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Spring 2021 | Issue 1 | Vol. 25

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INGREDIENTS

Keeping it Fresh



Equipment Manufacturing Forges Ahead

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In line with current estimations, a return to the 2019 level is not very likely for 2021

Tudor Vintiloiu

According to a recently published report by the VDMA Food Processing and Packaging Machinery Association, since the financial and economic crisis of 2009, there has only ever been an upwards trend for food processing and packaging machinery. In 2020, however, the 10-year growth phase in the mechanical engineering sector came to a temporary end with a decrease of 9% to EUR13.9bn.

In the packaging machinery sector, production dropped by a total of 8% to EUR6.7bn. The change rates varied in the individual subsectors, as such, the demand remained relatively stable for bakery machinery. The subsector reported a good domestic business, which overcompensated the decrease in exports.

Production of confectionery machinery dropped by as much as 18% below the very high level of the previous year, which specialists explained was due to the sector being very active in non-European countries and being hit hard by the COVID-19 pandemic. In addition, the potential customers include many multinationals that have simply frozen their investment projects.

On the export front, manufacturers recorded downturns of 5% to 6%, on average, with confectionery machinery market registering a 24% drop. Experts agree that the severe impact is also directly related to the limited or complete standstill of business activity in the hotel and catering industry as a result of the Corona crisis.

From a regional point of view, foreign shipments of food processing and packaging machinery decreased in almost all economic regions in 2020, except of North America. In particular, deliveries from Germany to the USA increased by 8% to over EUR1.2bn. Positive impetus also came from important individual markets, such as Russia, Mexico and China. However, deliveries to the EU-27 as the most important sales region dropped by 15%. Exports to Asia also decreased by a significant double-digit percentage.

According to current estimations, a return to the 2019 level is not very likely for 2021. “We do expect production to grow this year, but it is unlikely to be in double digits,” says Richard Clemens, managing director of VDMA. The general outlook for the industry is positive, according to the trade association’s managing director, as the sector’s companies are well positioned internationally and continue to benefit from a rising global demand for processed and packaged food. •



TUDOR VINTILOIU

Editor in Chief

email: tudor.vintiloiu@trade.media

Tel: +40 21 315 90 31

CRISTINA NAE

Advertising Sales Director

email: cristina.nae@trade.media

Tel: +32 499 73 11 14

ADRIAN CODREANU

Production Manager

email: adrian.codreanu@trade.media

Mobile: +40 722 507 227

SIMONA DUMITRESCU

Circulation Manager

email: simona.dumitrescu@trade.media

RALUCA CANESCU

Publisher

raluca.canescu@trade.media

Tel: +40 21 315 90 31

NICOLETA MARASESCU

General Manager

nicoleta.marasescu@trade.media

Tel: +40 21 315 90 31

Contributing writers

Campden BRI, Technavio, Euromonitor International, Sharmila Rajah, Mintel, Markets & Markets, IBISWorld

Editorial office:

G-ral David Praporgescu Street, no.1, District 2, Bucharest, 020965, Romania
Tel: +40 21 315 9031

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DKSH Expands Distribution Partnership with Kemin Food Technologies Asia



DKSH has signed a distribution agreement with Kemin Food Technologies, a global leader in shelf-life and food safety solutions, to provide its product range in the Philippines and Indonesia. Under the agreement, DKSH will provide marketing and sales as well as distribution and logistics for Kemin's range of antioxidants and antimicrobials in the Philippines and Indonesia for the meat and seafood markets. The products are used for applications in processed foods, snacks, bakery, confectionery, beverages, dairy products, fats, oils, sauces, noodles and seasonings. DKSH currently provides Market Expansion Services to Kemin in Vietnam, Myanmar, Cambodia and Singapore.

Kerry Expands in South East Asia



Food group Kerry is to expand its presence in South East Asia by investing EUR30m to build a second manufacturing facility in Karawang, Indonesia. The new facility, which represents Kerry's largest-ever capital investment in the region, will significantly expand Kerry's taste offering. It will be Kerry's second manufacturing site and third facility in Indonesia. It will encompass a flavor-manufacturing site along with a sampling hub and a research and development pilot plant. A wide range of flavor technologies will be manufactured in Karawang, allowing this new site to support Kerry's fast-growing taste business and its food and beverages systems across all food categories, including beverage and snacks which is among the fastest-growing end-use markets for Kerry.

Givaudan and Bühler Open Protein Innovation Centre in Singapore



Givaudan and Bühler recently announced the official opening of the APAC Protein Innovation Centre. Located at the Givaudan Woodlands site in Singapore, the Protein Innovation Centre welcomes food processing companies, start-ups and university researchers from across the Asia Pacific (APAC) region keen to co-create plant-based food experiences that do good and feel good. The Centre combines the pilot technology of Bühler's extrusion and processing equipment with Givaudan's new

culinary facilities and its world-leading expertise in flavor, taste, ingredient, and product development. The Protein Innovation Centre is constructed with the end-to-end process of plant-based protein production in mind. Businesses will also benefit from support throughout the co-creation process, from raw material selection to product

development and research, to application, flavor science, extrusion, and consumer testing. At the Centre, customers can develop high-quality products suitable for Asian culinary applications at scale. The facility can produce up to 40 kilograms of plant proteins an hour and features dry extrusion, as well as a newer wet extrusion technology that delivers a fibrous structure more akin to muscle, and higher protein content as compared with dry extruded products.

ADM Opens New Plant-based Lab in Singapore

ADM celebrated the opening of its new plant-based innovation lab, located in ADM's Biopolis research hub in Singapore. The lab will develop next-level, on-trend and nutritious products to meet growing food and beverage demand in the Asia-Pacific region.

The new facility features a combination of experts in proteins and texturing ingredients, coupled with flavor specialists, allowing ADM to quickly and efficiently create tailor-made solutions for the Asian consumer palate. This lab gives ADM the ability to test flavors, textures, fats and binding characteristics in-house and accelerate product development for customers. Additionally, the lab can provide medium-scale sampling through a variety of forming and freezing capabilities to support



market evaluation of new products and solutions.

The ADM Biopolis research hub in Singapore features a wide range of capabilities, including a food and flavor analytic lab; a beverage and dairy applications lab and pilot plant; a bakery and confectionery lab; a meat and savory lab; a sweet and savory creation lab; sensory evaluation facilities and a customer innovation center in addition to the new plant-based innovation lab.

Barry Callebaut Opens its New Chocolate Factory in India



The Barry Callebaut Group announced the official opening of its new chocolate and compound manufacturing facility, located in Baramati, India. The new factory is located about 250 km southeast of Mumbai and represents its biggest investment in India to date. The new chocolate factory and warehouse include an R&D lab, and assembly lines capable of manufacturing chocolate and compound in different delivery formats, catering to the various needs of its customers — international food manufacturers, local confectioneries and semi-industrial bakers and patisseries.

Once fully operational, the 20,000 square meter facility will employ between 100 to 120 people, thus creating new skilled jobs, mainly in engineering and production. The new plant also features a variety of energy and water-saving solutions in the areas of infrastructure, production equipment and the overall facility energy control system.

New Export Target for Turkish Confectionery



Turkey's confectionery and chocolate industry has set an export target of USD1.5bn for 2021, according to a trade body quoted by Anadolu Agency. During the COVID-19 pandemic, the industry's exports stood at USD1.3bn in 2020, per a statement made by the Aegean Exporters' Union.

In 2020, confectionery products with chocolate and cocoa made up the largest chunk of exports (USD540m), with exports of cocoa-free white chocolate products at USD476m. The industry's biggest export markets were Iraq, the US, and Iran, with USD153m, USD143m, and USD52m worth of exports, respectively, the statement said. These three were followed by Israel with exports worth USD49m and the UK at USD48m.

Grupo Bimbo Acquires Modern Foods

The Indian bread brand has been bought by Mexico's largest food and bakery company Grupo Bimbo from homegrown private equity fund Everstone Capital, according to Business Today. Everstone had acquired the brand from Hindustan Unilever in 2016.

Everstone's bread and bakery platform Everfoods Asia consists of Modern Bread brand as well as others like Cookie Man. Modern bread holds around 35 – 40% market share of the Indian bread market, as mentioned in a report in The Economic Times. Modern Foods



competes with other bakery brands such as Harvest Gold, English Oven, Nature's Own, and Britannia.

It has a distribution network of over 80,000 retailers across the country. It had acquired NCR-based Supreme Baker India, before which it had acquired Chennai-based Australian Foods India and Cookie Man brand.

Production of Food Processing and Packaging Machinery Decreased in 2020

According to a recently published report by the VDMA Food Processing and Packaging Machinery Association, in 2020, the 10-year growth phase in the mechanical engineering sector came to a temporary end with a decrease of 9% to EUR13.9bn. In the packaging machinery sector, production dropped by a total of 8% to EUR6.7bn. In food processing machinery, the change rates varied in the individual subsectors. Production of meat processing machinery slightly increased to over EUR1.2bn. The demand also remained stable for bakery machinery. Both subsectors reported a good domestic

business, which overcompensated the decrease in exports.

Production of confectionery machinery dropped by 18% below the very high level of the previous year. There was also a double-digit drop in the production of beverage machinery. "These two sectors are very active in non-European countries and are among those suffering from the Corona pandemic. In addition, the customers of these industries include many multinationals that have simply frozen their investment projects," explains Richard Clemens, managing director of VDMA.



Bellevue Ingredients & Solutions Launches GEM PLUS Functional Durum Wheat Flours

Gem Plus is a range of functional durum wheat flours that can be adapted to all bread making processes and bakery applications. According to a press release, it can solve problems such as volume, softness, freshness, annealing after freezing, machinability, etc.

The new range of flours guarantees optimal results, consistency and constant quality, and allows industrial processes to be optimized while adhering to a clean label approach. Gem Plus allows bakers to take advantage of the many benefits of durum wheat: more taste, a bright golden color, added fiber and protein, increased hydration for better yield, less stickiness, fewer defects on the lines and all this without the need to modify the label.



MULTIVAC Introduces Full Wrap Labeling Solution for Pizzas

The company has recently launched a full wrap labeling suited for pizzas, tortillas, pitta breads, quiches, tart bases, and other flat products: The L 310 full wrap conveyor belt labeller. According to a press release, this model makes the C labeling and D labeling of packs possible at speeds up to 120 packs per minute. The label width is up to a maximum of 500 mm. The labeller can also be equipped with an integrated printer, as well as a zero downtime function and label or print monitoring for maximum output,



efficiency and process reliability at even the highest throughput. In addition to PP and PET labels, the range also includes sustainable materials made of paper or from renewable sources. "By matching the label material to

Ingredion Announces New Modified Potato Starch

The company has launched ULTRA-TEX 1311 Modified Potato Starch. This product can be used in a wide variety of traditional and alternative formulations to create indulgent textures, improve stability vs. native potato starch, or replace oil without compromising sensory appeal. The starch is optimal for plant-based, low-fat, reduced-fat, better-for-you, and keto-friendly applications.

The ingredient's thickening properties can lower overall usage levels of starch up to 30%. When used in dressings, ULTRA-TEX 1311 modified potato starch offers a potential fat reduction of up to 30%, providing manufacturers a broader range of options for replacing fat without compromising mouthfeel and texture.

ULTRA-TEX 1311 modified potato starch is sourced locally in the U.S. and is made from an ingredient that is widely accepted and recognized by consumers. Labeled as modified potato starch or food starch modified, it can support a number of appealing package claims, such as "non-corn," "non-GMO" and "non-grain."



the packaging material, we can ensure that the constituent parts of the pack can be separated to meet the recycling requirements. Adhesives, which can be dissolved or washed off, enable the individual packaging components to be easily separated, so that they can then be directed to the particular recycling stream," explains Michael Reffke, product manager at MULTIVAC Marking & Inspection.

New Technology Can Now Protect Bakery Workers from "White Lung"

Monitoring technology developed for the military can now help protect bakery workers from "white lung". Lightweight wearable monitors have been developed by Arosa Instruments using patented air sampling technology developed by the Defence Science and Technology Laboratory (Dstl) and the University of Hertfordshire.

The monitors weigh just 95 grams and are small enough to be worn on a lapel and they allow inhalable dust to be monitored over an eight-hour shift providing real-time information on breathable dust levels and using flashing LEDs to alert workers if they are over-exposed. Furthermore, they provide downloadable records of a worker's dust exposure through the day, allowing employers to identify potential dust exposure hotspots.



The new technology will help protect workers from diseases such as White Lung, also known as Baker's Asthma, caused by breathing in flour dust. Bakers and flour confectioners are the second most affected occupations after vehicle paint technicians.

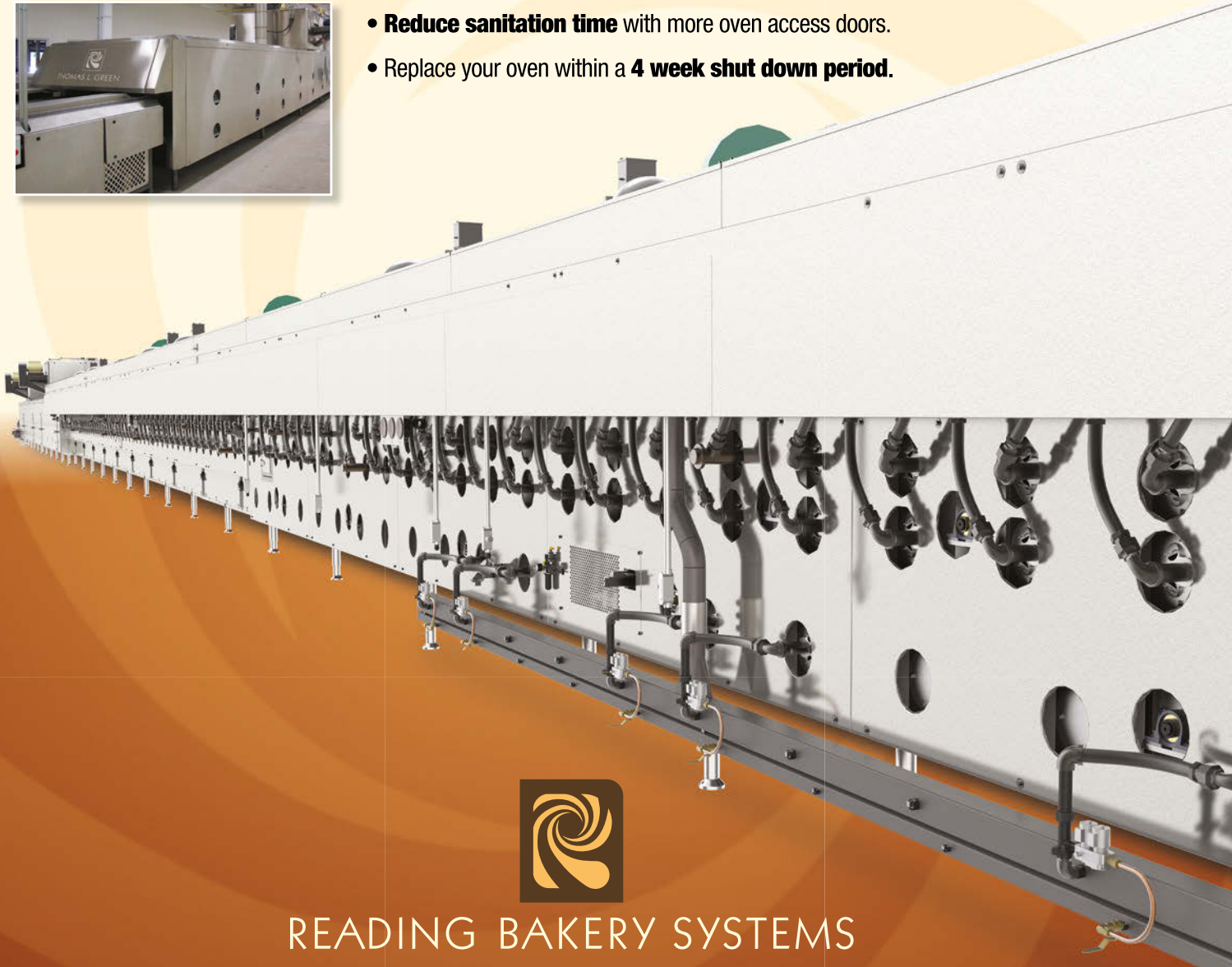
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Hybrid Ovens **Elevate Baking**

Different baked products require different baking profiles and sometimes even different oven configurations to achieve the optimal product. Various types of baking chambers can be combined in hybrid ovens to give the ideal heat transfer during the baking process.

By Tudor Vintiloiu

For example, direct gas-fired zones can be combined with convection or indirect radiant technology. Each product has an ideal baking profile, which defines the temperature at each stage of the baking process to achieve good structure, moisture content and color. The specification of the oven zones, their heat transfer mode and their lengths are designed to achieve the required baking profile. The main reason customers purchase hybrid ovens is their inherent versatility and flexibility. They combine the best characteristics of radiant and convection baking. All have attributes that are ideal for one part of the process but not necessarily all of it. Combining the benefits can create a unit that matches the specific needs of any kind of biscuit, cookie, cracker or bar. "The fundamental demand is flexibility. Many customers require an oven that can bake every type of biscuit and cracker. Customers that currently bake just one brand of biscuit choose a hybrid oven to protect their future: tastes change and it might be necessary at some point to switch production to another type of biscuit, or produce several different types. They cannot afford to be trapped in a single product environment with an oven that is not adaptable. The oven is the most expensive unit in a biscuit line, and most have a long service life," Baker Perkins specialists told us.

According to Paolo Betto, sales area manager, GEA, "the hybrid baking technology offers an extremely flexible tool in the hands of the bakers: in cracker production, as an example, while the DGF (direct gas fired) section upfront offers ideal heating power technology for removing most of the moisture, the convection at the end, softly continues the extraction of the little amount of moisture still left



inside the dough piece, allowing, at the same time, an optimum, fine-tuned control on the final coloring of the top surface and final moisture level. The technical challenge is represented by the ideal proportion between DGF & convection: deep experience of baking technology is necessary to make the right choice." When discussing the various demands they get from their customers, Remco Bijkerk EPM and head of R&D at AMF Den Boer says there is a lot of variation: "from small production ovens / band ovens to change from manual bakery to automated

processes, up to real big factories who require ovens of over 100 meters to bake 24/7 at real high capacity. Due to our flexible and modular oven portfolio, AMF is able to help each bakery and factory that needs continuous baking processes and equipment. Customization is always open, engineered to order, configured to order as well as standard solutions - it is what AMF has been bringing to the market for many years." For Auto-Bake Serpentine's customers, future proofing in today's dynamic market means introducing new product formats continuously. "Our hybrid oven technologies coupled with our flexible complete line automation enables our customers the ability to quickly and affordably create trendy new products that feed the market's insatiable appetite for diversified premium products. [...] To put it simply, customers want innovative equipment that gives them an advantage over their competition with flexibility to pivot quickly as market trends and demands change rapidly. Large capacity lines are not as desirable as they once were, today dynamic and flexible lines are much more important," Scott McCally, president, Auto-Bake Serpentine told us.

UP-TIME AND MAINTENANCE

Ensuring an oven functions at its optimum settings pays dividends by maximizing product quality and productivity, and minimizing production and energy costs.

An oven is the most costly item in a biscuit, cookie or cracker line: maintaining or upgrading to optimum levels makes a substantial contribution to plant profitability and effectiveness. Baker Perkins has a program of services to maintain ovens to the highest standards, enhance efficiency, and add the latest technology upgrades to installed equipment. As far as cleaning and downtime is concerned, Baker Perkins now offers ovens with large access doors at 2-metre intervals along the non-control

The technical challenge is represented by the ideal proportion between DGF & convection: deep experience of baking technology is necessary to make the right choice.

side of the oven to maximize access and minimize down-time.

The Den Boer Hybrid oven, the Multibake H, is built upon the modular Multibake oven technology, already proven successful for more than 100 years.

This means that the options available on all tunnel ovens are also available on the hybrid version. "Especially the Radiant and Impingement ovens are maintenance wise very low in operational cost. They require minimal time in maintenance because of the central heating system. The Direct Fired ovens are equipped with a closed air gas-zero principle and therefore also maintenance wise less time consuming than the venturi principle. Downtime against uptime percentage achieved in the field is between 0,001-0,004%. This means our AMF Den Boer ovens run 24/7 in many bakeries around the world, with low down times for maintenance and cleaning," Bijkerk explains.

Scott McCally of Autobake Serpentine says that in their business uptime is everything. "Decades ago, preventative maintenance yielded to predictive maintenance decreasing unplanned downtime by more than 25% in many cases. Today predictive maintenance tools within Industry 4.0 are rapidly delivering a similar impact as advanced algorithms and massive real time data mining provide the backbone of machine learning or artificial intelligence (AI). At Middleby we continue to develop equipment automation that will one day enable "lights-out" food production," he points out.

A Hybrid Oven requires in general less maintenance than a traditional single-heating system one. If we take for example a cracker oven, the hybrid configuration requires approx. 30% less ribbon burners if compared to an old fashion single-heating system oven, with consequent drop of maintenance time, maintenance cost and necessity of spares,

“

Paolo Betto, sales area manager, GEA



Scott McCally,
president, Auto-Bake
Serpentine

“

Large capacity lines are not as desirable as they once were, today dynamic and flexible lines are much more important.

says Paolo Betto of GEA. "Big improvements have been obtained by the adoption of big man-holes apertures on the non-control side of the baking chamber; this feature, enormously facilitates the accessibility to the baking chamber for cleaning or inspection purposes. Its pre-assembled module construction generally allows a shorter installation time with consequent reduction downtime and man-labor requirements," he adds.

We offer flexible and global solutions, with a local touch. Also global clients have local bakeries, so we work with them to ensure their products are baked in the way the market desires and enjoys them.

Remco Bijkerk, EPM
and head of R&D at
AMF Den Boer



DEMAND IN THE APAC

The main "general" topics recurring during the technical conversation with customers, can be summarized as: higher production rate, longer or wider oven design, in order to optimize the limited space available in their existing bakeries, and flexibility.

"On this respect we can offer complete lines up to 2 meters of width, the widest ever built in the market so far," says Betto. "While higher flow-rate production and

flexibility seem in contradiction, in reality, the technologies we have developed throughout the years, allows the conjunction of these two apparent in-conflict concepts. Energy saving technologies is another question which is raised around 30-40% of the time." AMF's Bijkerk reveals their company sees differences in demands all over the world. "This has to do with the end products, how customers like to eat their bread, rolls, pastry, cake and pizzas. We offer flexible and global solutions, with a local touch. Also global clients have local bakeries, so we work with them to ensure their products are baked in the way the market desires and enjoys them."

McCally adds that there used to be a more noticeable difference in client demand in the past, but the APAC market soon learned it was more economical to rely on large companies like Middleby to offer turnkey full solutions. "Today, we find that, much like our largest US producers, they want the same single point of responsibility for their new projects," he concludes. •

Baker Perkins
specialists

Customers that currently bake just one brand of biscuit choose a hybrid oven to protect their future: tastes change and it might be necessary at some point to switch production to another type of product.

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Software: The Business Backbone

Profits can be maximized as a result of the accurate synchronization of the different aspects of a bakery business, as well as the different machines that make up a production line. Robots, artificial intelligence, cloud data, algorithms, machines that talk to each other, perform complex analyses and provide highly specific alerts. These are all tools that depend on software.

By Tudor Vintiloiu



One such tool is the Electronic Controls Design (ECD)'s M.O.L.E. MAP software which is a powerful data collection and analysis solution that complements their portable thermal profiler, the BakeWATCH M.O.L.E.®. BakeWATCH, which is extremely easy to use, is designed to accompany baked goods and food products as they travel through ovens and freezers.

The software features a unique S-curve management tool that utilizes the patented Breadometer™ thermal sensor to manage yeast kill, gelatinization and arrival regimes. All are calculated automatically and reported as percentages of total bake time. This enables the user to make the necessary adjustments needed to optimize crumb set, texture and moisture content and ultimately increases yield and profitability.

"ECD first introduced the in-transit thermal profiler in 1986. Initially intended for use in the electronics manufacturing industry, other applications such as baking and food processing were soon identified. The product range continues to grow with specialized sensors and thermal protective barriers being added constantly. Additional software features are always being developed through constant dialogue with our customers and partners across all industries," says Ray Pearce, ECD BakeWATCH product manager. BakeWATCH hardware and software solutions are scalable, making them suitable for any size bakery and delivering the ability to grow with the business.

Thermal barriers are available for numerous time/temperature/size combinations. There are additional sensors available for measuring humidity and the unique OvenBALANCER sensor will characterize an oven without having to use products as measuring devices. The user is free to add any or all of these features as and when they become a necessity.

"ECD has also developed the BakeWATCH Kill Step Calculator, which automates the data collection, individual dough channel validation, and Salmonella D-Reduction report generation with no data exports required. For FSMA compliance of the post-bake HACCP, this highly productive solution frees the customer from annual consultancy costs, with no need to bring outside services into their plant," Pearce points out.

When discussing customer support and implementation, the company offers online support meetings to analyze results of initial profile runs and provides step-by-step guidance on software downloads, data interpretation and optimization.

"ECD's engineering and technical teams have decades of experience and take a decidedly hands-on approach with customer support. We have received multiple awards for our hardware, software and customer service," Pearce adds.

BOOSTING EFFICIENCY AND REDUCING FOOD WASTE

Food manufacturers suffer, on average, millions of dollars of losses each year due to various process-driven inefficiencies such as rejects due to weight, size and quality variables and color inconsistencies. Seebo's Process-Based Artificial Intelligence solution enables food manufacturers to identify process-driven inefficiencies in their production processes in order to predict and

ECD's engineering and technical teams have decades of experience and take a decidedly hands-on approach with customer support.

prevent production losses. Seebo succeeded in infusing Artificial Intelligence algorithms with deep process manufacturing expertise - giving its solution the unique ability to understand each individual production process. This saves its customers significant funds each year, by revealing the hidden causes of their production losses.

As many food manufacturers face an increasingly challenging and competitive marketplace because of COVID-19 there is an ever-pressing need to increase efficiency, specifically by lowering production losses; and in some cases to meet unprecedented spikes in demand due to changing consumer behavior. According to Seebo, their solution has provided these food manufacturers with the ability to achieve these goals in a highly scalable way - without costly investments in new production lines and facilities.

"The increasingly complex business environment has pushed process manufacturers to explore new ways to eliminate lingering inefficiencies in their production processes," says Lior Akavia, CEO and Co-Founder of Seebo. "These inefficiencies are responsible for significant production losses each year, but in many cases manufacturers didn't have the tools to find the root causes, as these were hidden deep within the complex manufacturing processes and data. That's why we've seen such an increase in demand for Seebo's Process-Based Artificial Intelligence: this is precisely the problem we solve. Seebo grew during 2020 with many new customers," Akavia continued. "But even more significant is our growth with our existing customers, who, by using Seebo, identified clear reductions in inefficiencies and gained significant financial benefits. These customers have implemented us in more production lines as a result, and this demonstrative success is a source of great pride for Seebo." •



*Ray Pearce, ECD
BakeWATCH
product manager*



*Lior Akavia, CEO
and Co-Founder
of Seebo*

The increasingly complex business environment has pushed process manufacturers to explore new ways to eliminate lingering inefficiencies in their production processes.

Accurate Dividing for All Doughs

Designed to automatically and accurately divide the fermented dough into pieces of preset volume for making into loaves, automated dough dividers work primarily by determining dough volume instead of dough weight, as is the case with manual scaling. The actual weight of a dough piece of a given size is a function of dough density, which in turn is variably influenced by such factors as time, temperature, yeast activity, and formulation.

By Tudor Vintiloiu

Experts agree that the main challenge when forming dough comes from maintaining the internal structure obtained during the proofing stage.

The hydration level of the dough also plays a role in the design of dough dividers. Bakeries deal with anything from low-humidity dough like the one used to make rusk, for example, to high rye content, sourdough, or sticky, long-fermentation and high-hydration level dough, with water levels of up to 80% or even more – and equipment needs to handle them equally well.

Harald Burgstaller, international sales manager, WP Kemper told *Asia Pacific Baker & Biscuit* that customers are usually interested in the capacity and weight accuracy of the dividers above all else. In addition to this they also want to be able to produce a wide range of products on the same machine. "Dough dividing and round-molding machines of the SOFT STAR range (SOFT STAR, SOFT STAR PLUS, SOFT STAR CT and SOFT STAR CTi) make up WP Kemper's divider portfolio. They differ in their capacity and design, with the CT and CTi being our latest dividers with an emphasis on hygienic design. The CTi is also our high-

speed divider with a capacity of 60 strokes per minute," he explains.

Niklas Alricsson, export sales director, Sveba Dahlen, says their company offers their Suction Dough Divider in three different models with different levels of capacity, to cater to the needs of their customers. "We manufacture all dividers on order and we make sure every divider has the correct features for each customer. We consider all the extreme types of doughs and the different challenges they present. We are then working with different options on the divider to create the optimized machine," he points out.

DOUGH VISCOSITY

To produce quality baked goods, it is crucial bakers use a divider that maintains the texture and hydration levels of the dough, gently moving the dough through the



Niklas Alricsson,
export sales director,
Sveba Dahlen



There is always a continuous work going on to improve our dividers, but the latest innovation must be the safety features on top of the hopper. This ensures there is no risk to hurt the operator.



machine, preserving cell structure while minimizing shear, compression and ram movement. But the divider must also maintain scaling accuracy. According to Burgstaller, the SOFT STAR dividing and round/molding machines are developed to process soft doughs like bun or donut doughs and also stiff doughs like pretzels. This is due to its proprietary design, which enables the machine to handle the soft to stiff doughs very gently and accurately, so that even cookie doughs with chocolate chunks, for example, can be processed without issues. Alricsson explains that Sveba Dahlen takes a personalized approach, where the company closely works with their clients and the machine is optimized for their specific needs in order to produce the best results for each type of product.

HYGIENE, MAINTENANCE AND SAFETY

Highly hydrated doughs can be sticky which, as well as making handling difficult, can be a concern when it comes to cleaning. This is particularly relevant given the spotlight on allergen issues and specialist diets such as gluten-free. For this reason, some bakers opt to use a dedicated piece of equipment to handle allergen-free dough, although suppliers have worked to ensure their machines can be cleaned down as thoroughly as possible. Alricsson says of paramount importance is to be using the correct and optimized materials for food safety compliance and when it comes to maintenance, to make sure the operator has the proper training for cleaning and operating the machines. Burgstaller explains that with the piston dividing method, bakers can process a wide range of doughs, very accurately and at high speeds. Other methods such as extruding or sheet & cut are either extremely aggressive to the dough or very inaccurate in the dividing weight. There are also issues with round-molding as the dough surface is either too wet or too dry, the specialist

underlines. In order to combat this, the machines have a quite complicated design and are more difficult to maintain. "We have many innovations in our systems and the current main focus is on ease of operation and ease of cleaning. The systems try to take as much of the human error factor out of modern production but keeping the possibility to adjust if desired. All designs also keep in mind that the operator firstly needs to see inside the line to know what needs to be cleaned and then have the possibility to do this with little effort. Our lines are designed in this way," says Burgstaller. Sveba Dahlen's expert reveals that "there is always a continuous work going on to improve our dividers, but the latest innovation must be the safety features on top of the hopper. This ensures there is no risk to hurt the operator."

FUTURE DEVELOPMENTS

Equipment producers agree that future developments will see the dividing process become increasingly automated and efficient. The introduction of smart sensors, coupled with machine learning algorithms will bring considerable improvement to safety, energy efficiency and productivity. "Production will be made easier and quality more constant by having machines that analyze the product and their own condition at the same time. This will automate adjustments in the production as well as maintenance processes," says Burgstaller. Sveba Dahlen's Alricsson also thinks there will be steps taken towards designing the equipment with self-cleaning features by means of a high pressure wash. "This will be a general point of improvement for bakery equipment as a whole," he concludes. •



Harald Burgstaller,
international sales
manager, WP Kemper



Production will be made easier and quality more constant by having machines that analyze the product and their own condition at the same time. This will automate adjustments in the production as well as maintenance processes.

Sanitation & Food Culture in Asia and the Pacific

Unsanitary equipment and insufficient hygienic level in the food industry lead to increased populations of microorganisms and can compromise quality and safety. Sanitation is an important part of the HACCP system, as its application significantly eliminates microorganisms in the production process. As a result of non-compliance with sanitation procedures, food products are contaminated and undesirable foodborne illnesses of the consumer occur.

By Tudor Vintiloiu

Data from market research agency Markets and Markets revealed that the global food safety testing market (which covers both tools and technology) was worth some USD17bn in 2018, and is expected to grow at a CAGR of 7.7% to hit USD24bn by 2023. "This growth will be driven by an increased need for testing, more demand for packaged foods, globalization in food trade, an increase in foodborne disease outbreaks and more contamination incidents," said the report. According to The Food and Agriculture Organization of the United Nations (FAO), the highly diverse food culture in Asia and the Pacific leads to various food safety issues that require solutions with country and region specific approaches. Every year more than 275 million people fall ill and 225 000 people die due to food borne diseases in Asia and the Pacific region. Fast urbanization, rapid growth of population, new technologies in the production and changing environmental conditions trigger the emergence of new food safety threats. Asian food culture has a unique structure with a rich variety of food products consumed directly or prepared in traditional cuisine with rice and spices native to the region. Street food also constitutes a large part of the food consumption preference.

COVID-19 AND FOOD SAFETY

FAO has urged countries in the Asia-Pacific region to wholeheartedly continue with their efforts to improve food safety along agri-food chains.

"Food safety standards and Codes of Practice have never been more important than today," said Sridhar Dharmapuri, a FAO Senior Food Safety and Nutrition Officer while speaking at a dedicated webinar. "COVID-19 cannot be transmitted through food. However, when we reach the end of lockdowns, countries will be looking to jumpstart their economies and increase trade, both domestic and external. Food safety and hygiene will be vital to ensure consumer confidence," he added.

The FAO webinar participants agreed that the pandemic has had a positive impact on global food safety standards. Frequent handwashing, sanitizers at homes, workplaces, on public transport and everywhere else has made hygiene and cleanliness everybody's choice weapon to push back the pandemic. "The more this 'new normal' takes root and instills the sense of keeping clean all the time, the safer our food supply becomes," they acknowledged.

Food control consists of two parts – the regulatory framework and standards and practices. "Laws are difficult to enforce among the large populations in Asia. It is





easier to educate and delegate the adoption of good practices to industry and consumers that promote food safety," said Dharmapuri. "It's in everyone's interest - it costs very little but can increase incomes, improve nutrition and make a real difference to people's lives. Let's use the good habits COVID-19 has forced us to cultivate to this end," he added.

EQUIPMENT DESIGN

Hygienic design guidelines take into consideration how to design, construct and install the equipment and associated infrastructure needed for the food storage, processing and distribution.

In general, the hygienic design aims to enhance control of potential external and internal hazards.

External hazards include microorganisms, airborne particulate matter, airborne chemical taints, pests, and unauthorized human access.

Internal factory hazards comprise microorganisms from raw materials, chemical taints from product and cleaning residues as well as allergens, particulate matter - glass pieces, metal fragments, flaking paint), human contamination.

"It is much easier to design continuous cleaning systems into new equipment design, in order to develop a system that is truly hygienically designed and easy to clean and maintain. This is the ideal way

to get to a full-proof solution that works well and consistently," says Evan Reyes, Sales Director, Sanitation Division at Goodway Technologies. "When belts are continuously cleaned and rollers never get dirty, production flexibility on that line is nearly unlimited, changeovers are all but eliminated, and customers can take on more orders and smaller orders within existing production lines," he added.

Equipment manufacturer Rademaker says their guidelines are directly derived from various high-end requirements for hygiene and cleanability such as the GMA standard and EHEDG recommendations. "With excellent machine surface finishing, tilted surfaces, rounded frames, FDA approved materials, minimized hinges and bolts and numerous other items, the line is living up to the highest industrial requirements for hygiene. An open design enables easy cleaning without compromising the operator's safety. Belt lifters and retractable belt tensioners achieve accessibility for cleaning and inspection," company representatives told us.

According to them, apart from unmatched product quality and practically zero risk for contamination, the overall combination of the above improvements results in reduced cleaning time, increased production time and strongly reduced maintenance. •



Keeping it **Fresh**

Long shelf-life baked products have become increasingly sought-after by both retailers and customers in recent times. This trend is good news for bakers, also, as it translates in fewer returns and higher margins. In this context, ingredients and other products that can help prolong the bread's life are always welcomed.

By Tudor Vintiloiu

Many things have changed since the advent of the global COVID-19 pandemic but one issue that has impacted the bakery category specifically is the increasing demand for packaged baked goods. As a result, more producers are using functional ingredients to promote the shelf-life of baked goods in order to ensure optimum quality and freshness. *Asia Pacific Baker & Biscuit* asked ingredients experts Beneo and DSM to share their expertise and take us through the various shelf-life extending solutions in their respective portfolios.

COVID-19 CATALYST

The demand for packaged baked goods has been driven in part by a desire from consumers for 'hygienically wrapped' products, as well as the move away from the physical bakery counters to online and pre-packed bakery treats. According to McKinsey and Co., throughout the pandemic, about 15% of consumers in France, Germany, Italy, Spain, and the UK shopped for groceries on a website that they had never used before and among those consumers, more than 50% said they intended to continue shopping at their newfound site for at least some part



of their grocery needs. "As a result of this change in shopper behavior, producers have been looking more closely at how to deliver the best quality products to the door of consumers, and many have been turning to functional ingredients to overcome some of the challenges this can present," says Rudy Wouters, vice president BENEEO Technology Center. According to DSM, lunch on-the-go has transitioned to enjoying a sandwich at home for many consumers in recent months. At the same time, people are increasingly moving towards more wholesome and traditional food choices like bread – particularly whole wheat varieties with high fiber levels – that are easy to prepare at home. This has placed higher importance on the shelf life of baked goods, with manufacturers increasingly looking for solutions that help to deliver high-quality, consistently delicious baked goods, including bread, that stay soft and fresh for longer when they reach consumers' cupboards. "This is a trend that we expect is here to stay even beyond the pandemic, as today's conscious consumers are increasingly making more sustainable purchasing choices," explains Kjeld van de Hoef, business director Baking, DSM.

CHALLENGES AND SOLUTIONS

DSM offers a broad portfolio of solutions – complemented by application expertise and end-to-end technical support – for helping large-scale bread improver companies and industrial bakers keep baked goods fresh for longer. For example, DSM's BakeZyme® Fresh XL and BakeZyme® Master enzymes address freshness challenges by improving the resilience, freshness and quality of bakery products to maintain a soft crumb and mouthfeel. BakeZyme® Fresh XL increases moistness in a range of bread types, including sourdough, white and rye bread. Meanwhile, the premium BakeZyme® Master maltogenic amylase enzyme complements BakeZyme® Fresh XL by enhancing the sensory profile of and delaying staling in bread applications like ready-to-eat sandwiches (even when refrigerated), and improving the foldability of tortilla wraps. These benefits are important for enhancing consumer appeal and sustainability, particularly when producing tortilla wraps, which rely on excellent foldability.

"DSM's BakeZyme® solutions allow producers to delay the onset of crumb firmness, the most widely used indicator of staling, to keep products fresh for longer and ultimately, reduce food waste. With 20 million slices of bread thrown away annually in the UK and Dutch households wasting 9kg of bread per year, this issue is rising fast to the top of the global sustainability agenda," van de Hoef explains.

According to Beneo, a key issue when packaging iced baked goods, for example, is that the topping can become wet and sticky and run off, giving products an unappealing look. This is because standard icings are sucrose-based, mainly consisting of a mix of sugars with liquid or fat. These are often flavored or colored to create tempting toppings to entice consumers to purchase. However, there are technical challenges, both during and after the production of iced bakery products, that can create shelf-life and packaging challenges.

FREE WATER MIGRATION

"For example, the composition of a donut coating is a decisive factor when it comes to keeping products fresh and storable for a long time. A conventional icing made from regular sugar (sucrose) has a lower water activity (aw) than the donut itself. As a result, the icing gradually takes up water from the donut because free water is moving from a product with a high to low aw value. This results in iced baked goods that are dry, while the icing becomes sticky and often adheres to the packaging, giving the end product a poor appearance," says Wouters. To promote shelf-life longevity and improve the appearance of fresh and frozen iced baked goods within packaging, the key lies in managing this free water migration which is caused by the difference in aw value between icing and baked goods.

"Again, taking a donut as an example, the water will migrate from the donut to the icing until aw equilibrium is reached. To overcome this migration, the aw value of the icing needs to be adapted to that of the baked goods," he adds.

The team at the BENEEO Technology Center has successfully resolved this issue of water migration of iced baked goods by combining BENEEO's alternative sugar Palatinose™ (isomaltulose) and sucrose in a specific ratio. This is to ensure that the aw value of the icing is similar to that of the bakery product. The process of managing

20m

slices of bread
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9kg

of bread per
year is wasted
in Dutch
households

15%

of European consumers shopped online for the first time this year

the aw balance has been fine-tuned for both fresh and frozen baked goods, improving not only the quality of the iced products, but extending their shelf-life as well. In a test application on donuts, Palatinose™ was added to the icing via a two-step process. Based on technical trials, prototype recipes have been created for different aw values. The test results showed that by using sucrose and Palatinose™ to balance the aw value and thus limit water migration, the freshly packed iced donuts had extended shelf-life stability. In addition, the icing benefitted from a slightly reduced and more pleasant sweetness in comparison to a pure sucrose icing.

CLEAN LABEL DRIVES NPD

Today's consumers have high demands for their bakery products, looking for not just great taste and long-lasting freshness, but also shorter, more recognizable ingredient lists. This trend fuels product innovation, with baking enzymes like DSM's BakeZyme® Fresh XL and BakeZyme® Master, that are classed as processing aids and do not require labeling, allowing the production of baked goods that deliver on consumer expectations.

In bread production specifically, the clean label trend means that producers need to find alternatives to chemical emulsifiers, such as Di-Acetyl Tartaric Ester of Monoglyceride (DATEM), which are traditionally used in bread manufacture for dough strengthening. "Phospholipase enzymes, such as DSM's Panamore® range, are highly effective, proven alternatives to DATEM. A label-friendly solution, Panamore® produces bread with excellent dough strength, loaf volume and an appealing sensory profile – enabling a consistent performance across flour types and proofing times, as well as keeping bread fresh for longer," says van de Hoef. BENEEO's Palatinose™ is an alternative sugar and will be labeled with its generic name isomaltulose.

"It's important to remember that clean label is no longer a trend but a must-have, and of course BENEEO's NPD process is taking this into consideration," Wouters points out. For example, BENEEO's new clean label functional native rice starch, Rempure, creates a great window of opportunity for manufacturers. As a natural and clean label ingredient, Rempure provides a soft and creamy texture in bakery fillings thanks to the uniqueness of the rice starch, which has small granule size when compared to other starches. In addition, it offers good shelf-life stability and freeze-thaw functionality. BENEEO's precooked native rice starch, Remyline, is another clean label ingredient that can be used to optimize the texture of a range of baked goods. For example, it improves the hardness and crunchiness of different biscuit types and can be added in gluten-free biscuit recipe formulations, along with rice flour. Lastly, native rice starch can also improve the dough consistency of baked goods such as gluten-free pizza crusts or breads and can be used as clean label texturizer in bakery creams. •



The trials have also demonstrated that partial replacement of sucrose with Palatinose™ in glazes provided an extended shelf-life and preserved the glaze transparency during storage at room temperature, as well as throughout the entire freezing and thawing process. Palatinose™ prevented the glaze from sticking to the foil during storage and after defrosting. Furthermore, as with the icing trials, it provided a partially reduced and more palatable sweetness in fresh and frozen packed glazed donuts, when compared with a pure sucrose glaze.

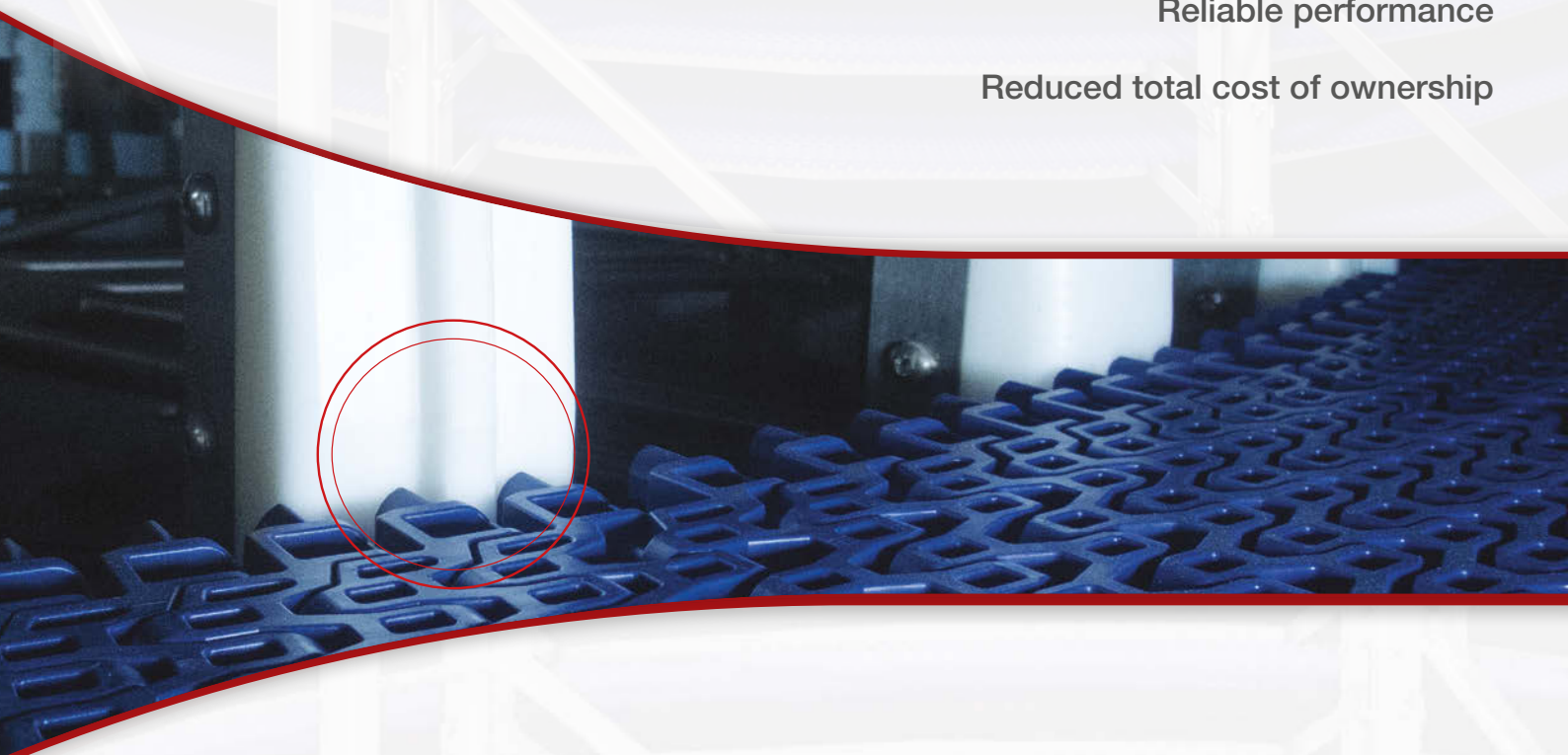


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Reading Bakery Systems: We Focus

David Kuipers, senior vice president of Sales and Marketing, is responsible for the company's sales and marketing efforts. Since January 2017 he has been living in Singapore as he leads the continued growth of the company in South East Asia.

By Tudor Vintiloiu



David Kuipers,
senior vice president
of Sales and Marketing,
Reading Bakery Systems

Tell us a bit about the particularities of the Asian market in regards to bakery equipment and how the demand there differs from your global client base.

We focus attention on both China and SEA but do so on slightly different paths. China is so large and diverse that it requires its own approach. There is a strong base of local manufacturers that service the baking industry; it's not practical for foreign companies to compete against them. However, what RBS brings to the China market is access to snacking products and trends from other markets that may be locally relevant. Further, some Chinese producers recognize the limits of local manufacturing and are open to new processes and equipment innovations from international suppliers like RBS. For them the value proposition is built on efficiency, reliability, sanitation, and future product development.

The greater SEA market is defined by its geography. The region is a collection of distinct nations - many of them island-nations. You can only move around by flying and sometimes great distances. In other markets like NA and EUR there are alternatives such as rail, car or mass transit, so you can sometimes make many visits on the same trip. But this separation over great distance also hints at how distinctively different these nations can be, as each has developed unique snacking culture and habits. So bakery equipment and systems must be applied to individual countries accordingly with careful listening and adaptation.

Finally, the snacking markets here are being developed in front of us. Our client base is constantly searching for snack products that could be successful in their market – but are not present there yet. In more mature markets, the snacks are more defined and those clients are looking for product differentiation.

What are some of the unmet needs RBS has identified in the APAC markets? How is RBS responding to meet these demands?

Because of the strong interest in new products, we have focused attention on general and in-house webinars on these new products from other markets. These have been very successful, particularly during COVID restrictions when R&D, Engineering, and NPD personnel are working remotely and unable to travel. The need for ideas has not stopped at all.

How has the pandemic influenced the market and what opportunities did it create for RBS?

Two thoughts come to mind. First, with travel in the region reduced to virtually nothing, it chilled the normal information flow from visits, shows, plant tours, and so on.

on Being 'Locally Relevant'

However the need for new product ideas and production capacity continued anyway. So we all found ways for this information flow to take place with webinars and meetings via Teams and Zoom. Sure, we all get weary of being on many video calls, but they clearly have met a need. It's been a surprising confluence of improved video conferencing technologies and the need for them during COVID. It really is surprising that we can conduct hours-long conferences, with video feed and screen sharing, from multiple sites now without interruption; only a few years ago that capability was very limited.

Secondly, many of our customers are very busy because they make long shelf-life, prepackaged baked snacks, which is exactly what consumers are purchasing while they work from home. Once they got over the initial shock of adjusting their business to COVID realities, they realized their sales are strong so they turned their attention to investment in additional capacities and products. Compared to other segments of the food business we have been very fortunate.

What are some of the challenges of operating in this 'new normal' and what tools have helped you overcome these challenges?

One big challenge has been installing and commissioning equipment. Travel restrictions on our technical teams have limited our ability to be present during installs, as we would prefer. So both client and supplier have all had to adapt by utilizing local resources and videoconferences as best we can. The work sometimes has to go on.

What are RBS's short- / long-term growth plans in the region?

We plan to continue to grow in this region just as we have in our other global regions. We supply a wide range of snacking systems, so our emphasis here will be on being "locally relevant" in SEA and CHN and developing baked snack products that are adapted to local tastes. Further, thinking beyond our sales presence, we will be increasing our support of these installations with technical teams, service support,

regional project managers and regional manufacturing capabilities.

What is the main driver of innovation and how has the NPD process changed in recent times?

The answer here is two-fold. The larger companies usually have a range of products they already do; they are looking for more efficiency and automation as they expand. They are looking for larger capacity systems that have a lower cost/kg of output. We meet those needs by rationalizing the systems with wider lines, continuous mixing, automation before the oven, and applying improvements to the baking systems. For them, NPD is an internally-led effort; the equipment supplier helps them with efficiency and automation as they expand capacity.

The smaller companies are often led by an entrepreneur who is looking to bring a snacking idea in from another market. Such an entrepreneur is looking for a business case built around a new product. They seek to duplicate the success of a product by duplicating a system done in another part of the world, and they look for partner companies like RBS who can help with new product concepts, formulation, sample development, plant layout, package sizes, product commissioning support – virtually everything they need to import that success into their market. For them, NPD is surveying other markets for products to duplicate.

With international trade-shows absent from the global landscape, how do you reach your potential clients?

For the past year we have been adapting by doing in-house webinars, general webinars, virtual trade shows, new product seminars, sample packages, and of course many Teams and Zoom meetings. Though our trade shows have been absent, our Marketing team has been kept busy with these efforts.

In addition, we have even sold systems this past year by doing "virtual demonstrations" of the process at our Technical Center in the States. Since the client could not attend in person, we had to adapt this way. •



Buns at Full Steam



Steamed buns are at home worldwide. Inspired by past travels and restaurant visits, consumers are reaching out for the plump, fluffy and cloud-like buns, in specialist stores and mainstream supermarkets as borders continue to remain closed.

By Sharmila Rajah

Chinese in origin, steam buns have long globalized the world. The COVID-19 pandemic has re-established the steamed bun as a firm favorite among households. A traditional wheat snack, the steamed bun is available either fresh or frozen and can vary with filling. It is known by a variety of names – mantou in Shanghai; and in northern China, a bao or baozi, a steamed bun with filling. Other variations include the xiaolongbao, traditionally filled with pork, but nowadays one can find them stuffed with all sorts of exotic ingredients, from truffles to foie gras; and the Taiwanese guā bāo, sliced or cut, resembling clamshells – the inspiration for Momofuku's headline-making pork bun.

Steamed buns are thriving in the UK, US, Australia, China and most of South East Asia, relished for their versatility and as a carrier for an assortment of fillings. The steam bun sector is trending upward, with the frozen segment flourishing as demand rises for packaged and processed food. A recent analysis by Datassential reported that global breads are driving growth, with steamed buns and baos as big growth drivers. With borders closed, supermarkets are listing more and more options on world food. These pillowy buns are a challenge to make from scratch, which add further value to the frozen product.

Steam buns – perfect as a hot snack, side or lunch-to-go- owe their continued

popularity to the snacking trend, which has increased because of evolving lifestyles. About 59% of adults, according to the State of Snacking: 2019 Global Consumer Snacking Trends Study from Mondelez International, prefer to eat several small meals throughout the day. Snacking was already big business before the pandemic; the lockdown reinforced it. Consumers are snacking more as work-from-home routines become the norm. The e-commerce platform has also picked up significantly during lockdown worldwide with online shopping for snacks becoming more prevalent.

THE MARKET - BRANDS

Major players in the steamed buns market such as Hebei Newcorn Food Co., Ltd., Hong Kong Dim Sum, Gemini Foods Taiwan (Da Yu Cheng), Lim Kee Food Manufacturing Pte Ltd, Kawan Food Berhad and PA FOOD SDN BHD are located mainly in China, Taiwan, Singapore and Malaysia. Packaged, frozen steamed buns come with a variety of fillings such as chicken, pork, vegetables, red bean paste, lotus and custard, wrapped in an exterior typically made from whole wheat flour, multi grain and nuts, wheat bran and corn flour.

Malaysia's Kawan Food, a leading exporter and manufacturer of frozen Asian delicacies, carries a range of 21 steamed bun products that are sold frozen in supermarkets all around the country. Their KG brand of mantous, which consist





of pandan, plain and chocolate flavors, and filled buns like vegetable buns, red bean and kaya, account for 43% of the total steam bun category in the domestic market. Overall sales increased 62.5% in the steamed bun category for the domestic market during the pandemic in 2020. The steamed bun is, after all, an easy, convenient breakfast option, requiring mere minutes to be prepared.

The manufacturer's award-winning KG Multigrain Mantou is its most innovative - made with a unique blend of cereals, legumes and seeds that provides at least 10% of one's daily requirement of dietary fiber (per piece). Director of marketing Gan Ka Bien explains that Kawan Food capitalized on the substantial lack in the market for a healthy product. "Buns are usually made with plain or wholemeal flour, which does not necessarily contain much nutrients. We developed the multigrain mantou to maximize its nutrient content." The quick-freezing method ensures a product's freshness and quality. International sales for the steamed buns category make up about 18% while domestic sales account for the remainder 82%. Major export markets include Singapore, Brunei, Australia and the UK.

Overall, launches of dumplings, steamed buns, wontons and glutinous rice balls rose at a compound annual growth rate (CAGR) of 12% over 2015-2019, with steamed buns showing the strongest and most consistent growth. The pandemic has given the frozen snack industry a boost - with homebound consumers seeking convenience, purchasing foods that are easy to store and simple to cook. In the UK last year, frozen food sales grew 13.8% in value and 11.5% in volume. The global frozen cha siu bao (steamed barbecue pork buns) market, for instance, is anticipated to rise at a considerable rate between 2021 and 2026, especially within the Asia Pacific market that's driven by high consumption and production in China.

Key brands in the global frozen cha siu bao market include General Mills, Syneer, Wei Chuan and Chi Mei.

FLAVORS & TRENDS

Innovation is a key catalyst for growth. Even though innovation within a traditional category like steamed bun remains rare, there are some notable brands that break with tradition.

China's tradition with steamed buns dates back almost 2,000 years. Steamed buns are a popular snack at breakfast. Traditionally, steamed breads were made at home, however, today the majority of steamed buns are produced in small or medium-sized factories in the cities. China's rapid economic development has contributed to the demand for ready-made products. Zhongyin Babi Corp, a Shanghai-based steam bun chain, keeps their sales up by standardizing production, maintaining and preserving the consistency of their buns in terms of weight, taste and shape. Their buns come with ingredients like mushrooms, custard and black sesame paste. Meanwhile, Beijing-based Baozza, started by two Americans in 2016, has garnered quite a following, with sales peaking during the COVID-19 outbreak. Baozzas combine classic pizza flavors such as margherita, BBQ chicken and Hawaiian jalapeno with steamed baos, and are sold frozen online and in grocery stores in Hong Kong and the mainland. Baozza will debut in the US this year.

The street food market in the UK has long fuelled the popularity of steamed buns in the country. Waitrose & Partners and Tesco carry the School of Wok Bao Bun Kit to help consumers make buns from scratch along with instructions on how to knead, shape and steam. School of Wok launched the duo of bao bun kits into the grocery sector in 2018. Monty's Bakehouse, a privately owned limited company, provides innovative airline hand-held snacks and bakery goods to the global airline marketplace. Their char siu pork bao, won the 2019 On-Board Hospitality award. The kitchen has since experimented with their own creative fillings, such as teriyaki vegetable, scrambled egg and turkey bacon and American 'sloppy joe' fillings. Asian-inspired food brand itsu added baos to their frozen range last year, with a hoisin duck, chicken teriyaki and spicy veg varieties, available at Tesco and Sainsbury's. The brand's first ever vegan bao bun appeals to the 50% of 25-44-year-olds who are looking for new foods to try, as well as those keen on a

The steam bun sector is trending upward, with the frozen segment flourishing as demand rises for packaged and processed food.

“

Over in the US, Asian-inspired restaurant chain Wow Bao, whose frozen retail line is available in nearly 300 grocery stores across the Midwest, introduced coconut custard baos and chocolate baos in 2019. Brooklyn-based Prime Food's steam roasted pork buns and the mini spicy pork bun by ACC Foods' 3 Meals A Day are some of the best frozen steam buns sold in grocery stores around New York.

Budget retailer Aldi Australia launched an eight-pack of white buns early this year in their freezer aisle, so customers can recreate the snack at home in just minutes. Over the recent Easter period, Din Tai Fung Australia unveiled its limited edition hot cross bun baos. Made with steamed bread, the hot

cross buns were filed with molten chocolate. Singapore's SMH Food introduced a new series of wholemeal buns, with lotus seed paste and sunflower seeds, in 2020 to appeal to the region's health-conscious market, as well as the halal market in the Middle East. Kawan Food launches its kurma (dates) buns in April, coinciding with Ramadan, the month-long fasting period for Muslims.

PANDEMIC IMPACT

If anything, the pandemic is changing how consumers eat as they re-evaluate their diets. Health has become the top motivator. For instance, there is an increasing demand for Australian wheat, being driven by Chinese flour millers and food manufacturers, who are taking advantage of mounting consumer interest in healthy whole grain products. The Australian Export and Grains Innovation Centre (AEGIC) currently conducts research into incorporating whole grain flour in Asian products, including steamed buns. •





THERE'S ALWAYS **MORE**

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the magazine for the frozen food industry

China's Bakery Sector Enjoys Unparalleled Growth Potential

China's bakery sector has been expanding rapidly in recent years, underpinned by the country's rising middle class, ongoing westernization of lifestyles and diets, and increasing demand for convenient food options. Euromonitor International estimates retail sales of baked goods (packaged and unpackaged) in China at USD34bn in 2020, comprising 9% of global retail sales. This makes China the world's second-largest baked goods retail market after the United States (at USD67bn).

by USDA's Foreign Agricultural Service

Furthermore, the growth potential for China's bakery sector is unparalleled, given the country's population and relatively low consumption base. Per capita consumption of baked products is currently 7.2 kilograms (kg) per year, compared to 22.5 kg in Japan, and 40.2 kg in the United States. Euromonitor International forecasts that retail sales of baked goods in China will grow to USD53bn by 2025, a 53% jump from current levels.

Rising consumer incomes and an increasingly Western lifestyle in Chinese cities, combined with growing variety and expanding presence in retail outlets such as supermarkets and hypermarkets, have supported the retail performance of baked products across the country. Moreover, Western-style pastries are competing with traditional Chinese varieties and are becoming a daily food item for many middle-class urban consumers.

Breakfast, snacks, and celebrations are the main occasions for baked goods consumption in China, with the most popular products being cakes, pastries, and bread. The consumer demographics skew female and young: about 65% of Chinese consumers of baked products are women, and more than 80% are born after 1980, according to Daxue Consulting.

Cakes currently account for 41% of overall baked goods retail sales in China, with

an annual value of USD14bn. According to Euromonitor, retail sales of cake saw a compound annual growth rate (CAGR) of 8.3% from 2015-2020 and are expected to remain at a similar level over the next five years. The bakery market remains highly fragmented. Most of the almost 600,000 bakeries in China are local businesses, with e-commerce gaining market share as rising rent and labor costs have led many bakers to close their physical shops.

Visual appeal and flavor variety are important to Chinese consumers. Among the businesses meeting that demand is Bliss Cake, one of China's fastest-growing bakery chains, which offers an exclusive e-commerce platform and markets a signature cake with multiple slices featuring different flavors such as chocolate mousse, fresh fruit, cheesecake, and coconut. Pastries, which Euromonitor categorizes as including fresh and packaged biscuits, cookies, croissants, donuts, and others, comprise 40% of bakery sales (USD13bn annually). Pastries are the fastest-growing category of baked goods in China, with a CAGR of 10.5% during 2015-2020, and are expected to overtake cakes in bakery sales in 2024. Filled biscuits have become very popular among white-collar workers in large cities, who are keen to experiment with new products offering indulgence and convenient snack options. Diversity in flavors and product



Innovations help expand demand for these products, as localizing flavors to target market preferences is important. One example is the world-famous Oreo cookie. When the century-old, black-and-white cookie was first introduced in China in 1996, sales were only mediocre. By surveying Chinese consumers, Oreo's manufacturer found they preferred a cookie with less bitterness and less sweetness. As a result, the company revamped its recipe for the Chinese market to make the biscuit part more chocolatey and the cream less sweet. Other innovations followed, including green tea flavored cream, Oreos in rectangular wafer form, and straw-shaped wafers with vanilla-flavored cream. As a result, Oreos are now one of the best-selling cookies in China. Bread (predominantly leavened bread sold both packaged and unpackaged) accounts for 18% of Chinese bakery sales (valued at USD6bn), having maintained a 9% CAGR during 2015-2020. It has become a popular breakfast or snack item for young urban consumers. Euromonitor research found that increased fresh milk intake goes hand in hand with higher bread consumption, as more Chinese consumers think that bread is a better complement to milk than traditional breakfast items such as rice porridge and meat buns. Unlike traditional breakfast, milk and bread require minimal preparation, thereby

making them attractive to a large class of office workers who seek convenience due to the fast pace of daily life. Whole wheat sandwich and white bread are the two most popular varieties, as Chinese consumers generally prefer soft, springy bread products over harder ones such as bagels and baguettes. Whole wheat bread is also perceived to be a healthy product and thus is popular among the health-conscious elderly and young female consumers. Flavored varieties such as green tea or fruit breads are also performing well, especially among children and teenagers.

IMPACT AND RECOVERY FROM THE COVID-19 PANDEMIC

The COVID-19 pandemic has negatively affected the Chinese bakery sector via disruptions to production and distribution. Having largely maintained double-digit annual growth in the preceding decade, the baked goods retail sector is expected to grow just 3% in 2020 according to Euromonitor. Both packaged and unpackaged baked goods have suffered, though the unpackaged segment has been hit harder due to shorter shelf life, consumers' limited access to retail outlets, and increased concerns about food hygiene during the pandemic. Cake sales have been hit especially hard by the disappearance of large celebrations during quarantine and social



distancing measures. Bread has fared better than other baked goods categories because of its staple status and diverse range of potential uses, including being a breakfast option. Bread sales have also benefited from the increase in at-home meal consumption.

E-commerce, already on the rise before the pandemic, has gained more market share in 2020 due to minimized social contact, general convenience, and more competitive pricing. Baked goods sales are expected to have a strong recovery, with Euromonitor forecasting a 13.3% increase in 2021 and healthy growth thereafter. Well-suited to snacking, baked goods provide convenient options for urban consumers with increasingly hectic lives that may not leave time for more formal meals. In this regard, pastries and bread are well-positioned for future growth.

PROSPECT FOR BAKING INGREDIENTS

FAS China has identified several products used as baking ingredients with good growth potential: butter, tree nuts, and dried and processed fruits. Chinese food processors prefer to use imported butter, as domestic production is limited by seasonality and high cost. Butter is consumed and marketed primarily by the bakery sector. Female consumers aged 26-40, accounting for 94% of the home baking population, are strong drivers for butter consumption. Home baking has been gaining popularity in recent

years. Although most Chinese kitchens are not equipped with large ovens that are common in the United States, many households use countertop toaster ovens for baking. During the first half of 2020, sales of countertop ovens grew 18% over the same period in the previous year according to All View Cloud Data Technology. FAS Beijing forecasts a 17% increase of butter imports in 2021 based on the rapidly developing bakery industry and its reliance on imported butter. Imported tree nuts are also used in the Chinese baking industry. The bakery sector commonly uses U.S. almonds, walnuts, pecans, and pistachios as ingredients in bread, cakes, cookies, and other pastries. The Mid-Autumn Festival, which falls between mid-September to early October and is the second-most important Chinese holiday after the Lunar New Year, is peak season for sales of moon cakes. In 2019, sales of these dense, filled pastries reached USD2.8bn. In recent years, the fillings have become more innovative and tree nuts have become a trendy option. Frozen/dried fruits, such as blueberries, cranberries, and tart cherries have great potential due to the specific attributes of U.S. varieties. While China can source fresh blueberries from Chile and Peru, U.S. blueberries have a higher sugar content and softer skin, which are sought after by food processors. Raisins are also used as an ingredient in food processing and rapid development of the bakery sector has helped drive raisin consumption. •

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020961 Bucharest, Romania; E-mail address: simona.dumitrescu@trade.media; Website: www.mediatrade.ro

ISM to Launch Japan Edition in 2022

ISM, the world's largest trade fair for sweets and snacks, will make its Asian debut in Tokyo, Japan – The Heart of East Asia. Branded as ISM Japan, the sweets and snacks showcase will take place at Tokyo Big Sight between April 13-15, 2022, serving as the go-to information, communications and networking hub for the industry in the region.

By Tudor Vintiloiu

ISM Japan is the first dedicated showcase for the sweets and snacks industry in Asia and is modeled after the world's largest trade fair for sweets and snacks – ISM Cologne. This inaugural event, which is expected to be represented by over 200 brands, is part of Koelnmesse's global leadership in the Sweets and Snacks industry as well as the Food and Beverage industry. According to the organizers, ISM Japan is a natural extension of the existing F&B segments at Wine & Gourmet Japan as well as established food fairs organized by the Japan Food Journal – FABEX, Dessert Sweets & Bakery Festival, Food & Drink OEM Matching Expo, Noodle Industry Fair and the Premium Food Show. "This will bring about greater synergy between the events and offer a wider range of products to all trade visitors. These 7 food shows under one roof will be a gastronomical experience not to be missed," the press release states.

Some of the key factors that prompted ISM's entry into Japan include a forecasted 6.2% annual growth of the Asia-Pacific confectionery market from 2020 to 2025, with Japan being the sixth largest confectionery market in the world, having a nation-wide growing demand for quality and innovative sweets and snack products. Furthermore, the establishment of Free Trade Agreements with the European Union and the United States of America makes it even more attractive for overseas food products to enter the market now.

"ISM Japan will definitely be a great platform for the sweets and confectionery producers targeting the Japanese and East Asian markets which has high demand for quality products. I am confident that our partnership



with Koelnmesse will become even stronger in addition to our existing collaboration between FABEX and Wine & Gourmet Japan," said Katsunori Hirayama, vice president of the Japan Food Journal.

"This is an area that we see huge potential growth in, especially with the strategic partnership with Japan Food Journal – who has been in the market for over 20 years, expanding their show year-on-year. 2021 is a year of recovery, and 2022 will be an opportune time for all global trade fairs to restart with countries' borders opening progressively. We are confident to bring about added value to the industry with this newly launched event in Japan," commented Mathias Kuepper, managing director of Koelnmesse Singapore.

ISM Japan, together with its 6 partner fairs, aims to attract over 1,000 exhibitors and close to 80,000 trade visitors from Asia and East Asia. •

Katsunori Hirayama,
vice president of the
Japan Food Journal

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ISM Japan will definitely be a great platform for the sweets and confectionery producers targeting the Japanese and East Asian markets.

2021 FEATURE PLANNING

1 SPRING - Bakery China Special Issue

Deadlines:
Ad/editorial - 26.03
Publishing - 12.04

TECHNOLOGY

Hybrid ovens
Software support & operation

PROCESS

Dough dividing and forming
Sanitation

INGREDIENTS AND NUTRITION

Dough improvers
Shelf-life optimization

PACKAGING

Packaging designs

MARKET TRENDS

Flavor trends in China's bakery

SNACKS

Steamed buns

TRADE SHOWS

Bakery China, Anufood China, The Baking Industry Trade Show, Anuga FoodTec, Sweets & Snacks Expo

2 SUMMER

Deadlines:
Ad/editorial - 02.07
Publishing - 19.07

TECHNOLOGY

Trays, tins, racks
Proofers

PROCESS

Vacuum cooling
Inspection & monitoring

INGREDIENTS AND NUTRITION

Oils & fats
Allergens

PACKAGING

Automation in multi-product packaging lines

MARKET TRENDS

East Asia's bakery flavors

SNACKS

Biscuits NPD
Boiled, steamed and fried specialties in Asia

TRADE SHOWS

FIPAN Brazil, Fi Asia

3 AUTUMN - IBA special issue

Deadlines:
Ad/editorial - 03.09
Publishing - 20.09

TECHNOLOGY

Conveyors, belts
Turnkey lines for snacks

PROCESS

Baking wafers
Extrusion

INGREDIENTS AND NUTRITION

Plant-based opportunities
Flour mixes

PACKAGING

Robotics

MARKET TRENDS

Flatbreads in India

SNACKS

Crackers, pretzels & extruded snacks

TRADE SHOWS

iba, Anuga

4 WINTER

Deadlines:
Ad/editorial - 22.11
Publishing - 07.12

TECHNOLOGY

Flexible lines
Industry 4.0: process control systems

PROCESS

Mixing choices
Laminating dough

INGREDIENTS AND NUTRITION

Flavors

PACKAGING

Packaging for product safety

MARKET TRENDS

Market drivers in Australia & Japan's bread ranges

SNACKS

Savory pies

TRADE SHOWS

2022 events

In addition to the listed features, the publications will include regular features on bakeries, training, industry associations, company profiles, expert views, business and regulations, CEO interviews, professional competitions, mapping test centers, as well as facility walk-throughs and operational presentations.

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