngest ever KFC restaurant manager when I was just 19.

**How do you relax?**

With the current lockdown in mind, playing scrabble on my phone has been a godsend, whilst listening to music always helps me to relax. 🎧



Introducing ...

**WORLD**

*Brussels*

**CONFECTIONERY**  
**CONFERENCE**

**2020**

chocolate, sweets, snacks & bakery



**Brussels, Belgium**  
**September 2020**

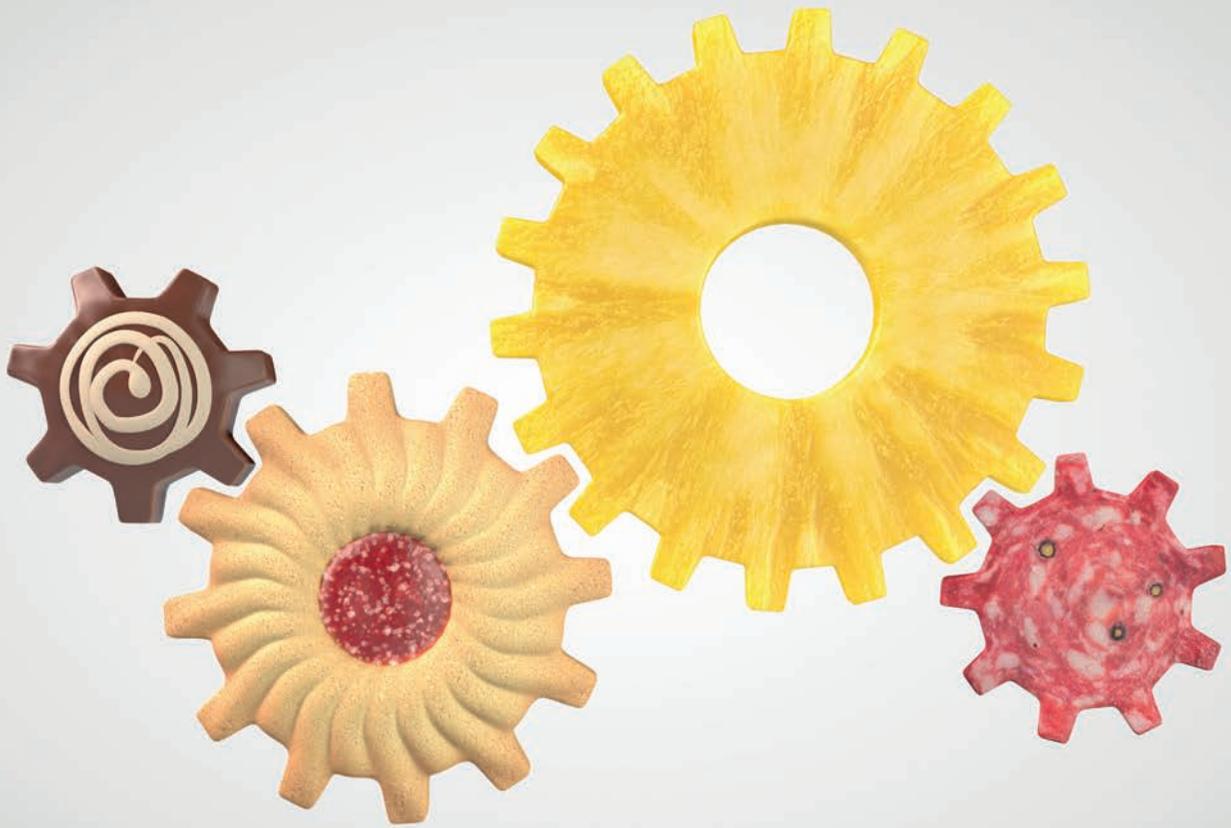
[confectioneryconference.com](http://confectioneryconference.com)

With support from Official Sponsor



Organised by





Retail ready. Smarter, faster, together.



Every business has challenges; ours is to help you overcome yours. Ishida can help you get your product to market quicker, without compromising quality or compliance. From foreign body and leak detection through to checkweighing, working smarter, faster, together, we can help you achieve higher standards at every stage of your quality control process.