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INTERPOM 2024: Potato Industry's Next Big Leap

Tudor Vintiloiu - Editor in chief
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As INTERPOM 2024 approaches, the potato industry gears up to tackle pressing challenges head-on. With a theme centered on "Energizing a Potato Industry in Transition," the trade fair aims to explore innovations that can help the sector adapt to the new realities brought on by climate change, energy fluctuations, and regulatory pressures.

The event goes beyond the usual business interactions by providing a venue for critical dialogues between growers, processors, and policymakers.

In recent years, the potato industry has been hit hard by climate extremes—ranging from droughts in Belgium and the Netherlands to flooding in the UK. These conditions have not only damaged yields but also driven up prices, putting immense pressure on farmers and the entire supply chain. These challenges have made it increasingly clear that the industry needs to adopt more resilient practices and accelerate its sustainability efforts. Belgium, a global leader in potato products, is at the forefront of these efforts. INTERPOM 2024 will showcase how the country's adaptability and forward-thinking approach can serve as a model for others. However, the event isn't just about Belgium. Its international scope—attracting over 20,000 visitors from 50 countries—makes it a global hub for knowledge exchange and innovation. The upcoming trade fair offers much more than just product showcases. The "Innovation Tour" will feature cutting-edge solutions in digital technology, machinery, and sustainable practices. The revamped seminars will dive deeper into pressing issues like disease management, market volatility, and the need for tighter cooperation across the entire supply chain.

What makes INTERPOM 2024 particularly significant is its role in fostering genuine industry transformation. The event goes beyond the usual business interactions by providing a venue for critical dialogues between growers, processors, and policymakers. In a sector that is rapidly evolving, such collaboration is crucial not just for immediate survival, but for long-term competitiveness.

As usual, Potato Processing International will be in Kortrijk at the trade media stands, with its editors on the show floor, ready to cover the latest innovations and developments. ●

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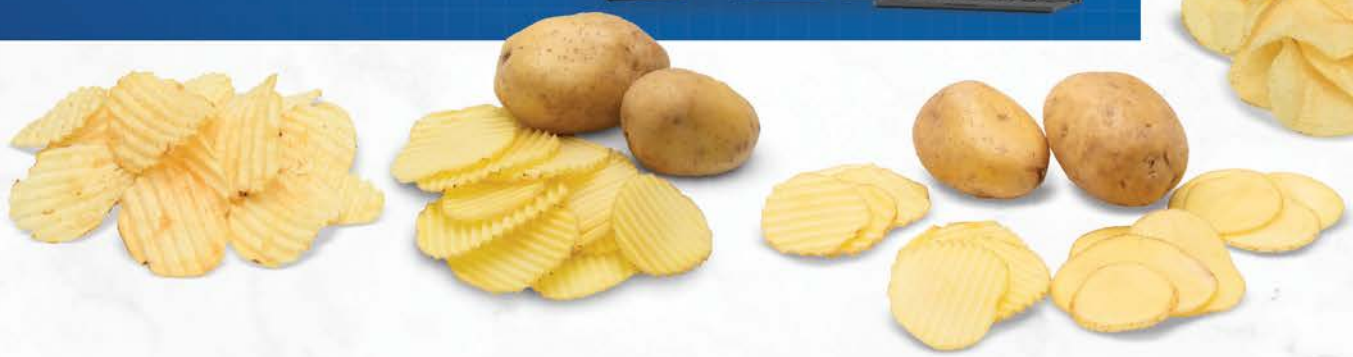

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Key Technology Appoints Ricardo Andrade as Director of Latin American Sales

Ricardo Andrade was recently appointed Director of Latin American Sales by Key Technology. Andrade is in charge of the strategic planning and implementation of sales initiatives aimed at introducing food processors in Central and South America to Key's optical sorters and food handling systems, as well as food handling and processing solutions from sister business PPM Technologies.

"We're at an exciting moment right now with the launch of new products including Key's Compass optical sorters and PPM fryers. As we expand the range of food processing solutions we offer, we also work on strengthening our ability to bring those solutions to more customers, including in the growing Latin American food processing markets. Ricardo has a proven track record of fostering enduring client relationships and leading cross-functional teams that outperform in high-stake markets. His experience will be invaluable as we continue to expand our capabilities in the Latin American region," Jack Lee, Duravant Group President – Food Sorting and Handling Solutions, mentioned.

DTS Has Been Acquired by Sticomax

Belgian holding company Sticomax has acquired DutchTecSource (DTS), a global leader in screw technology for the food industry. This strategic acquisition strengthens Sticomax's position as a major global integrator of food processing machines, broadening its offerings in structures and systems. DTS, known for its innovative blanchers, coolers, and cookers, complements Sticomax's existing portfolio. DTS will retain its operational independence, while collaborating with Sticomax to enhance solutions for customers. The acquisition aligns with Sticomax's growth strategy, following its earlier acquisitions of ViwateQ and Romonta in the Netherlands. With DTS, Sticomax's annual turnover will surpass EUR 60 million, employing nearly 200 people. DTS's management team remains in place, reporting to Sticomax CEO Lode De Boe, who emphasizes that the acquisition will enhance their ability to deliver advanced, hygienic food processing systems.

Mars' Acquisition of Kellanova Paves Way for Savory Snacks Market Leadership

Euromonitor International, through experts Rabia Yasmeen and Carl Quash III, analyzed Mars' acquisition of Kellanova as a major shift in the snacks industry. This move diversifies Mars' product portfolio from cocoa-heavy brands toward savory snacks, positioning Mars to better navigate rising cocoa prices and declining sugary product demand driven by health trends. The acquisition is expected to help Mars maintain competitiveness and drive growth, with the global snack market projected to increase by 8% in 2024. Mars will significantly boost its presence in e-commerce, where snack sales are growing. Currently ranking third globally in snack e-commerce, Mars could close in on the second spot, driven by Kellanova's strong brands like Pringles, Cheez-It, and Kellogg's, which outperform Mars' existing offerings like M&M's and KIND. The merger will expand Mars' footprint in emerging markets, such as China, where Kellanova has little presence, potentially unlocking new growth opportunities in these regions. Mars' acquisition of Kellanova is seen as a response to challenges in the chocolate and confectionery market, where cocoa crises and shifting consumer preferences toward health-conscious products are affecting demand. With Kellanova's brands repositioning toward healthier offerings, Mars can strengthen its presence in the savory snack segment, a category where it had minimal presence before. This acquisition also signals a trend of increased merger and acquisition activity in the snack industry as companies strive to expand their market share and adapt to evolving consumer demands.

Calbee Aims to Introduce AI to Potato Chips Production

Calbee, the Japanese potato chip company, is collaborating with Silicon Valley venture capital firm Pegasus Tech Ventures to introduce AI to potato chips production. "AI has already been implemented in various parts of our production, marketing, and back-office transactions. We will continue to innovate our business via partnerships with Pegasus and the startups we will meet," a Calbee spokesperson told Nikkei Asia. Calbee is studying how artificial intelligence (AI) may be used to streamline potato chip production and potentially develop new AI-powered potato chip recipes, according to Anis Uzzaman, founder and CEO of Pegasus Tech Ventures. To assist Calbee in tailoring the thickness, crispiness, saltiness, and amount of spice of its potato chips for various markets and demographics, AI can also be used to evaluate data on consumer behaviors, tastes, and cultural preferences.

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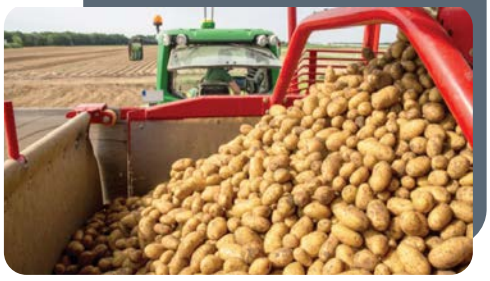
European Potato Growers to Face Less Than the Quantity That Was Lifted in 2023

A recent Expana analysis projects a European potato harvest of 20.7m tonnes in 2024, which is 8.8% less than the quantity lifted in 2023. This estimate was calculated using August yield data from the EU Commission and preliminary hectarage figures from NEPG (North-Western European Potato Growers).

"The NEPG anticipates a 4-6% year-over-year (y-o-y) increase in potato hectarage for 2024. However, unfavorable wet weather conditions and increased disease prevalence in the NEPG region have adversely affected potato crop growth and yields. In August, the EU Commission maintained its 2024 harvest yield forecast at 35.1 tonnes per hectare for the EU, which is 4.6% lower than the 2023 harvest yield of 36.8 tonnes per hectare and 1% below the 5-year average. Belgium and The Netherlands were the worst affected by wet weather during plantings earlier in the year, with yield declines of 11% and 6% respectively y-o-y. Meanwhile, yields in France are forecast down 4% y-o-y, and in Germany, they are expected to decrease by 2% y-o-y compared to the 2023 EU commission yield figures," the Expana analysis shows.

The US Advocates for Japan's Access to Fresh Potatoes

The U.S. potato industry continues to push Japan to allow imports of fresh U.S. potatoes, despite Japan already being a major importer of processed U.S. potatoes. "It's a big market for processed potatoes... But there is no fresh table stock potato access," said National Potato Council (NPC) CEO Kam Quarles. If allowed, fresh U.S. potato exports to Japan could grow by 10%, potentially adding USD 150 million annually. Idaho Potato Commission CEO Jamey Higham believes Idaho's potatoes would be well-received in Japan, easing pressure on domestic supply. A bipartisan group of U.S. senators is urging the president to press Japan on this issue. Japan has delayed substantive discussions on fresh potato imports, despite no valid phytosanitary justification for the delay. The next bilateral meeting between the U.S. and Japan will occur in September, presenting another opportunity to push for progress. Quarles emphasized the need to maintain pressure on Japan.



North America Gains Ground in Global French Fry Market

A Global French fry exports reached 1.10 million tons in the first quarter of 2024, a slight decline of 0.4% compared to 2023. While seven of the eleven largest exporters grew, European exporters like Belgium, the Netherlands, Poland, and Germany saw declines. In contrast, smaller exporters such as Canada, China, New Zealand, and Turkey experienced double-digit growth. European Union fryers shipped 736,634 tons, down 4.4%, with Belgium and the Netherlands leading the decline. Meanwhile, North American exports increased by 6.8%, largely driven by a 37.2% rise in Canadian sales. North America captured 23.3% of the global market, up from 21.8%. Smaller exporters saw growth, with Argentina, China, New Zealand, and Turkey increasing their global market shares. China's exports surged 13.6%, while Turkey's grew by 73.9%. Looking forward, European processors hope to resume growth with the 2024 crop, while North American fryers are expected to maintain strong market positions despite potential supply constraints. Global demand for French fries is likely to continue growing, benefiting North American exporters.

Exemptions for the Use of Fungicides Against Phytophthora Infestans

Belgium's potato growing season has been severely impacted by Phytophthora infestans due to continuous heavy rainfall and mild temperatures during June to August. These conditions have accelerated the spread of infections, leaving farmers with little recovery time. Agricultural warning services have advised frequent renewal of fungicide treatments to combat the spread. However, challenges arise as Belgium's range of approved fungicides has been significantly reduced, particularly with the loss of mancozeb. Resistant Phytophthora strains have necessitated new control strategies, requiring farmers to alternate fungicides and combine active substances from different groups as per recommendations from the Fungicide Resistance Action Committee (FRAC). Farmers now face technological limitations and struggle to preserve their crops under strict regulations on fungicide use and the number of permitted treatments. Due to the delayed planting season, spraying will continue through September. To address the crisis, Belpotato.be has applied for an emergency derogation, allowing for additional fungicide applications.

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Potato Industry in Transition

Sets the Stage for a Resilient Future

INTERPOM 2024, Europe's premier trade show dedicated to the entire potato supply chain, is set to take place from November 24 to 26, 2024, at Kortrijk Xpo in Belgium. This year's edition promises to be a significant event, reflecting the growing momentum and critical challenges within the potato industry.

With a focus on the theme "Energizing a Potato Industry in Transition," the event will explore the industry's response to major global shifts such as climate change, stricter regulations, increasing disease pressures, and the need for greater sustainability. Having reached maximum exhibitor capacity, INTERPOM will host over 316 exhibitors from 14 countries, showcasing a broad array of products, machinery, and services that span the entire potato chain, from cultivation to processing and marketing. This specialized platform is indispensable for growers, processors, and traders across Europe and beyond, offering insights into the latest technological advancements and market trends that shape the potato sector. With an expected attendance of more than 20,000 visitors from 50 countries, INTERPOM continues to serve as the key meeting point for professionals seeking to stay ahead of industry developments.

One of the main highlights of this year's show will be the "Innovation Tour," where visitors can explore cutting-edge technologies and solutions that address the industry's most pressing challenges, from energy efficiency to sustainable farming practices. These innovations are crucial as the potato sector grapples with fluctuating energy prices and the urgent need to reduce environmental impacts.

Additionally, the event's seminar program has undergone a transformation. Organized by Belgapom, the seminars will shift from traditional presentations to engaging panel discussions that feature experts from academia, research, and policy. These discussions will delve into the complex issues facing the industry, offering fresh perspectives and fostering collaboration throughout the supply chain. The full seminar program will be announced in early October, providing further details on the topics and speakers that will drive these conversations.

With online visitor registration and ticket sales already underway, INTERPOM 2024 is poised to be a dynamic forum for industry professionals, offering not only a glimpse into the future of potato production but also actionable solutions for the evolving challenges ahead. •

"With an expected attendance of more than 20,000 visitors from 50 countries, INTERPOM continues to serve as the key meeting point for professionals seeking to stay ahead of industry developments."

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Christophe Vermeulen: "The Challenges Are Immense, but We Must Energize Ourselves to Secure Our Position as Global Leaders"

In an exclusive interview with ***Potato Processing International***, ***Christophe Vermeulen, CEO of Belgapom***, sheds light on the Belgian potato sector's strategic response to the pressing challenges of sustainability, climate change, and global supply chain disruptions. As the industry navigates through tightening regulations and shifting market demands, Vermeulen highlights Belgapom's commitment to innovation, collaboration, and resilience, outlining a future that balances environmental sustainability with economic viability.

With the European Green Deal and the Farm to Fork strategy moving forward, how do you see the Belgian potato industry adapting to the tightening regulations on pesticide use and sustainable farming practices? How do you foresee these regulations affecting the potato acreage and overall production capacity in the coming years?

The Belgian potato industry is committed to adapting to the European Green Deal and the Farm to Fork strategy, as sustainability is a key priority for our sector. We recognize the importance of implementing sustainable farming practices to meet the EU's ambitious targets. To adapt, the industry is investing in research and innovation, exploring alternative crop protection methods, and adopting integrated pest management strategies. The use of new technologies like precision agriculture, advanced monitoring and data analysis tools… will have to become the new standard when it comes to sustainable agriculture.
While these regulatory changes present challenges, they also open opportunities for innovation and differentiation in the market. We anticipate that the transition to more sustainable practices may initially affect the potato acreage and production capacity, as growers adapt to new methods. However, with the right support, including access to new technologies and adequate transition periods, we believe the industry can maintain, and potentially even enhance, its production capacity in the long term. Ultimately, the Belgian potato sector is resilient and forward-thinking. We are committed to working closely with policymakers, researchers, and other stakeholders to ensure a smooth transition that balances environmental goals with the economic viability of our farmers and industry.

Climate change has increasingly become a pressing issue, with abnormal growing seasons becoming more frequent. How is the Belgian potato sector preparing to handle these challenges in both the short and long term?

The Belgian potato sector is proactively addressing these challenges. In the short term, we are focusing on improving water management, enhancing soil health, and implementing precision farming techniques to better cope with unpredictable weather patterns. Preparing for droughts is difficult in densely populated area as Belgium. We are exploring different solutions whether water-saving techniques, smart irrigation or buffering. Heavy rainfall however poses a greater challenge. That is why the industry is investing in the development of climate-resilient potato varieties that can withstand extreme conditions, such as drought or heavy rainfall. Additionally, we are committed to reducing our carbon footprint and promoting sustainable farming practices. By prioritizing innovation and resilience, we aim to ensure the stability and sustainability of potato production in the face of climate change.

The global supply chain has faced significant disruptions over the past few years. How has Belgapom addressed issues related to geopolitical tensions, rising production and transportation costs, and what strategies are being developed to maintain profitability?

Belgapom has tackled recent global supply chain disruptions by focusing on diversification and resilience. To address geopolitical tensions and rising costs, we are working closely with our partners to secure alternative supply routes and sources for key inputs. I think our companies showed great resilience at the start of the war in Ukraine when sunflower oil was extremely scarce and we needed to shift quickly to alternatives. In this regard, I have to compliment the Belgian Federal Government for their assistance and quick response and help which made the temporary transition feasible. We're also still investing in local sourcing (whatever local means – that is always food for thought) and improving logistics efficiencies to mitigate transportation challenges. However, this year for example, the shortage of seed potatoes was a huge challenge, impacting our ability to meet production demands. The Potato Community in the Low Countries needs to come together to discuss future relations. We are prepared to have an open conversation about that but it remains difficult to convince our Dutch friends to do the same. To maintain profitability, Belgapom is prioritizing cost-effective production methods, such as optimizing energy use and reducing waste throughout the supply chain. We are also exploring strategic partnerships and innovations that enhance value addition, ensuring that the industry remains competitive despite these external pressures.

At Interpom 2024, what technological innovations or advancements do you believe will have the most significant impact on improving efficiency and sustainability in the potato processing industry?

First of all, I want to congratulate our partners Kortrijk Xpo because three months before the opening of Interpom 2024 every little square cm has been rented out. 316 exhibitors from 14 different countries will put their best material and ideas on display for the 20.000 plus visitors coming from more than 50 countries themselves. We are really excited about that. Traditionally we showcase many different new technologies and innovations at Interpom 2024. It will not spoil the surprise nor the anticipation of our esteemed visitors but I can reveal part of the focus this year

will be on machinery, pest and water management. Improving efficiency and sustainability in the potato processing industry is our main goal. That is why our over-arching theme this year is: 'Energizing a potato industry in transition'. Transition towards a different tomorrow where the Belgian potato industry will adapt itself to a new climate reality, new regulations concerning sustainable growth and new consumer preferences and markets. The challenges are immense and we cannot let them paralyze us. On the contrary, we need to step up and energize ourselves not only to maintain our position as global leader but to secure it for the next 15 years.

With a growing trend toward healthier and more sustainable food choices, how is the potato industry in Belgium adapting to changes in consumer preferences, particularly regarding organic and non-GMO potatoes?

Potatoes are a key ingredient in every healthy, nutritious diet. I do not think I need to emphasize or explain the many advantages of potatoes to the readers of potato business. We keep on putting much effort in spreading that message and at the same time, countering false information and supporting new research. We are promoting the nutritional benefits of potatoes as a versatile, wholesome food choice that fits well within a balanced diet. By aligning with consumer trends towards sustainability and health, the industry aims to remain relevant and responsive to market needs. We hope that the European Union keeps the door open towards more use of GMO-potatoes because it is an essential part of the future of our business. And by the way, according to all consumer data in Belgium, organic products, including potatoes, have a stagnant market share.

Given the increasingly collaborative nature of the potato industry, especially with the involvement of various stakeholders in policy discussions, how is Belgapom fostering better relations between farmers, processors, and policymakers?

It is very important for us to foster these relationships with open dialogue and collaboration. We regularly organize seminars, training sessions, workshops, and meetings where stakeholders can share insights, address concerns, and align on common goals, particularly regarding sustainability and regulatory changes. We also participate in policy discussions to ensure that the voices of our members are heard and considered. One of our most important tools is our membership of Belpotato.be, our national branch organization. Since 2020 we are considered being the pioneers in the Belgian agro-food sector by building a strong branch organization in which processors, traders and farmers come together to tackle common challenges (e.g. CIPC, code of conduct for contracts…).

Considering the global competition and potential shifts in optimal potato-growing regions due to climate change, where do you see Belgium's potato industry in the next decade?

Despite the evolving challenges of global competition and climate change, Belgium's potato industry is poised to not just endure but thrive over the next decade. By embracing innovation, such as developing climate-resilient potato varieties and pioneering sustainable farming techniques, we are positioning ourselves at the forefront of the industry's evolution. Belgium's unique strengths - our deep-rooted expertise, robust infrastructure, and a strong commitment to quality - give us a significant advantage. Even as climate change may shift the landscape of optimal growing regions, our adaptability and proactive strategies will keep us competitive. We envision a future where Belgian potatoes continue to be synonymous with excellence on the global stage, driven by efficiency, sustainability, and a spirit of collaboration across the entire supply chain. With our forward-thinking approach and united efforts, the Belgian potato sector is not just preparing for the future; we are setting the standard for what's possible in sustainable and high-quality potato production worldwide.

Finally, as we approach 2025, what are your key objectives for Belgapom, and what are your hopes for the future of the Belgian potato industry?

I think I covered most of our priorities in my previous answers. The potato business is a fickle mistress. Every year brings new surprises, difficulties and challenges but if there is one thing I learned in my four years on the job, is that the people in our sector are tough as nails and moreover, they are resilient and they never give up. That's Belgian entrepreneurship.
I would like to re-emphasize one thing though: the need to keep on communicating openly and collaborating with every stakeholder: farmer, farmers' unions, seed potato companies, European federations…
By enhancing communication and partnerships across the sector, we aim to tackle supply chain disruptions, manage rising production and transportation costs, and maintain our competitive edge globally.
Looking ahead, our hope is that the Belgian potato industry continues to thrive as a leader in sustainable and efficient production. By embracing new technologies, investing in research and development, and focusing on resilient potato varieties, we are not just preparing for the future - we are shaping it. We envision a dynamic industry that adapts to consumer trends, meets global demands, and remains a proud (and energized!) symbol of quality on the international stage. •

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Optimum nv

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Quality control ensures reliability - Schaeffler´s range of Arcanol lubricants sets industry standards

Tested, analyzed and verified to meet your highest expectations before it is delivered to your door.

An essential factor for the performance capability and the service life of rolling bearings and linear units is the correct selection of a suitable grease. Water, acids and other agents that deteriorate lubricants can result in corrosion and thus equipment failure. In the food & beverage industry, maintenance engineers face certain additional challenges as they not only have to keep their equipment running but keep food products safe from contamination at the same time.

Food-grade lubricants address the important issue of human health, however, the limitations in chemical composition of many such lubricants on the market impact the performance of the components they lubricate adversely, especially with regard to corrosion and wear resistance. This is especially true in harsh conditions, such as high or low temperatures, steam and washdown applications, common in the food processing industry. Other applications, such as can seaming, create high friction, wear and heat generation.

For decades, Schaeffler has been carrying out research in the development and application of greases in order to determine which grease provides the best solution for each application. Arcanol greases have been a guarantee for the highest per-formance capability in rolling bearing applications and linear units. They are subjected to comprehensive quality inspec-tions that can be clearly demonstrated and identified. In the

in-house analysis laboratory, the chemical and physical characteristics of Arcanol greases are tested in accordance with strict test guidelines. Schaeffler can ensure in this respect that customers always receive the highest level of product quality.

Arcanol FOOD2 was developed especially for rolling bearing arrangements in the food processing industry and meets the highest requirements for process reliability and food safety: it has good resistance to water and chemical cleaning agents and offers very good anti-corrosion protection. It is certified for Kosher and Halal in accordance with NSF-H1 registration (registration no. 150727). •

Excerpt from the Arcanol FOOD2 technical data sheet

Characteristics	Value	Unit	Test method
Temperature range:	-30 to 120	°C	DIN51825/Schaeffler Spec.
Density:	0.88	kg/dm³	
Certification:	NSF H1, Kosher, Halal		
Thickener:	Aluminum complex		
Type of base oil:	SHC oil		
Base oil viscosity at 40 °C:	150	mm²/s	DIN 51562 – 1
at 100 °C:	18	mm²/s	DIN 51562 – 1
Worked penetration:	265-295	0.1 mm	DIN ISO 2137
NLGI grade:	2		DIN 51518
Drop point:	≥ 240	°C	DIN ISO 2176
Water resistance:	1-90	Range	DIN 51807 – 1
Corrosion Emcor Test:	≤ 1/1	Corr. Grade	
with 0.5% NaCl:		Corr. Grade	
Copper corrosion after 24 h/100 °C	≤ 1	Corr. Grade	DIN 51811
FE8 tests run wear behavior, Running time 500 hours without failure			
536048 - 75/80-RT	vWk50 ≤ 35	mg	DIN 51819
536050MP - 7.5/80-80	vWk50 ≤ 35	mg	DIN 51819
FE9 tests run (grease service lifetime)			
B/1500/6000/120	F50 ≥ 200 no failure < 100	H h	DIN 51821-02

Your personal contact: For more information on Arcanol FOOD2, or for help in selecting the most suitable rolling bearing grease for your application, contact **Bruno Ascenço, Global Lubricant Sales Consultant at Schaeffler Lifetime Solutions**, at **bruno.ascenco@schaeffler.com**.

We pioneer motion

Potatoes are not the only thing that goes well with grease!

Bearings do, too. Arcanol lubricants ensure highest reliability and efficiency in operation. Our special grease Arcanol FOOD2 from the Arcanol grease family is made especially for the food & beverage industry. It is NSF-H1 registered and certified for Kosher and Halal production, ensuring both food safety and operational reliability. Arcanol FOOD2 is suitable for the main applications in food processing and package industry due to its wide temperature range of application. Its distinguishing characteristics are high resistance to water and chemical cleaning agents, as well as great anti-corrosion protection.

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SCHAEFFLER

The Cool Technology Behind an Efficient Freezing Process

As environmental sustainability becomes a priority across industries, potato processors are increasingly seeking freezing technologies that reduce energy consumption and minimize waste. New advancements in freezer design address these concerns by incorporating energy-efficient components, such as variable-speed compressors and fans, as well as improved insulation materials that reduce heat transfer.

By Tudor Vintiloiu

In addition to using the latest technologies and upgraded systems, many manufacturers are also exploring the use of eco-friendly refrigerants to reduce the carbon footprint of their operations. Ammonia and carbon dioxide are increasingly being used as alternatives to traditional synthetic refrigerants, which are known to have high global warming potential (GWP). Moreover, upstream and downstream processes are carefully considered, in order to achieve an overall production line efficiency.

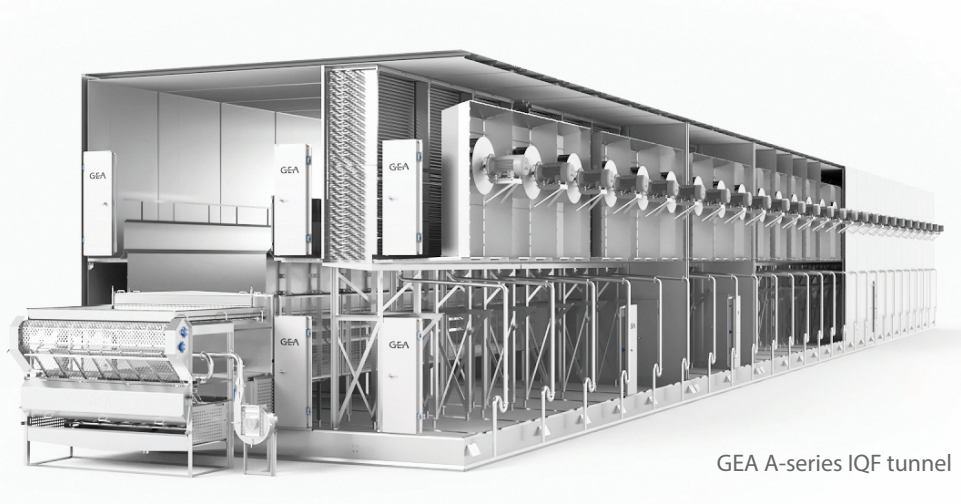
Freezer equipment design is vital for food safety, optimum performance throughout production, and energy savings, especially when handling massive quantities of French fries. Additionally, the right equipment can significantly reduce downtimes with fast, efficient cleaning factored in. **GEA**, a leading technology provider to the food sector has more than 160 of its French fry freezer tunnels operating worldwide and recently conducted extensive research and development into significantly improving the sustainability and energy consumption in industrial freezing equipment.

A typical IQF (Individual Quick Freezing) tunnel, as supplied by technology specialists such as GEA, is composed of different temperature zones to successively decrease the product temperature from +95°C to +50°C in precool sections, +50°C to +10°C in refrigerated sections and finally +10°C to -15°C in freezing sections. For each step, a specific solution was designed and implemented to reduce energy consumption:

For the initial precool step, the compression refrigeration system is replaced by free cooling, utilizing a thermosyphon system to cool the air. The water precool step is also free-cooling and circulates plant water through heat exchangers to provide cooling capacity and save energy in the plant water heating system.
The freezing section temperature set point is controlled with the Callifreeze® system which continuously measures the product's frozen quality and adjusts freezer parameters according to set targets with minimum energy consumption. GEA recently obtained a certification of CO_2 emission reduction for its French fry IQF tunnel freezer with Water Precool as a result of a proven 22% to 57% drop in CO_2 emissions depending on the country and conditions therein.
As we know, any type of food can be frozen but the quality of the end product is what really counts. The key criterion is the ability to continuously monitor the product's frozen state at freezer exit and automatically adjust freezer conditions when needed. This ensures that the products leave the freezer at the expected frozen quality. In addition to the CO2 emission reduction, when applied to the French fry tunnel freezer, the Callifreeze® control system leads to a minimum 9% energy saving on refrigeration system consumption. For those processors aiming for high throughput with reduced downtime, GEA IQF tunnel freezers can run comfortably for 21 consecutive days. The freezers are designed with high performance frost management systems including sequential defrost and unmatched automated controlled air balance system, reducing the need for frequent stops for defrost and cleaning.

LARGE CAPACITY IN A SMALL FOOTPRINT

The newest member of **JBT**'s freezer range, the Frigoscandia GYRoCOMPACT 70 Spiral Freezer (GC70), is now available with Sequential Defrost; an addition which means producers can benefit from the GC70's capacity increase for up to two weeks of continuous running, according to company representatives. By incorporating this option into the GC70, producers can enjoy not only prolonged running time but also a 20% capacity upgrade without compromising the footprint when compared to its predecessor. The new function means the GC70 can run longer continuous times without stopping and without any need to halt production for defrosting at regular intervals. A new iteration of the JBT Frigoscandia GYRoCOMPACT range of spiral freezers – the industry standard for spiral freezer technology across the globe – the GC70 not only includes a 700mm wide belt, but also a range of key features which have been optimized to work better, smarter, and more powerfully than ever before. The addition of the Sequential Defrost option enables the GC70 to operate continuously for up to two weeks without the



GEA A-series IQF tunnel

need for frequent defrosting, ensuring uninterrupted production. "This is a specially tailored option designed to meet the running requirements of the GC70," says Torbjörn Persson, JBT's director of Global Sales Support & Product Line Management for Frigoscandia Freezers.

Capacity is another key feature of the GC70. To overcome space restrictions in many facilities, JBT has increased the overall capacity of the GC70 by building up, maximizing the amount of freezer that can cover the same area of floorspace. The overall achievement is a capacity increase of up to 20%. "The capacity is the big advantage of the GC70: in a relatively small space, we have managed to squeeze more capacity out of the freezer by increasing the headroom, which is of considerable benefit to customers," Persson adds.

Improved drying functions also play a key role in the updated GC70. The improvements, which are focused on quicker and more efficient drying of the belt, save up to an hour compared with previous functions. This, says Persson, translates to a big saving on customers' turnaround times. "In older models, you had to dry for a longer period: this new version is a lot quicker, which means you cut delays in restarting production," he explains. More than this, JBT technicians also took a deep dive into all the food safety and hygienic aspects of the freezer design. The result has been an opening of all the profiles on the machine to make it simpler and more straightforward to clean. A final detail is the addition of JBT's OmniBlu platform. A performance optimization system, which gathers and analyses data, insights and airflow control provided by OmniBlu enhances freezer performance and efficiency.

UPSTREAM AND DOWNSTREAM CONSIDERATIONS

Freezing is just one step in the industrial potato processing pipeline. If we look upstream, one key innovation that has gained significant traction in recent years is the application of Pulsed Electric Field (PEF) technology before freezing. Using PEF results in softer and more uniform tissue, which in turn enhances the efficiency of downstream processes such as cutting, blanching, and freezing. By reducing the firmness of the potato cells, PEF allows moisture to escape more easily during blanching, which leads to a reduction in ice crystal formation during freezing. This is particularly important in preserving the texture and structural integrity of products like French fries and hash browns. Moreover, PEF-treated potatoes exhibit less shrinkage and breakage during cutting, leading to higher yields and reduced waste.

Another advantage of PEF is its contribution to energy savings. Since PEF-treated potatoes require

less blanching time and temperature, energy consumption during blanching is reduced. This also complements the freezing process, as potatoes enter the freezer at a more uniform and optimized state, requiring less energy to freeze. Furthermore, PEF can improve the uptake of additives like sodium metabisulfite, which are used to prevent browning, thereby reducing the need for chemicals in the processing chain.

By integrating PEF with modern freezing technologies, processors can achieve a more efficient and sustainable operation while maintaining the highest standards of product quality.

Once products exit the freezer, maintaining their frozen state and preventing degradation during storage, handling, and transportation is crucial. Freezers with integrated grading, packaging, and distribution systems are becoming more common, further streamlining the process and minimizing the potential for product loss. Storage facilities must maintain ultra-low temperatures to ensure the product remains frozen, and packaging must be designed to protect against freezer burn and other quality issues. Automated packaging lines equipped with sensors and vision systems ensure that each product is properly packaged, labeled, and prepared for distribution, further reducing labor costs and improving overall efficiency.

Additionally, freezing systems are now equipped with IoT-enabled sensors that provide real-time data on freezer performance, product throughput, and energy usage. This data can be analyzed to optimize operations, reducing downtime and preventing costly mechanical failures. These technologies are transforming the industrial potato processing industry, enabling processors to meet the growing demand for frozen potato products while minimizing their environmental impact. •

JBT Frigoscandia
GYRoCOMPACT 70
Spiral Freezer

Improved Yield, Savings and Electric Field Can

Nowadays Pulsed electric field (PEF) has become a standard for the vegetable and potato processing industry. The application of high voltage pulses leads to a rupture of the cell membrane for all kinds of raw materials, allowing a higher diffusion rate resulting in shorter processing times for e.g. frying and drying. The induced electroporation effect results in a softer raw material, which is easier to cut and enables a variety of processing benefits, such as increased yield, shorter processing times and improved organoleptic properties such as texture, taste and nutritional value. With close to 300 systems sold worldwide, Elea is the market leader in this field.

By Kevin Hill, Application Support Manager at Elea Technology GmbH

PRINCIPLE OF PEF

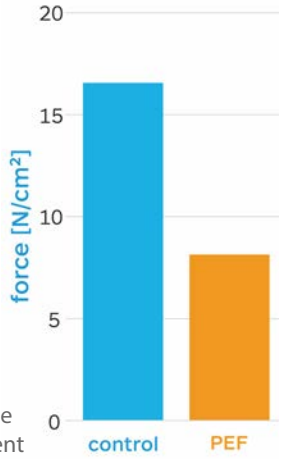
Utilizing short electrical pulses, PEF polarizes the ions situated around the cell membrane, increasing the natural occurring transmembrane potential, which, after reaching a certain level, leads to the rupture of the membrane, allowing for the intracellular water to leave the cell, resulting in the reduction of the turgor pressure in the raw material. This tissue softening resulting from this is comparable to thermal pretreatment, while utilizing significantly less energy and water. On an industrial scale, the PEF equipment consists of a treatment belt, which can transport all kinds of raw material from strawberries to sweet potatoes, and a modular generator, allowing for treatment of high production volumes. Integration into existing production lines is very easy as PEF is a volumetric treatment and does not require any form of product segregation prior to treatment. Therefore, it can be placed anywhere in the processing line as long as it is prior to slicing. While a thermal preheater requires a dwell time of up to 40 minutes, the same effect can be achieved with PEF in just 10 seconds, with the treatment itself lasting only microseconds, thereby minimizing the system's energy requirements. Depending on the throughput, Elea offers a wide variety of systems, from a small scale all in one solution with up to 10 t/h, to big scale systems allowing for a capacity of up to 100 t/h.

PROCESSING BENEFITS

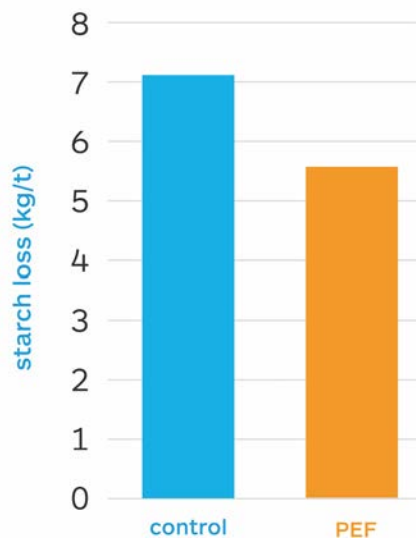
A lot of the benefits achieved by PEF can be traced back to the improved cutting, enabled by the open cell structure and the reduced turgor pressure in the raw material. Less breakage, reduced scrap and diminished starch loss results in a product yield increase of up to 2%. The degree of softening depends on the processed raw material and the applied specific energy. The goal is to achieve a cutting force reduction of 20 – 30%, which can be measured using the Elea Cut Control device.

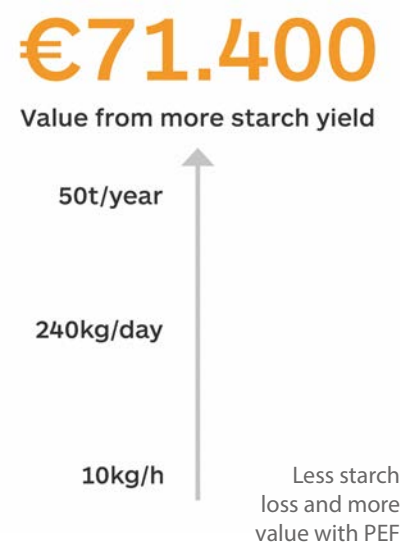
On average, a 10% reduction in starch loss can be observed when using PEF, which is the main contributing factor for the increase in production yield. Assuming a starch loss of 7 kg per ton of potatoes during processing without PEF, utilizing PEF on an 8 t/h French fry production line can save 50 tons of starch annually, resulting in approximately 150 additional tonnes of final product per year. The retainment of starch also

Elea's CutControl device for cutting force measurement



Sustainability – How Pulsed Improve Your Process





contributes to an improved texture of the final product and leads to less accumulation of starch in the processing water, further reducing the need for water recycling.

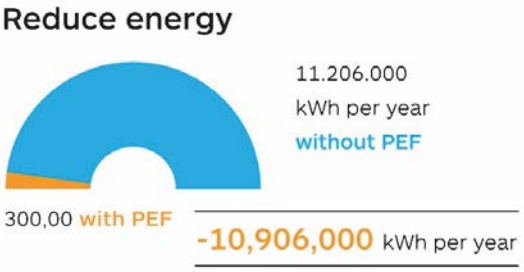
The cell opening not only reduces turgor pressure, but also allows a faster water diffusion and heat transfer rate permitting an adaptation of the frying process. Given sufficient fryer heating capacity, the frying time can be reduced by 5 to 10 % unlocking the potential for an increase in production capacity. Depending on fryer type and design, a reduction in frying temperature between 3 – 5 °C can be achieved, positively influencing color and taste of the final product by limiting the extend of the Maillard reaction.

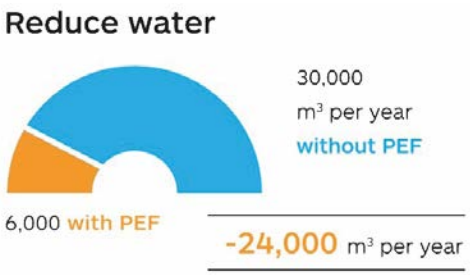
The smooth cutting surface influences the oil influx into the product which occurs through cracks formed during slicing. As PEF results in a soft structure and therefore reduces the amount of cracks on the surface, the counterflow of the escaping water is improved and the oil uptake can be reduced by up to 10%.

Reduction of oil uptake with PEF

SUSTAINABILITY IMPLICATIONS

Requiring only 1 – 1.5 kWh energy per ton of raw material, PEF is a very sustainable cell disintegration technology. Compared to a commercial pre-heater the energy and water requirements of a PEF system are 90% lower, and with a much shorter processing time it has become the new standard technology for the French fry industry. In order to optimize processing conditions of the PEF system, it is advised to use potatoes that are free from soil or surface starch before entering the treatment bath. Since the usability of the process water in the PEF system is only limited by its conductivity, it remains uncontaminated otherwise and can therefore be easily reused in downstream processing.



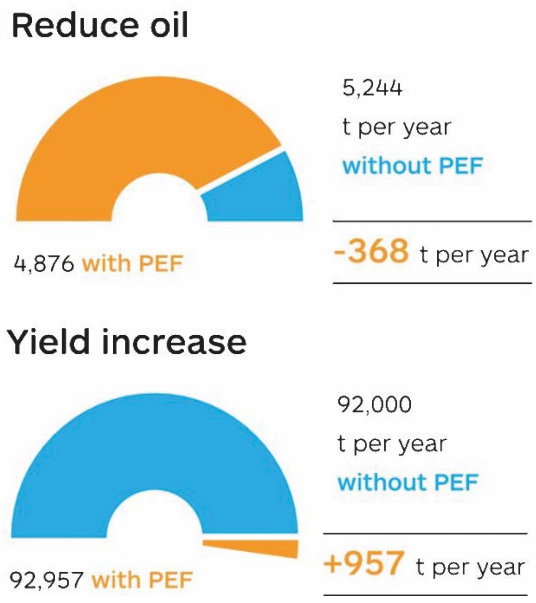


For a 26 t/h processing line, the yearly water savings amount is up to 24,000 m^3 while energy savings of 10 million kWh can be achieved when compared to a commercial pre-heater. Based on 250 installed

Elea PEF systems in the potato industry around the world, a total of 3 million tons of CO_2 savings have been achieved so far.

RETURN OF INVESTMENT (ROI)

PEF is quickly becoming a key investment for manufacturers in the French fry industry looking for high product quality, optimized production efficiency and reduced operational costs. As consumer demand increasingly favors higher quality and sustainably produced foods, the adoption of PEF technology is emerging as a key solution to meet these evolving expectations. Many companies that have implemented PEF so far experience payback times between 1 -2 years, depending on scale of operation and state of the art processing equipment. For larger producers the payback period might be as short as 6 months, especially when replacing a commercial preheater. Several factors influence ROI times, including cost efficiency, yield increase, quality enhancement, and oil reduction.



PEF technology significantly lowers energy consumption across the entire processing line. By replacing the thermal preheater, it cuts water and energy usage by up to 90%.

Additionally, PEF enables shorter blanching, drying, and frying times due to improved water release, further reducing energy require-ments. The softened tissue also decreases wear and tear on cutting knives, extending their lifespan and reducing downtime, which further enhances the line's productivity. One of the biggest influencing factors is the yield increase achieved by PEF. Reducing the starch loss into the processing water by 10% and reducing breakage as well as waste directly translates to an increase in volume of sellable product by 1 – 1.5% from the same quantity of raw potatoes, improving overall profitability. Considering a processing line of 26 t/h raw material capacity, this directly translates to a production increase of 957 tons of French fries per year, from the same amount of potato input.
Another major expense in the French fry production process is frying oil. Improved cutting, facilitated by PEF, contributes to reduced oil uptake by enhancing drainage, ensuring uniform cutting, and shortening frying time. The smoother cutting surface minimizes oil adherence to the fries as they exit the fryer, resulting in up to a 10% reduction in oil uptake. Consistent thickness is crucial, as fries that are too thin tend to absorb more oil due to being overfried more easily. Additionally, as less starch and small potato particles enter the fryer, the shelf life of the frying oil can also be increased, reducing the need for oil replacement due to reduced formation of free fatty acids. Using the same 26 t/h raw material line as an example, this leads to an overall reduction in oil consumption by 368 tons per year.
PEF systems are designed to integrate seamlessly into existing processing lines. While requiring an initial capital investment, they are very low in maintenance and due to the reduction in mechanical wear and tear in other processing steps, PEF helps to reduce downtime, ensuring more consistent produc-tion schedules and reducing costs related to unplanned maintenance.

NEW SYSTEM DEVELOPMENTS

Elea continues to drive innovation with the launch of two new PEF systems designed to meet the unique requirements of large-scale French fry manufacturers as well as small scale chips producers. Elea installed the world's first turn-key industrial PEF system for French fries at Wernsing (Germany) in 2012, after more than 10 years that system is still running, and more than 250 systems have been installed since. The newest, most innovative and highest capacity belt system to date is the **PEF Advantage B 1000-850** able to process 100 t/h of potatoes. Due to the large free cross-section of the belt, hassle-free product transport and high product load is achievable, leading to maximum energy efficiency and lower running costs. Enhanced

Elea PEF Advantage B Micro

Elea PEF Advantage B1000-850

safety features enable a fenceless and compact design. Powered by only a single generator, the system allows an easy integration into any existing processing line. Other new features include enhanced water management, easier cleaning and servicing as well as new power cabling for increased maximum length. Available with a split belt for multiple products, anti-foam dosing and automated conductivity control as well as different belt types suitable for sinking and floating products.

On the other end of the spectrum, Elea has also developed a compact, small-scale PEF system aimed at smaller producers, who specialize in potato or vegetable chip production. The system offers the same advanced PEF technology as the larger model but with a smaller footprint and lower investment costs. Its small footprint makes it easy to integrate into any existing processing line even with limited space. Understanding the budget constraints of smaller businesses, Elea has designed this system to be cost effective, offering an attractive entry point into the PEF technology.

Designed for a processing capacity of up to 1.7 t/h, the system is highly adaptable, allowing for processing of potatoes and other root vegetables, making it possible to experiment with different products and flavors. The **PEF Advantage B Micro** is equipped with the same safety and design features as the big scale systems, ensuring that each potato is processed with precision, resulting in a high-quality product that meets increasing demands of the customers.

With these new systems Elea is empowering food producers of all sizes to enhance their production and reap the benefits of PEF. •

Potato Processing in APAC: Health, Convenience, and Growth

The potato processing market in the Asia-Pacific (APAC) and Australia-New Zealand (ANZ) regions is witnessing sustained growth, driven by rising demand for convenience foods, evolving consumption habits, and advancements in processing technologies. As populations expand, particularly in urban areas, and disposable incomes rise, the market for processed potato products is expected to grow substantially, offering significant opportunities for both product manufacturers and equipment suppliers.

By Tudor Vintiloiu

Recent market analysis points to strong growth trends, with projections showing this momentum continuing in the coming years, especially within the snack food sector and frozen products category.

MARKET OVERVIEW

According to recent data, the APAC potato processing market was valued at approximately USD15.09bn in 2022 and is forecasted to reach USD22.63bn by 2030, growing at a compound annual growth rate (CAGR) of 5.3% between 2023 and 2030. This is consistent with broader global trends, where the overall potato processing market, estimated at USD39.19bn in 2021, is expected to expand to USD53.58bn by 2027, reflecting a CAGR of 5.4% over the forecast period.

Growth in the APAC and ANZ regions is particularly noteworthy because these markets are home to a rising middle class, especially in countries like China, India, and Southeast Asian nations. This demographic is increasingly adopting Western food habits, driving the demand for processed potato products, including French fries, potato chips, and other snack foods. In New Zealand and Australia, which already have high levels of processed potato consumption, growth is being driven by product innovation and increasing demand for premium, organic, and healthier potato-based snacks.

KEY MARKET DRIVERS

A combination of population growth, urbanization, and shifting consumer preferences is at the heart of the potato processing market's expansion in the APAC and ANZ regions. As urban populations grow, so does the demand for convenient, ready-to-cook, and frozen potato products. Consumers in these regions are leading increasingly busy lives, which is driving demand for easy-to-prepare foods. This is especially true in countries with rapidly growing middle-class populations, such as China and India, where processed potato products have become a staple in households and quick-service restaurants (QSRs).

In fact, frozen potato products, particularly French fries, are expected to dominate the market, capturing an estimated 67.24% of the market share by 2023. The food service industry, especially fast-food chains and restaurants, is one of the largest consumers of processed potato products, driving this market expansion. As QSRs continue to penetrate new markets and expand their operations across urban and rural areas, the demand for frozen and ready-to-cook potato products will only intensify. Moreover, potato starch, a key segment of the market, is projected to grow at an even faster pace, with a CAGR of 7.1% over the next several years. This growth is driven by the increasing use of potato starch in non-food sectors, including pharmaceuticals, paper, and textiles. In the food industry, potato starch is gaining popularity as a gluten-free thickening agent and is used in a variety of processed foods, further boosting the segment's growth.

SEGMENT ANALYSIS

Among the product types, French fries continue to dominate the market. The growing popularity of Western-style fast food and casual dining is propelling the demand for frozen French fries in both retail and food service sectors. Innovations in freezing and packaging technology have also extended the shelf life of these products, allowing them to be distributed more widely across markets in the region. In addition to French fries, there has been growing demand for other processed potato products such as potato flakes, granules, and frozen whole potatoes. These products are increasingly being utilized by food manufacturers for the production of snacks, ready meals, and other value-added products. The industrial applications segment, driven by the extensive use of processed potatoes in food manufacturing, is anticipated to grow at a CAGR of 5.7%, further solidifying the role of potato processing in the broader food production ecosystem.

TECHNOLOGICAL ADVANCEMENTS AND INNOVATIONS

One of the critical drivers of growth in the potato processing market is the continuous advancements in processing technologies. Automation and improved processing equipment are reducing production costs and enhancing product consistency and quality. For example, innovations in peeling, cutting, and blanching technologies have improved yields and minimized waste. Efficient storage and freezing technologies have also played a vital role in extending the shelf life of processed potato products, enabling producers to meet the growing demand in distant markets. Furthermore, developments in food safety technologies, such as real-time monitoring and better traceability, are helping processors ensure product quality and meet stringent safety standards, especially in export markets. These innovations not only streamline operations but also address consumer concerns about food safety and quality, particularly in markets like Japan and Australia, where consumer expectations are high.

FUTURE TRENDS AND FORECAST

Looking ahead, the APAC and ANZ potato processing markets are set to witness several key trends that will shape their future trajectory. One of the most significant trends is the shift towards healthier, more sustainable potato products, especially in the ANZ area. Increasing awareness of health and wellness is pushing consumers towards less processed, organic, and low-fat potato snacks. Potato processors are responding to this demand by introducing baked chips, air-fried products, and snacks made from organic potatoes, aligning their product lines with evolving consumer preferences.

Sustainability is another critical factor shaping the market. Leading companies in the region are increasingly focusing on sustainable farming practices, including the use of precision agriculture, water conservation techniques, and waste reduction strategies. By adopting environmentally friendly practices, processors are not only reducing their carbon footprint but also responding to growing consumer demands for more sustainable products. This trend is likely to influence future investments and innovations in the sector, with companies exploring renewable energy use, circular economy initiatives, and sustainable packaging options.

Another notable trend is the increased interest in premium and gourmet potato snacks, particularly in more mature markets like Australia and New Zealand. Consumers in these regions are seeking higher-quality products with unique flavors, natural ingredients, and artisanal preparation methods. This trend is creating new opportunities for niche players to enter the market with differentiated offerings, catering to the growing segment of health-conscious and discerning consumers.

KEY REGIONAL DIFFERENCES

The potato processing markets in the APAC/ANZ regions differ significantly from Western markets, primarily in consumer preferences and growth dynamics. In the APAC region, rapid urbanization and busy lifestyles fuel the demand for convenient, affordable frozen potato products. These products are often seen as quick meal solutions, reflecting the region's evolving culinary landscape. Meanwhile, Western consumers are more focused on health and wellness, driving demand for organic, lower-fat, and more natural potato products.

The APAC market also shows a growing interest in international flavors, particularly those resembling Western fast food, while Western markets emphasize gourmet and unique flavor innovations.

As the market continues to evolve, companies operating in this space will need to adapt their strategies to capitalize on these trends, investing in technology, sustainability, and product innovation to stay competitive in this dynamic market. •

TNA Solutions helped Preziosi Food increase its snack production capacity by 76%

Complete Processing Lines for Savoury Snacks: Challenges and Opportunities

The global savoury snack market faces several challenges and opportunities. While it is projected to grow at a CAGR of 5.2%, reaching USD 263 billion by 2027[1], climate change is increasingly impacting the supply of raw materials, such as potatoes, leading to volatile prices. This volatility, combined with the cost-of-living crisis and inflation, puts pressure on both manufacturers and consumers, highlighting the need for snack brands to balance product attributes with affordability.

By Twan van den Berg, Group Solution Specialist - Processing, TNA Solutions

Supporting the market growth, consumer habits are shifting from traditional meals to all-day snacking, with over two-thirds of consumers globally snacking at least once a day[2]. This trend is intertwined with the health and wellness movement, driving demand for healthier snack options. According to GlobalData's global consumer survey, 81% of the global population are concerned about their physical fitness and health[3].

Global regulations are also influencing the savoury snack market. This includes initiatives like the UK's HFSS (high fat, sugar, or salt) legislation, which restricts the promotion of HFSS products by location and volume price and will fully take effect by 2025. Similarly, the FDA in the US is focusing on enhancing consumer access to nutrition information, aiming to facilitate healthier food choices. These regulatory pressures are pushing manufacturers further to reformulate their products without compromising the overall product quality and, most importantly, the taste.

To meet these challenges, snack brands are turning to complete processing line solutions that maximise output, ensure flexibility, minimise downtime, and reduce the total cost of ownership. Partnering with an end-to-end solution provider like TNA is crucial for optimising productivity across the entire production process, from receiving, destoning, washing, peeling, inspecting, slicing, blanching, dewatering, frying (continuous-/vacuum-/batch-), deoiling, sorting, distribution, seasoning, and even packaging.

ADDRESSING EVER-CHANGING CONSUMER PREFERENCES

As consumer preferences shift towards exciting flavours, snack producers must be flexible in catering to diverse tastes. International flavours, particularly Mexican and Asian, are gaining popularity globally, with churro, turmeric, and Korean BBQ standing out[4]. Even as consumers seek more nutritious ingredients, they still desire enjoyable snacks. Mintel's research indicates that 37% of snackers feel unique flavours make healthier snacks feel like a treat, highlighting the importance of balancing taste and health.

To meet these evolving demands, snack producers require flexible production lines capable of accommodating a wide range of products and flavours. TNA offers solutions that enable precise recipe control and quick changeovers. The tna intelli-flav® OMS 5.1, the next-generation on-machine seasoning system, provides both powder flavouring and liquid oil in a single drum and delivers consistent coverage and flavour to a variety of products, including wet, dry and

Sources: [1]Markets and Markets, Savory Snack Products Market Global Forecast to 2027, [2]Innova Market Insights, Consumer Snacking Trends, [3]GlobalData's 2023 Q4 global consumer survey, GDCG240008HT - February 14, 2024, [4]Mintel, The Future of Salty Snacks 2023

TNA Solutions ensures consistently high-quality packaging

slurry applications. Features such as independent scarf feeders and separate tumble drums are essential to accommodating alternative product varieties on a single production line. Responsive variable mass controls and dynamic vibratory weigher allow for accurate flavour and oil application, essential for maintaining product quality, minimising seasoning waste, and reducing costs.

The growing demand for better-for-you snacks with lower salt and fat content drives the industry towards more automated, recipe-driven approaches. The intelligent OMS 5.1 seasoning with integrated controls and monitoring ensures the precise application of ingredients, enhancing transparency and efficiency. Digitally enabled systems allow manufacturers to quickly adapt recipes and follow trends, seamlessly switching between healthier and standard products by simply selecting a pre-set recipe for each batch.

CREATING HEALTHIER SNACKS WITH TECHNOLOGY

Oil quality is crucial in the snacks sector for producing healthier, better-for-you products. Recent advancements in frying technologies, such as Continuous Vacuum Frying and Batch Frying, have made it possible to lower frying temperatures, resulting in snacks with improved health benefits and extended shelf life. For example, the tna conti-pro PC 3, a continuous chip frying system, lowers acrylamide formation and oil absorption, producing healthier, low-fat snacks with natural colour and texture.

Batch Frying, such as the tna batch-pro 12, equipped with a unique thermal fluid heating system, provides consistent frying conditions that ensure uniform product quality. The system's rapid temperature recovery minimises the impact of product loading, maintaining optimal frying temperatures for evenly cooked products with consistent texture, colour, and taste. Additionally, the advanced oil filtration system extends the lifespan of the oil by removing contaminating particles, reducing overall costs, and improving product quality by lowering the risk of off-flavours or spoilage from old oil.

Beyond different frying technologies such as batch frying, vacuum frying or continuous frying, technologies such as pulsed electric field (PEF) are increasingly being introduced in medium to large size processing lines for savoury snacks. More accurate cutting, better cutting quality, increased blade lifespan, smoother chip surfaces, less breakage and feathering, better diffusion processes during blanching (if needed) and less oil absorption are the most important results of the PEF treatment of raw, whole potatoes when making chips. These innovations create healthier snacks while preserving the crispiness that consumers love, ensuring that the products remain both competitive and appealing.

At the TNA Food Technology Centre in Woerden, the Netherlands, snack manufacturers can collaborate with TNA experts to test products, optimise production, and conduct technical feasibility studies. The centre supports product development and the commissioning of new lines by refining recipes in a real-world environment.

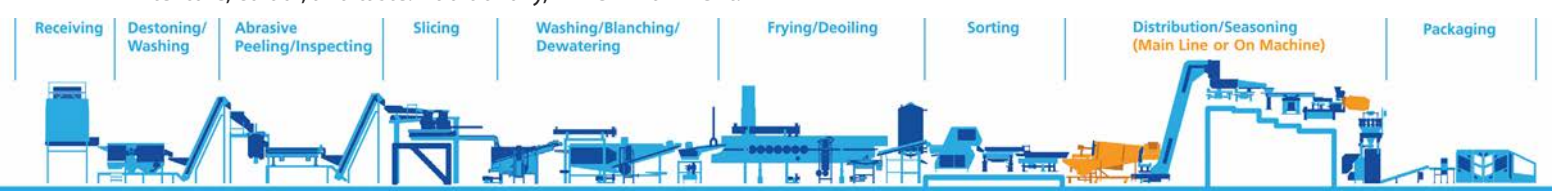
EFFICIENCY IS KING

In the snack market growing at 5.2% annually, with rising energy costs and financial pressures on consumers, efficient production processes are essential to stay competitive. For optimal productivity, partnering with an end-to-end solution provider like TNA, that is experienced in the entire production process, is crucial. A partner with expertise across the entire production line - from receiving to packaging - can help producers achieve the perfect balance between consumer satisfaction and profitability.

End-to-end solution providers have the capabilities and expertise to support customers from a project's inception to its completion and beyond. An integrated setup not only streamlines the production process but also boosts efficiency and reduces the likelihood of errors or inconsistencies.

Choosing the right partner goes beyond selecting food processing equipment; it involves access to trend insights and expert knowledge across the production process. By investing in complete line solutions, snack producers can transform an initial idea into a complete eating experience that keeps consumers coming back for more. •

TNA OMS 5.1 – on-machine seasoning system ensures even flavour distribution and enhances product quality



TNA's complete potato chip line ensures optimal efficiency and the lowest total cost of ownership

Nothing Else Batters

Battering is a coating typically made from ingredients such as flour, water, and seasonings, that forms a crispy outer shell when fried, differentiating it from other coatings, like starch-based coatings, which are not as thick and are used on potato products to reduce oil uptake during frying, and other functional purposes.

By Tudor Vintiloiu

In essence, battering is a versatile method to elevate fried potato products by enhancing their texture, flavor, and appearance. Through careful customization of the ingredients, it's possible to achieve a variety of sensory outcomes tailored to consumer preferences.

When fried, the batter forms a crispy outer layer, giving the product a satisfying crunch. This crispiness is the result of the high heat, which transforms the batter into a golden-brown shell around the potato.

Beyond the texture, the batter can be flavored with a range of seasonings, herbs, and spices, infusing the potato with additional taste.

The golden-brown color that fried potato products are known for is also due, in part, to the batter. Ingredients like milk solids or spices in the batter encourage browning during the frying process, making the product visually appealing.

Another benefit of the batter coating is its ability to retain

moisture within the potato. During frying, the coating acts as a seal, ensuring that the interior remains soft and moist, while the exterior crisps up. Depending on the specific ingredients used in the batter, it can also influence the overall texture, offering anything from a light crunch to a softer, more pillowy bite.

FACTORS INFLUENCING THE BATTERING PROCESS

The battering process in potato preparation is influenced by several crucial factors that affect the final product's texture and quality. One of the primary considerations is temperature. Both the batter and frying oil temperatures must be carefully controlled, as higher heat can enhance crispiness but may also increase oil absorption if left unchecked. The variety of potato used is another important factor, as different varieties have varying starch content and moisture levels. For instance, waxy potatoes might yield a different texture compared to starchy varieties, particularly in terms of moisture retention and crispness. Starch content within the batter itself also plays a vital role, influencing viscosity and adhesion. A higher starch content improves the batter's ability to form a protective, crispy layer. Alongside starch, the composition of the batter, including the choice of flours and additives like leavening agents, affects the thickness and texture of the coating. Viscosity is equally important, as it ensures the batter sticks evenly to the potato without becoming too thick, which could result in uneven cooking. Continuously adjusting the viscosity throughout the battering process helps maintain consistency and quality.

NUTRITIONAL IMPACT

Beyond its effect on texture, the battering process also impacts the nutritional value of potato products. Fried and battered potatoes, such as French fries or wedges, typically have lower moisture and higher oil content than their boiled or baked counterparts. However, using specific starches like sweet potato starch in the batter can help reduce oil absorption, thus lowering the fat content in the final product. The frying process also leads to moisture loss, concentrating nutrients like carbohydrates, protein, and fiber in the potatoes, meaning that battered products can have significantly higher energy content than raw or boiled potatoes.
Unfortunately, the process is not without downsides, as water-soluble vitamins like vitamin C and B vitamins are vulnerable to heat and can be lost during frying.

Additionally, the battering and frying process causes starch gelatinization, making the starch more digestible but potentially increasing the glycemic index of the final product.

PRODUCT EXAMPLES

Two prominent companies producing batters for potato products are Bowman Ingredients and Newly Weds Foods. Both are known for their innovative approaches to food coating systems that enhance flavor, texture, and shelf life in the potato processing industry.

Bowman Ingredients specializes in creating advanced coating systems for global food manufacturers, with a strong emphasis on batters and breaders. Their products are designed for both retail and foodservice sectors, catering to the demand for crispy, flavorful coatings in potato products such as fries, wedges, and hash browns. Bowman offers a wide variety of batter solutions, including tempura-style batters, which are designed to maintain crispiness even after cooling. They focus heavily on customizing these coatings based on customer needs, ensuring that their batters deliver not only the desired sensory properties but also optimal performance during frying or baking. Their extensive expertise in cereal technology allows them to produce unique, high-quality flours that form the basis of many of their bespoke coating systems.

Sustainability is also at the core of Bowman's operations. They work closely with their customers to develop solutions that are not only effective in terms of taste and texture but also environmentally responsible. By sourcing ingredients thoughtfully and developing processes that reduce waste and energy use, they align their manufacturing practices with sustainable goals.

Newly Weds Foods, another leader in the development of food coatings, is renowned for its broad range of batter products, which are widely used in potato processing. Their portfolio includes traditional liquid batters as well as more advanced starch-based coatings designed to reduce oil uptake during frying. This is particularly beneficial for manufacturers looking to produce healthier potato products with lower fat content while maintaining the crispy texture that consumers desire.

The company's commitment to innovation is evident in their focus on providing customized solutions. Newly Weds Foods tailors their batter formulations to meet the specific needs of food manufacturers, ensuring that their products deliver consistent quality and performance across different processing conditions. This includes developing coatings that work well in both frozen and chilled potato products, ensuring that the final texture remains consistent even after reheating. Newly Weds Foods also emphasizes the importance of collaboration with their clients. They work closely with food technologists to create products that meet consumer trends, including clean-label ingredients and natural flavor enhancements. The company operates on a global scale, with manufacturing plants across North America, Europe, and Asia, allowing them to supply batters to a wide range of customers.

MARKET ENVIRONMENT

The demand for battered products has risen in recent years, driven by consumer preferences for crispy and flavorful options. The market for such products, including frozen varieties like fries and wedges, has been on a steady rise, driven by several factors. The convenience and versatility of these products make them popular in both food service and household settings. According to Research & Markets insights, the global frozen potato market, which includes battered and pre-cooked options, is expected to reach USD88bn by 2030, growing at a CAGR of 4.8%. The battered and cooked potato segment alone generated over USD2.8bn in revenue in 2022. This growth is supported by shifting consumer preferences towards more fast-paced lifestyles, where the ease of preparing frozen potato products aligns with modern meal solutions. Battered potato items, with their crispy texture and quick preparation time, cater to these needs.

Additionally, innovations in food delivery services and the growing foodservice industry are contributing to this upward trend. Consumers are increasingly dining out, ordering takeout, or opting for ready-made meal kits, all of which incorporate frozen and battered potato products due to their consistent quality and versatility.

Despite this growth, challenges such as health concerns over additives and sodium levels in battered products could temper demand. However, product innovation, including reducing oil absorption through advanced batters, is helping address these concerns, positioning the market for continued expansion. •

Jonathan Thomas

Sprucing Up Menus

More diverse items featuring potato products are appearing within the global foodservice industry.

By Jonathan Thomas

The global foodservice industry (which is valued at between USD5trn and USD6trn) represents a major user of potato-based products throughout the world. In many leading markets, consumers have become steadily more demanding in their tastes and requirements, with the result that foodservice operators need to develop their menus to stand out from their rivals.

The main potato-based products used by foodservice companies are frozen varieties (e.g. chips, French fries, hash browns, waffles, etc.) and savory snacks such as potato chips. NPD levels tend to be higher within the former sector, where there is more scope for menu innovation and less of an overlap between the products sold via foodservice and retail channels.

MAJOR INNOVATIONS

In recent years, manufacturers of frozen potato products have addressed one of the major trends in the European foodservice industry, namely the continued growth of the home delivery sector as evidenced by the increased presence of operators such as Deliveroo, Just Eat and Uber

Eats. According to Renub Research, the European online food delivery market was valued at more than USD26.7bn in 2023, a figure that is forecast to increase by an annual average of almost 10% to nearly USD62.6bn by 2032. Much of this growth will be driven by the expanding urban population, a growing desire for restaurant-quality food at home (exacerbated by a lack of time for cooking meals) and a continued expansion in the number of operators and food delivery apps. Most current indications suggest the market is poised for further expansion. During the first half of 2024, Deliveroo's operations in the UK (one of the largest online food delivery markets in Europe) recorded a profit for the first time, while it has also recently launched a new exclusive subscription offer called Plus Diamond, which offers services such as prompt delivery and 10% credit back on orders of GBP30 or more. Operators such as Deliveroo and Uber Eats have also broadened their offerings to include retail and grocery deliveries – in the case of Uber Eats, these channels now account for up to 40% of total sales.

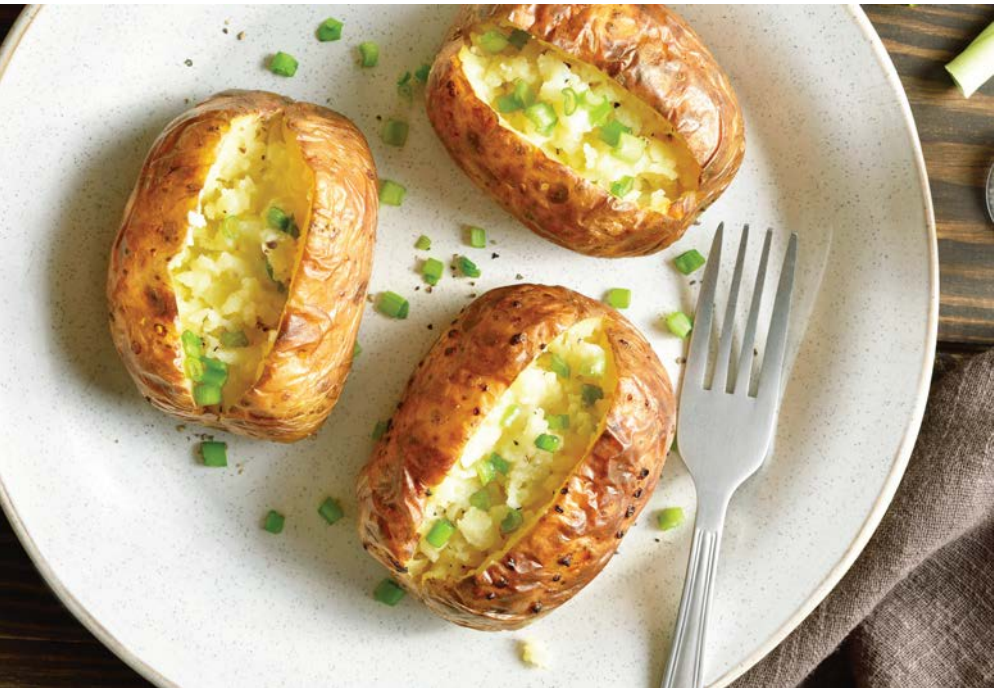
In response to these trends, manufacturers have been developing potato-based products suitable for home delivery applications, specifically those capable of staying hot and crispy for longer periods. According to recent research from Aviko, 83% of UK consumers stated that crunchiness was the most important factors when ordering fries/chips for delivery, while 81% would order them more frequently if they were warm and crunchy when they arrived. Aviko supplies SuperCrunch Fries, which are described as perfect for the home delivery market. According to the company, the fries feature a unique crispy coating made using a gluten-free batter (which acts as a barrier against moisture and therefore keeps them hotter for longer periods) and are also promoted as being 135% crispier than standard fries.

Also present within this market is McCain, whose foodservice range includes SureCrisp and which has recently entered into partnership with a leading pizza operator to develop new French fries. The SureCrisp products were developed in response to consumer frustrations regarding soggy fries and which feature a technology that holds their temperature and crispiness for 20 minutes. The SureCrisp range includes products such as Gourmet Chunky Chips, Traditional Thick Chips, Julienne Fries and Skin-on Medium Chips. One of McCain's other leading competitors is Lamb Weston, whose range of frozen French fries includes varieties such as Crispy on Delivery Fries (a range of fries suitable for home delivery applications), StealthFries (which feature a special coating for an extra crispy bite) and Hot2Home, which stay hot and crispy for up to 20 minutes longer than regular varieties and are therefore especially suited to the home delivery market.

Arguably one of the other most significant areas of innovation within both the foodservice and retail industries is the growing demand for 'loaded' products, a trend especially apparent within the market for chips and French fries. Loaded fries are becoming more widespread in the foodservice industry as more operators seek to develop their menus to drive consumer expenditure, while their rising popularity has led some manufacturers to develop products targeted at the retail sector – McCain UK, for example, supplies Street Fries in flavors such as Cheese & Bacon, BBQ Beef and Pulled Pork.

In many western markets, loaded fries tend to be most popular with the younger age groups, especially millennials and those belonging to Generation Z. In the US market and elsewhere, they have also proved a favorite for sports fans, representing an ideal accompaniment to watching events. In the foodservice industry, loaded fries are usually created via the addition of a protein to the initial potato product (such as bacon or pulled pork), followed by a cheese and then finished off with a sauce. Notable examples from UK foodservice operators include the following:

- **Voodoo loaded fries** – launched by the expanding Wingstop chain, which specializes in fried chicken and chips and operates around 1,400 sites in the US market. The fries



are topped with Cheddar cheese, jalapenos, bacon and ranch sauce.

- **Fries Bell Grande** – appears on Taco Bell's UK menu, consisting of a large portion of seasoned fries topped with sliced beef, tomatoes, sour cream and warm nacho cheese sauce.
- **Fully Loaded Chips** – served by the chicken chain Nando's, which comprises peri-salted chips topped with pulled chicken, Cheddar cheese, onions and the company's signature peri sauce.
- **Animal Fries** – served by the restaurant chain Burger & Sauce, which are topped with jalapenos and the company's own signature sauce.
- **Kebab Fries** – appears on Sizzling Pubs menus, a chain owned by Mitchells & Butlers Leisure Retail. The fries are topped with Greek-style chicken, tzatziki (a traditional Greek dip based on yoghurt and cucumber), onions, jalapenos and hot sauce. The same company also provides Hunter's Fries, which are topped with bacon, onion and nacho cheese and BBQ sauces.

To the above can be added various local specialties – for example, curry sauce represents a popular accompaniment to chips in markets such as the UK and Ireland, while fries smothered with poutine (a sauce made with gravy and cheese curds) are a favorite amongst Canadian consumers. During the summer of 2024, the US QSR chain Slim Chickens extended its menu with Chicken Bacon Ranch loaded fries, consisting of seasoned fries topped with breaded chicken, bacon, shredded cheese, jalapenos and ranch sauce. As the loaded fries market has grown, imagination appears to be the only limit as far as toppings are concerned, while images of the more visually striking examples are frequently shared on social media websites such as Instagram.

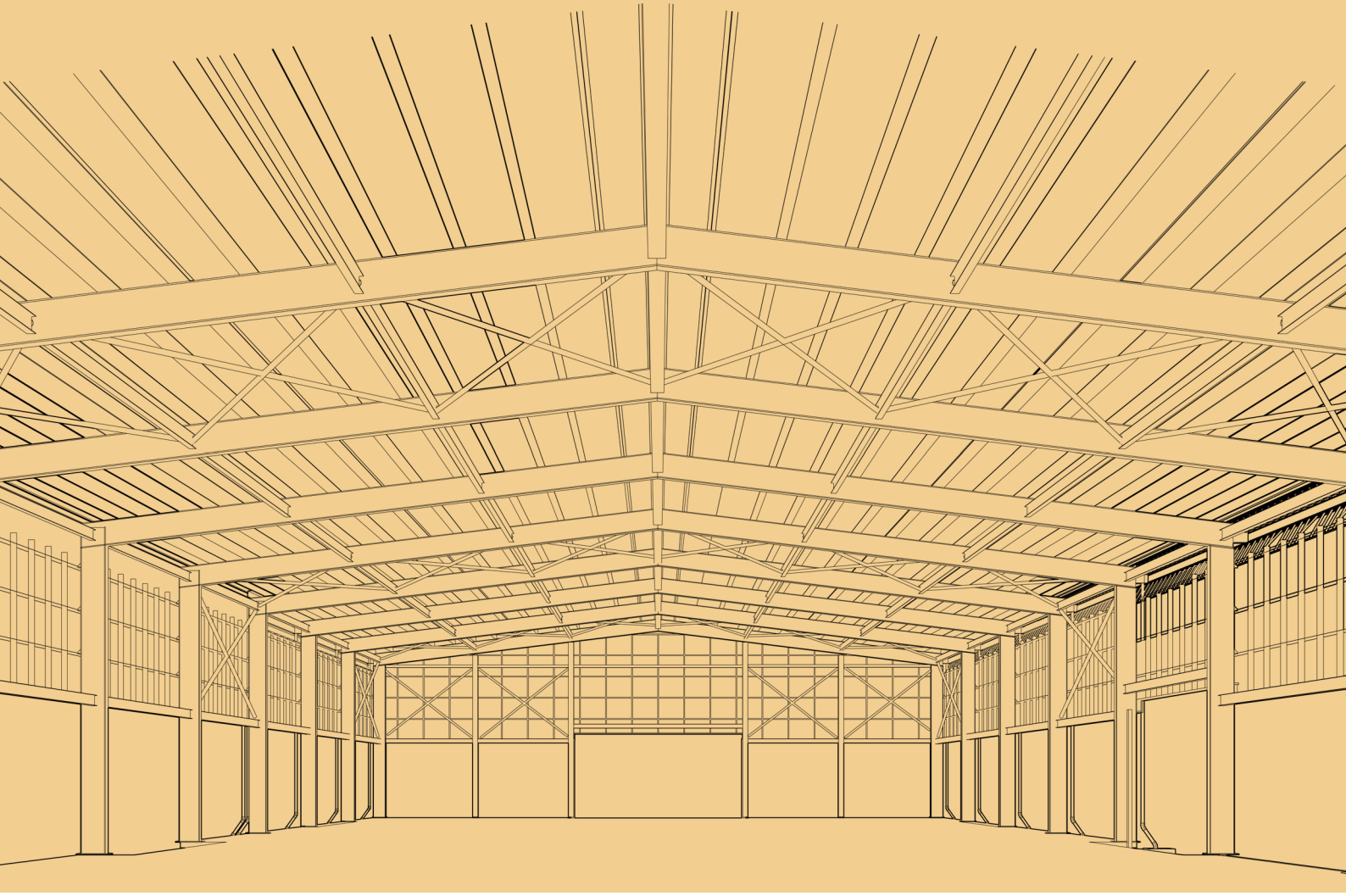
The rising demand for loaded fries has also been driven by the continued expansion of the street foods market in many western countries. Loaded fries represent one of the most popular ways of serving potatoes, as evidenced by the emergence of street food operators such as Hey Spud! This UK-based company specializes in fusion loaded fries, serving customers across London, Bedfordshire, Hertfordshire and Buckinghamshire. Toppings for its fries include nacho cheese, bacon, BBQ pulled pork, beef chilli and jackfruit madras curry.

Another driver of innovation and new product activity within the foodservice industry is the rising demand for French fries and other potato products with a more rustic and/or artisanal appearance and taste, of which skin-on varieties represent a leading example. Recent research from Aviko, for example, found that 65% of foodservice diners are attracted to skin-on chips with a homemade appearance. Aside from their visual appeal, skin-on products are perceived by many consumers as having an enhanced flavor and texture. Skin-on products also carry health and nutritional benefits, given that potato skins are rich in fiber, potassium, vitamin C and various antioxidants. According to scientific research, leaving the skin on can

increase the nutritional value of potatoes by up to 35%.
Mashed potato also represents a popular meal accompaniment throughout the foodservice industry, especially in markets such as the UK and Ireland. As the market has developed, more varieties of mashed potato have appeared. Innovation within this sector has usually taken the form of developing flavored products catering towards the consumer desire for new and interesting taste profiles. Much of this has involved the incorporation of cheeses such as Cheddar and Parmesan, as well as various herbs and vegetables – examples have included onions (sometimes caramelized), shallots, leeks, chives, mushrooms, garlic and chopped peppers. The addition of chopped pieces of bacon or ham has also been apparent (which can enhance texture as well as taste), while mustard is sometimes used to impart a bolder taste profile to mashed potato.

EARLIER EATING OCCASIONS

Innovation within the foodservice industry has been influenced lately by the growing tendency of many consumers in the post-pandemic environment to eat out earlier in the day, rather than during lunchtime and evenings. While out-of-home breakfasting has always been hugely popular in the US, its appeal has also grown in European markets such as the UK in recent years. Although the expansion of this sector was temporarily halted during the pandemic, the popularity of eating breakfast out of the home appears to be increasing again. According to the Delifrance Breakfast Report 2022, 24% of UK consumers ate breakfast out of home during a typical week, a habit most apparent amongst people aged 18-24. Separate data from Lumina Intelligence found that breakfasts accounted for just over 4% of all out-of-home (OOH) eating occasions in the UK during 2022, up from 3.5% the previous year. Popular venues for out of home breakfasts in the UK include fast food operators such as McDonalds (which accounted for over 12% of all OOH breakfast eating occasions), ahead of Greggs, coffee shop chains (e.g. Costa Coffee and Starbucks) and pub group JD Wetherspoon.
Meanwhile, brunch is also assuming greater significance as an eating occasion within the European foodservice industry, especially at weekends. The trend towards less structured and formal mealtimes has led to more people (particularly within the younger age groups) eating whenever the occasion suits them, while brunch occasions can help foodservice operators fill the traditional void which usually occurs prior to lunchtime. According to a 2024 survey of 300 British adults carried out by Appinio for Aviko UK, 47% of respondents claimed to eat brunch at least once per week. The most popular time for eating brunch amongst these consumers appears to be between 10am and midday.
As this market has become more competitive, menus are growing more diverse to cater towards more demanding consumers. Frozen potato products such as hash browns and waffles represent some of the more popular menu components for meals served as breakfasts and brunches. For many people, hash browns represent an important component of cooked breakfasts, although the campaign group English Breakfast Society spoke out against them in 2023, claiming they had only been popularized as a cooked breakfast component in the UK due to their presence in the McDonalds menu. The Appinio survey mentioned previously found that 92% of respondents would expect to see two or more hash browns within a British breakfast or brunch, while 38% expected bottomless brunch menus to incorporate the option of hash browns.
Innovation has been relatively limited within the hash browns sector. Much of this has been because most consumers appear to appreciate hash browns for their relative simplicity, although certain product attributes are valued – for example, the Appinio research found that 64% of respondents mentioned a crunchy texture as the most important factor for hash browns, while 59% expressed a preference for a golden color.
In recent years, Iceland has launched hash browns filled with tomato ketchup and BBQ sauce, although these were developed exclusively for the retail market. Nevertheless, more foodservice menus are now featuring what might be termed 'loaded' hash browns during breakfast and brunch occasions. These usually involve the addition of various cheese, sauces or other ingredients in a similar fashion to loaded fries. There has even been some experimentation with sweet options, examples of which have included maple syrup and spices such as cinnamon. •



Designing and Constructing Potato Storage Buildings for the Potato Processing Industry

Potato storage buildings are critical infrastructures in the potato processing industry, where the storage environment must be meticulously controlled to maintain the quality and longevity of the crop.

By Tudor Vintiloiu

One of the foremost challenges in potato storage is maintaining the optimal environmental conditions that ensure the potatoes remain fresh, disease-free, and ready for processing. The ideal storage temperature for potatoes is generally between 7 to 10°C, with a relative humidity of 90 to 95%. Deviations from these conditions can cause significant losses due to spoilage, dehydration, or the growth of diseases like blight. To achieve this, storage buildings must be designed with advanced climate control systems. These systems typically include refrigeration units, ventilation systems, and humidification controls that work together to maintain a stable environment. As noted in a reference from Frisomat, "The climate control with insulation is tailored to your location and potato varieties, ensuring that the storage conditions are always optimal." This statement underscores the importance of a customized approach where the insulation and climate systems are adapted to the specific needs of the potatoes being stored, as well as the external climatic conditions.

STRUCTURAL INTEGRITY AND DESIGN

The structural design of potato storage buildings plays a critical role

in ensuring both the longevity of the building and the quality of the stored potatoes. Steel frame buildings, as commonly used by Frisomat and Fowler & Gilbert, are particularly popular in the industry due to their durability, ease of maintenance, and the ability to create large, open spaces without internal supports, which is ideal for bulk storage.
These steel structures are often designed with a focus on insulation and sealing to prevent heat ingress and moisture buildup. For example, Frisomat emphasizes that their potato storage halls are "galvanized for extra damp protection," which is crucial in preventing the internal climate from being compromised by external weather conditions. Additionally, the use of materials that minimize thermal bridging and condensation is critical in maintaining a consistent internal environment.

VENTILATION AND AIRFLOW MANAGEMENT

Effective ventilation one of the first things to consider when building a new storage, and is essential to prevent the buildup of moisture and the development of hotspots within the facility, which can lead to rot and spoilage. The integration of louvres with internal mesh, as utilized by Fowler & Gilbert, allows for the ingress of fresh air while keeping pests out. This design also helps in managing the airflow to ensure even distribution across the storage area, which is particularly important in bulk storage scenarios where potatoes are piled high.
In more advanced storage facilities, automated systems are used to monitor and adjust the ventilation rates based on real-time data from sensors placed throughout the storage area. This level of automation not only improves the efficiency of the storage process but also ensures that the conditions remain optimal at all times, reducing the risk of spoilage.

ENERGY EFFICIENCY

Energy efficiency is increasingly becoming a priority in the design of potato storage buildings, driven by the rising costs of energy and the push towards more sustainable agricultural practices. Modern storage facilities are being equipped with energy-saving technologies such as solar panels, LED lighting, and high-efficiency refrigeration units. For instance, one case study highlighted by Frisomat mentioned that a potato storage facility was able to cover a significant portion of its energy needs through solar power, drastically reducing operational costs.
Furthermore, the use of predictive control systems allows for the fine-tuning of energy use. These systems can anticipate changes in external conditions and adjust the internal

climate control systems accordingly, ensuring that energy is used efficiently without compromising the quality of the stored potatoes.

GRANEX POTATO STORAGE FACILITY

A prime example of a well-designed potato storage facility is the Granex storage hall in Ukraine, constructed by Frisomat. This facility was designed to store 10,000 tonnes of potatoes, with a focus on maintaining the highest standards of quality and environmental control.
According to Frisomat, the steel used in the construction was selected for its superior durability and ability to withstand the harsh Ukrainian winters, ensuring that the stored potatoes remained at a consistent temperature throughout the year.
The facility also incorporated advanced climate control systems, including insulation tailored to the local climate and ventilation systems designed to ensure even airflow throughout the storage area. This project underscores the importance of working with experienced construction partners who understand the unique requirements of potato storage and can deliver solutions that meet the highest standards of the industry.

OMNIVENT AND FARM FRITES

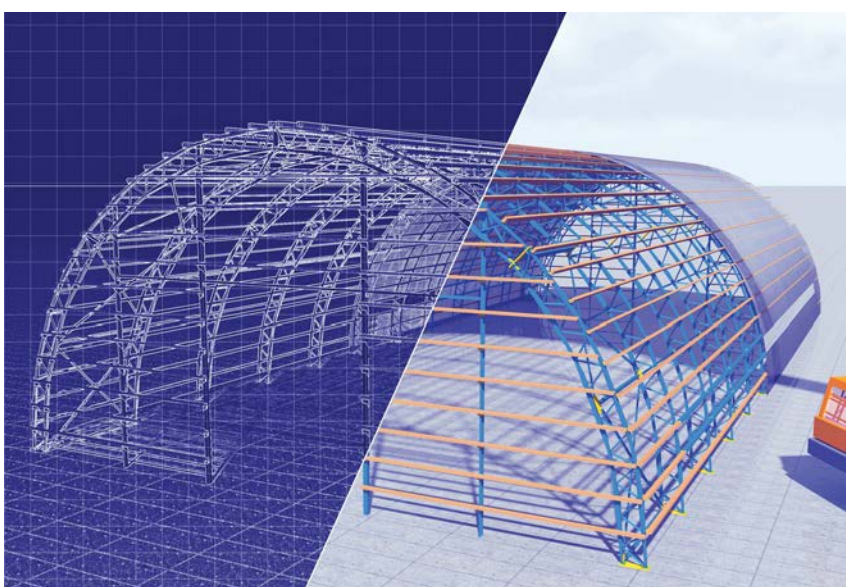
Farm Frites, a global supplier of processed potato products, undertook a major storage upgrade in its facility in Lębork, Poland, partnering with Omnivent to implement advanced storage technologies. The objective was to improve energy efficiency and product quality while storing 12,000 tons of potatoes. Omnivent's solutions, particularly the use of their OmniCuro storage automation system, helped optimize ventilation, cooling, and humidity control. This led to a significant reduction in energy consumption by around 30%, providing an environmentally sustainable solution without compromising on the storage quality of the potatoes.
Omnivent's installation at Farm Frites included tailored climate control technologies designed to monitor and adjust temperature and humidity levels in real-time. This not only improved the storage duration and quality of the potatoes, but also made the entire process more energy efficient. The advanced automation features enabled better management and reduced operating costs, demonstrating the scalability and adaptability of Omnivent's storage solutions for large-scale potato processing operations.

MOOIJ AGRO'S PRESSURE VENTILATION

Mooij Agro's ventilation technology was implemented at a storage facility in Viersen, Germany, specializing in table potato storage. The facility features an advanced box storage system, which is crucial for maintaining high-quality potatoes by ensuring consistent air circulation. A key component of the project was the installation of pressure ventilation systems, which offer precise airflow control, critical for preventing moisture buildup and maintaining the right temperature during long-term storage.
The pressure ventilation technology, developed by Mooij Agro, provides efficient air distribution across potato stacks, optimizing the storage environment for each box. This solution is complemented by the company's advanced Croptimiz-r control system, allowing storage managers to monitor and adjust the internal climate remotely through an intuitive user interface. The system is designed to be user-friendly, minimizing energy consumption while maximizing the storage lifespan of the potatoes. Through automation, operators can closely monitor variables like temperature and humidity, reducing losses and ensuring consistent product quality.
In Viersen, the combination of these technologies has resulted in a significant reduction in spoilage and energy costs, ensuring the client's ability to meet quality standards while maintaining profitability. The advanced control capabilities offered by the Croptimiz-r system have proven to be a key factor in achieving these outcomes, reinforcing the importance of integrated climate management in modern potato storage facilities.

CONCLUSION

Designing and building potato storage facilities requires a comprehensive approach that considers the unique needs of the crop, the local climate, and the operational requirements of the storage facility. By focusing on environmental control, structural integrity, and energy efficiency, industry professionals can ensure that their storage facilities provide the best possible conditions for maintaining the quality of stored potatoes. Companies have demonstrated through their projects that with the right expertise and technology, it is possible to create storage solutions that not only meet but exceed industry standards, providing long-term value to potato processors and producers.
As the potato processing industry continues to evolve, the importance of well-designed storage facilities will only grow, making this an area where continued innovation and investment are essential. •



2024 FEATURE PLANNING

1 JANUARY/FEBRUARY
Ad closing 16.01/Publishing 30.01

Key Exhibitors Road Map and Event Agenda

Processes
- Sorting and Grading, Pre-cleaning, Washing, De-stoning
- Energy and Water Saving

Expert View
- Cutting / Slicing / Dicing
- Drying - Innovation in Belt and Drum Dryers

Spotlight
- Raw Product Handling

Markets
- Eastern Europe

Products
- Freshly Packed Potatoes

Ingredients
- Salt

Storage Special
- Potato Monitoring & Quality Assurance
- Sprout Suppressants in Storage

Trade shows: Fruit Logistica 07-09 Feb 2024

2 MARCH/APRIL
Ad closing 20.02/Publishing 05.03

Key Exhibitors Road Map and Event Agenda

Processes
- Cutting Accuracy and Equipment Reliability
- Process Monitoring

Expert View
- PEF Applications and Advantages
- Sustainability in Production

Spotlight
- Smart Production/IoT/Industry 4.0

Markets
- Western Europe

Products
- Extruded Potato Products

Ingredients
- Better for you/Clean Label

Storage Special
- Automated Climate Control
- Sensors and Data Gathering

Trade shows: Anuga FoodTec 19-22 March 2024

3 MAY/JUNE
Ad closing 22.05/Publishing 05.06

Key Exhibitors Road Map and Event Agenda

Processes
- Blanching, Frying
- PEF Systems

Expert View
- Automation - Ensuring a Reliable and Flexible Production Flow
- Optical Sorting - Increasing Yelds, Reducing Waste

Spotlight
- Food Safety

Markets
- North America

Products
- Chips and Potato-based Snacks

Ingredients
- Frying Oils

Storage Special
- Power Saving and Sustainability
- Disease Management

Trade shows: SnackEx 19-20 Jun 2024

4 JULY/AUGUST
Ad closing 17.07/Publishing 28.07

Processes
- Conveying Systems and Belts
- Seasoning & Coating

Expert View
- Drying Technology Advancements
- IQF Freezing for French Fries

Spotlight
- Supply Chain Management & Logistics

Markets
- South America

Products
- Flakes & Mashed Potatoes

Ingredients
- Seasonings for Chips and Fries

Storage Special
- Storage Challenges and Cost-saving Solutions
- Potato Monitoring & Quality Assurance

Trade shows: World Potato Congress, Adelaide 23-26 June 2024

5 SEPTEMBER/OCTOBER
Ad closing 04.09/Publishing 15.09

Key Exhibitors Road Map and Event Agenda

Processes
- Efficient Freezing Technology
- Starch and By-products Processing

Expert View
- Remote Maintenance and Customer Service
- Complete Lines for Processing
- Conveying And Product Transport

Spotlight
- The Road to Sustainability

Markets
- APAC/ANZAC

Products
- French Fries in Retail and Foodservice

Ingredients
- Batters/Coatings

Storage Special
- Storage Design and Construction
- Handling Potatoes to & from Storage

Trade shows: Interpom 24-26 Nov 2024

6 NOVEMBER/DECEMBER
Ad closing 07.11/Publishing 18.11

KEY SUPPLIERS GUIDE

Processes
- Oil Filtration Systems & De-fattening
- Turnkey Projects
- Waste Management / Upscaling

Expert View
- Batch vs. Continuous Frying
- Cutting vs. Hydrocutting
- Pulsed Electric Field (PEF) Processing

Spotlight
- Increasing Production Capacity/Future-proofing Processing Operation

Markets
- Global Market Predictions for 2025

Products
- Potato Seasoning and Flavor Trends

Ingredients
- Stabilizers/Functional additives

Storage Special
- Store Preparation and Hygiene
- Bulk vs. Boxed Storage

Trade shows: Gulfood Manufacturing, Dubai 5 - 7 November 2024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