

Year 8 • N.2 February 2024 DESIGN • KNOW HOW • INNOVATION • VISION DESIGN • KNOW HOW • INNOVATION • VISION Managing director: Angelo Frigerio

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DESIGN • KNOW HOW • INNOVATION • VISION

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markets & data

Bioplastics regain momentum

After a period of stagnation, mainly due to Covid-19, global production has picked up again in 2023. And is set to reach 7.4 million tons in 2028. Driven by increasing demand, along with the emergence of more advanced applications and products. A snapshot by the EUBP.

discover

Microalgae: the aquatic answer to human hunger

By combining a rich nutritional profile with strong sustainability credentials, they might be the natural resource needed to feed the growing global populations. And yet, limited data available and high production costs are among the major obstacles to large scale production.

pages 10-11

focus on

All time-record for **Italian packaging** machinery

The industry closes 2023 with revenues at 9.05 billion euros, 6% up on 2022. With sales driven mainly by exports. As well as soaring orders, with eight months of guaranteed production already in 2024. Current state and future outlook in the preliminary figures by the MECS - Ucima Research Centre.

zoom

F&B packaging: time for open innovation

Italia del Gusto and Eatable Adventures issued a challenge to national and international start-ups. The goal? Designing new sustainable and functional packs for eight renowned Italian companies.

agtech

Planet Farms: "We'll be back, stronger than ever"

ary is not stopping the Milan-based vertical ning start-up. On the contrary: from the new facility in Cirimido (Como) – set to be operational by the end of summer – to the UK market expansion, the growth plan continues.

product preview

CFIA 2024:

"Where agri-food innovation is invented"

The 27th edition of France's n.1 trade show for professionals in the packaging and processing, equipment and ingredients industries is back in Rennes from 12 to 14 March 2024. A preview of the latest cutting-edge solutions that will be presented by Italian exhibitors.



pages 18-20

Italians in Cologne





The 2024 edition of ProSweets welcomed 248 exhibitors from 30 countries and over 13,000 trade professionals. The companies we met during our visit from 28 to 31 January were satisfied with the quality of visitors, yet doubtful about the show's length and layout.

Additives, the 'bad boys'

discover

of food Their reputation precedes

them and influences consumers' perception, often rightly and sometimes not. In recent years, the regulatory framework governing their use has been changing profoundly, in Europe as in the rest of the world. Here are some of the latest developments. pages 14-15









editorial



You don't start a war on a full stomach

by Federica Bartesaghi

Finding enough resources that can feed a growing world population and are also sustainable for the planet – this is the great challenge of our century. It is also the challenge that food-tech specialists, above all, have to face. It is one of the topics we are dealing with in this issue of the magazine: bacteria, microalgae and other nutrient-rich organisms that can reproduce rapidly while consuming little - or, even better, consuming CO2 – are one of the possible solutions that scientists are pursuing. Another option - which has been widely discussed by media and governments around the world – is cultured meat, with all its pros (less pollution and land consumption) and cons (high costs and lack of scientific knowledge). Once again, the only way to transform a fantasy into reality by making these processes scalable and thus environmentally, socially and economically sustainable is through research, combined with technology. The issue is as simple as it is paramount: 750 million people in the world suffer from hunger. According to the World Bank, the number of those living in food insecurity has risen from 135 to 345 million from 2019 to 2022 alone. Natural disasters and epidemics certainly play a role in this scenario. But do you know what the major obstacle in the fight against world hunger is? According to the World Food Programme (WFP) – the world's largest humanitarian organisation –, it is wars. The study shows that 60% of the people who do not have access to adequate food resources live in conflict zones. This is how food, from salvation, turns into a weapon – a weapon that is more dangerous than any other device, because it is "silent but exceptional". It was Russian President Dmitry Medvedev who used these words in April 2022. It is not a

chance that the naval blockade of the Black Sea transit – and thus of Ukrainian grain and cereal exports – was one of the first fronts on which the conflict that is still occurring in Europe took place. "Food security is the most important thing for a nation". Words and music, this time, are Xi Jinping's. They are contained in an article written by him and published last November in the 23rd issue of 'Qiushi', the bimonthly periodical of political theory published by the Central Committee of the Communist Party of China.

"Non-amateur tyrants know that squares empty at the same rate as the stomachs of their subjects", said journalist Matteo Castellucci in a beautiful article – 'The next pitched battle will be over calories' – published by Linkiesta last De-

"Around here, we are only talking about 'food security' once a year, when the FAO report comes out", Castellucci rightly points out. "Hamas' terrorist attack and its consequences have jeopardised the operations of the port of Ashdod, North of the Gaza Strip, an important hub for potassium fertilisers. Drug cartels are craving to take over the avocado market, one of Millennials' fetish and a commodity as blood-stained as African diamonds. The cheap coffee that irrigates capitalism has its years numbered. Other problems intertwine with the food issue, like migration, environmental, and demographical issues. Jovanotti sang about the navel of the world and seized the problem: the stomach is the heart of global power".

According to a popular old saying, "You don't start a revolution on a full stomach".

Apparently, neither a war.

TECH4FOOD

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Con la pancia piena non si fa la... guerra

Trovare risorse in grado di nutrire una rezza alimentare è passato da 135 a 345 del Partito Comunista Cinese."I tiranni popolazione mondiale in continua cre- milioni solo dal 2019 al 2022. Catastrofi non dilettanti sanno quanto le piazze si scita e che siano anche sostenibili per naturali ed epidemie rivestono certa- svuotino allo stesso ritmo degli stomaci il pianeta. È questa la grande sfida del nostro secolo. Ed è la sfida a cui sono sapete qual è il vero grande ostacolo chiamati, prima di tutti, gli specialisti del nella lotta contro la fame nel mondo? food-tech. Ne parliamo anche all'inter- Le guerre. Secondo il Programma alino di questo numero del giornale: bat- mentare mondiale (Pam), la più grande sarà quella per le calorie'. "Da queste teri, microalghe e altri organismi ricchi organizzazione umanitaria del mondo, parti parliamo di 'sicurezza alimentare' di nutrienti e in grado di riprodursi ra- il 60% delle persone che non ha acces- una volta l'anno, quando esce il rappidamente consumando poco, o anco- so ad adeguate risorse alimentari vive porto della Fao", sottolinea a ragion ra meglio, consumando CO2 sono una infatti in zone teatro di conflitti. È così veduta Castellucci. "L'assalto terrorista delle possibili vie che gli scienziati stan- che il cibo da salvezza si trasforma in di Hamas e le sue conseguenze hanno no battendo. Un'altra, già ampiamente arma. Un'arma più pericolosa di qual- compromesso le operazioni del porto discussa da media e governi di tutto il siasi altro ordigno, perché "silenziosa" di Ashdod, a Nord della Striscia di Gaza, mondo, è quella che vede protagonista ma formidabile". A pronunciare que- un hub importante per i fertilizzanti a la carne sintetica, con tutti i pro (vedi il ste parole, nell'aprile del 2022, è stato base di potassio. L'avocado feticcio dei minor inquinamento e il minor consu- il presidente russo Dmitry Medvedev. mo di suolo) e i contro (vedi gli elevati E infatti il blocco del transito navale sul cartelli della droga, merce insanguinata costi e la scarsa conoscenza scientifica) Mar Nero - e quindi delle esportazioni come i diamanti africani. Il caffè a buon del caso. Ancora una volta, a trasforma- Ucraine di grano e cereali - è stato uno mercato che irrora il capitalismo ha gli re un miraggio in realtà rendendo que- dei primi fronti su cui si è consumato anni contati. Sulla questione alimentare sti processi scalabili e quindi sostenibili il conflitto che ancora oggi incendia ne convergono altre, quella migratoria, sia a livello ambientale sia sociale che l'Europa. "La sicurezza alimentare è la ambientale, demografica. Jovanotti economico può essere solo la ricerca, cosa più importante per una nazione". cantava dell'ombelico del mondo e abbinata alla tecnologia. La questione, Parole e musica, questa volta, sono di aveva afferrato il problema: è la pancia d'altronde, è tanto semplice quanto Xi Jinping. Sono contenute in un arti- il cuore del potere globale". fondamentale: nel mondo, 750 milioni colo a sua firma pubblicato lo scorso Dice un vecchio saggio popolare che di persone soffrono la fame. E secondo novembre sul 23esimo numero di 'Qiu- 'Con la pancia piena non si fa la rivolula Banca mondiale, il numero di coloro shi', il periodico bimestrale di teoria zione'.

mente un ruolo in questo scenario. Ma

dei sudditi", afferma il giornalista Matteo Castellucci in un bellissimo articolo pubblicato a dicembre su Linkiesta e intitolato 'La prossima battaglia campale Millennials è oggetto delle brame dei

che vivono in una condizione di insicu- politica edito dal Comitato centrale E neanche la guerra, pare.

TRAVAGLINI IN THE WORLD: WE ARE IN MORE THAN 54 COUNTRIES



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AEB GROUP ANNOUNCES THE ACQUISITION OF EXPERTI

AEB, international group specialized in biotechnologies, natural ingredients, sanitation and filtration systems for the production of wine, beer and other food and beverages, announces the acquisition of ExperTi, an Italian company based in the province of Verona, born from the lease of the Tebaldi business unit, a company operating in the distribution and sale of biotechnologies and cutting-edge plant solutions for the wine industry. The Group aims at consolidating ExperTi's position as a leader company among the oenological panorama by expanding its organization and strengthening its presence on the international market. To manage this new chapter, Elena Guglierame, an executive and part of AEB's management team since 2019, has been appointed as the new CEO.

AEB Group annuncia l'acquisizione di ExperTi

AEB, gruppo internazionale specializzato in biotecnologie, ingredienti naturali e sistemi di sanificazione e filtrazione per la produzione di vino, birra e altri alimenti e bevande, annuncia l'acquisizione di ExperTi, azienda italiana con sede in provincia di Verona, nata dall'affitto del ramo di azienda della Tebaldi, attiva nella distribuzione e commercializzazione di biotecnologie e soluzioni impiantistiche all'avanguardia per il settore enologico. L'obiettivo è consolidare la posizione di ExperTi come azienda e marchio di riferimento nell'enologia, ampliandone l'organizzazione e accelerando il processo di diffusione sul mercato internazionale. La conduzione di ExperTi è ora affidata alla nuova Ad Elena Guglierame, dirigente e parte del management team di AEB dal 2019.

BDT & MSD PARTNERS ACQUIRES 45% STAKE IN ITALY'S IMA

and AEB's CEO SimonPietro Felice

IMA has a new minority shareholder. After the exit of BC Partners from the capital last July, the Bologna-based Group specialized in the design and manufacture of automatic machines for the processing and packaging of pharmaceuticals, cosmetics, food & beverage announced the entrance of BDT & MSD Partners – American merchant bank with ties to billionaire Warren Buffett – with a 45% stake. The Group with a 2.3 billion turnover in 2023 is about to grow further. The goal for the packaging specialist is now overcoming the 5 billion revenues. Looking at the new business structure, IMA's president Alberto Vacchi has confirmed the exit of cousin Gianluca Vacchi from the shareholder.

Ima, finalizzato l'ingresso nel capitale di Bdt & Msd Partners al 45%

Ima ha un nuovo socio di minoranza. Dopo l'uscita dal capitale di Bc Partners, lo scorso luglio, il gruppo bolognese specializzato nella progettazione e produzione di macchine automatiche per il packaging e processing aveva annunciato l'ingresso con una quota del 45% di Bdt & Msd Partners (merchant bank statunitense del miliardario Warren Buffett). Il Gruppo da 2,3 miliardi di fatturato nel 2023 si prepara a crescere ulteriormente. L'obiettivo per lo specialista del packaging, ora, è superare quota 5 miliardi di ricavi. A proposito di nuovi assetti aziendali, il presidente di Ima ha confermato l'uscita di Gianluca Vacchi dall'azionariato.

PARMALAT INTRODUCES FIRST WHITE RPET BOTTLE

Parmalat (Lactalis Group) has introduced the first PET white bottle for UHT milk in Italy. Over the past year, as stated in a note, the brand's R&D team has partnered with Dentis Recycling Italy, a player in the recycling industry, to define a specific process dedicated to white milk bottles to obtain recycled PET to produce new ones. With a content of 50% recycled PET, it will be possible to avoid introducing into the market the equivalent of approximately 150 million new bottles per year and save over 3,000 tons of virgin PET, corresponding to 2,536 cubic meters of virgin plastic. The new bottles will be used for all company brands, including Zymil, with the goal of having 100% recyclable bottles by 2024.

Parmalat presenta la prima bottiglia per latte in plastica bianca R-Pet

Parmalat (Gruppo Lactalis) introduce la prima bottiglia in R-Pt bianco per latte Uht in Italia. Nel corso dell'ultimo anno, si legge in una nota, il team r&d del brand ha collaborato con Dentis Recycling Italy, operatore del mondo del riciclo, per definire un flusso specifico dedicato alle bottiglie bianche per il latte e ottenere Pet riciclato con cui realizzarne di nuove. Con un contenuto pari al 50% di Pet riciclato sarà possibile evitare l'immissione nel mercato l'equivalente di circa 150 milioni di nuove bottiglie all'anno e risparmiare oltre 3mila tonnellate di Pet vergine, corrispondenti a 2.536 metri cubi di plastica vergine. Le nuove bottiglie saranno utilizzate per tutti i marchi aziendali, tra cui Zymil, con l'obiettivo di avere il 100% di bottiglie riciclabili entro il 2024.



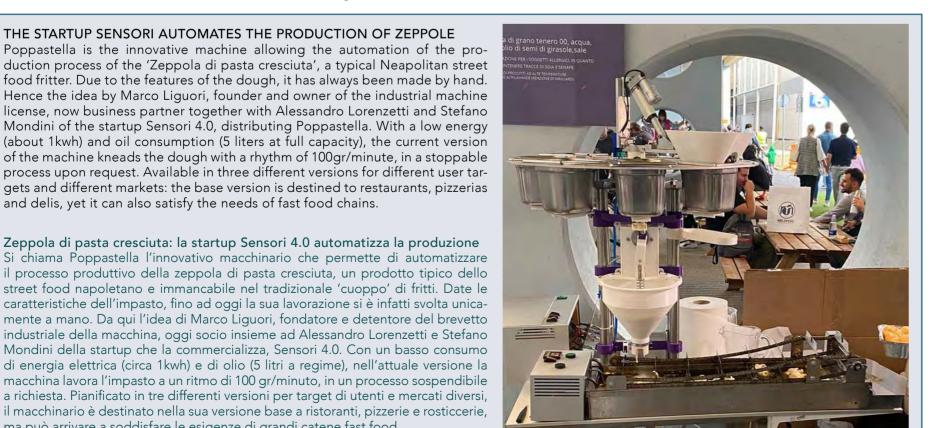
THE STARTUP SENSORI AUTOMATES THE PRODUCTION OF ZEPPOLE

Poppastella is the innovative machine allowing the automation of the production process of the 'Zeppola di pasta cresciuta', a typical Neapolitan street food fritter. Due to the features of the dough, it has always been made by hand. Hence the idea by Marco Liquori, founder and owner of the industrial machine license, now business partner together with Alessandro Lorenzetti and Stefano Mondini of the startup Sensori 4.0, distributing Poppastella. With a low energy (about 1kwh) and oil consumption (5 liters at full capacity), the current version of the machine kneads the dough with a rhythm of 100gr/minute, in a stoppable process upon request. Available in three different versions for different user targets and different markets: the base version is destined to restaurants, pizzerias and delis, yet it can also satisfy the needs of fast food chains.

Zeppola di pasta cresciuta: la startup Sensori 4.0 automatizza la produzione Si chiama Poppastella l'innovativo macchinario che permette di automatizzare il processo produttivo della zeppola di pasta cresciuta, un prodotto tipico dello street food napoletano e immancabile nel tradizionale 'cuoppo' di fritti. Date le caratteristiche dell'impasto, fino ad oggi la sua lavorazione si è infatti svolta unicamente a mano. Da qui l'idea di Marco Liguori, fondatore e detentore del brevetto industriale della macchina, oggi socio insieme ad Alessandro Lorenzetti e Stefano Mondini della startup che la commercializza, Sensori 4.0. Con un basso consumo di energia elettrica (circa 1kwh) e di olio (5 litri a regime), nell'attuale versione la macchina lavora l'impasto a un ritmo di 100 gr/minuto, in un processo sospendibile

ma può arrivare a soddisfare le esigenze di grandi catene fast food.







PIOVANGROUP LAUNCHES A NEW DIVISION IN INDUSTRIAL AND PROCESS COOLING

PiovanGroup, specialist in systems for the automation of production processes for the storage, transport and treatment of polymers, plastic and food powders, has launched a new strategic division in industrial and process cooling, the result of the integration of the business segments operated by the recently acquired Thermal Care and the existing Aquatech. The new division will be headed by Lee Sobocinski, current president of Thermal Care Inc. and will operate under the Thermal Care brand and have global consolidated sales of approximately 100 million

PiovanGroup lancia una nuova divisione per la refrigerazione industriale

Il Gruppo Piovan, specialista nei sistemi per l'automazione dei processi di trasformazione, stoccaggio e trasporto di polimeri e polveri plastiche e alimentari, lancia una nuova divisione strategica nell'ambito della refrigerazione industriale e di processo, frutto dell'integrazione dei segmenti di business operati dalla recentemente acquisita Thermal Care e dall'esistente Aquatech. La nuova divisione sarà quidata da Lee Sobocinski, attuale presidente di Thermal Care Inc., opererà con il marchio Thermal Care e avrà un fatturato consolidato globale di circa 100 milioni di euro.

FRUIT & VEGETABLES: XNEXT AND TURATTI ANNOUNCE NEW PARTNERSHIP

Xnext and Turatti have announced an international commercial partnership agreement at Fruit Logistica in Berlin (7-9 February). Xnext, specialized in hyperspectral X-ray inspection technology with XSpectra, and Turatti, a designer of machines and complete lines for fresh fruit and vegetable preparation, will develop a complete solution combining production and quality control. "A product is born destined to become a standard within fruit and vegetable processing lines," highlights an official release by Xnext, "not only to improve production but also to optimize the entire supply chain process, from the raw material to the finished product, minimizing the risk of waste of resources and risks to the health of customers."

Ortofrutta: presentata la partnership tra Xnext e Turatti

Durante la prima giornata di Fruit Logistica (Berlino, 7-9 febbraio), Xnext ha annunciato di aver stretto un accordo internazionale di partnership commerciale con Turatti Group, specialista nella progettazione e realizzazione di macchine e impianti per la lavorazione di frutta e verdura di quarta e quinta gamma. L'obiettivo della partnership: sviluppare una soluzione completa che unisce produzione e controllo qualità. "Grazie alla partnership", si legge in una nota ufficiale di Xnext, "nasce un prodotto destinato a diventare uno standard all'interno delle linee di lavorazione della frutta e verdura non solo per migliorare la produzione ma anche per ottimizzare l'intero processo della filiera, dalla materia prima al prodotto finito minimizzando il rischio di spreco di risorse e di rischi per la salute dei clienti".



Bioplastics regain momentum

After a period of stagnation, mainly due to Covid-19, global production has picked up again in 2023. And is set to reach 7.4 million tons in 2028. Driven by increasing demand, along with the emergence of more advanced applications and products. A snapshot by the EUBP.

by Lucrezia Villa

and products. Current and future outlook and trends of the industry, on a global Bioplastics, the association representing while Europe will drop to 7.3%. the interests of the bioplastics industry in Europe during the EBC23 conference that took place in Berlin, Germany, last December.

Ongoing growth

to embark on a steady growth from 2023 onwards, reaching approximately 7.43 million tonnes in 2028, as the 2023 report by EUBP shows. "The growth in bioplastics production capacity should be understood in the broader global context of a climate crisis, escalating energy costs, and intermediates, granule producers and didisrupted value chains," stresses Hasso stributors, first transformation operators, von Pogrell, managing director of Europeard and second transformation operators. an Bioplastics. "Despite these challenges, the capacity for bioplastics production is chain has grown significantly over the past on the rise, underscoring the resilience and decade, from just under 370 million euros significance of our industry."

riety of applications, ranging from packaremains above 10%. According to the Plaging and consumer products to electro-stic Consult study, dedicated employees, nics, automotive, and textiles. Packaging that is the resources in companies in the remains still the largest market segment for sector that deal directly with the products bioplastics with 43% (934,000 tonnes) of that enter the compostable plastics supthe total bioplastics market in 2023. The ply chain, have more than doubled: from utilization rate of bioplastics production 1,280 in 2012 to more than 3,000 in 2022 facilities was 82% in 2023, up from 75% with growth of 135% in just over 10 years. in 2022. This figure indicates that the bioplastics industry is operating close to full the highest rate was once again recorded capacity. Looking at different polymers, by disposables (plates, cups, and cutlery) biodegradable polymers account for 52% with +23% over 2021, followed by the difof the total. In first place is polylactic acid ferent types of packaging films (+7% for (PLA) with 31% of capacity, followed by film for non-food applications and +3% PHA and PBAT with 4.8% and 4.6%, refor food packaging film) and agricultural spectively. Among non-biobased biodefilm with +2%.

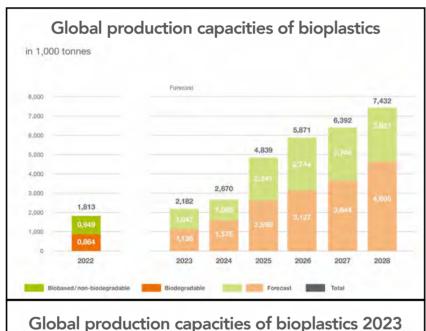
The global bioplastics production gradables, biopolyamides (18.3%), PTT has been taking off after a few years (13.5%) and "green" polyethylene (12.3%) of stagnation. A halt mainly caused by stand out. In terms of application sectors, the spread of the Covid-19 pandemic. packaging remains the main target market Reaching in 2023 around 2.18 million for bioplastics, with 43% of the total. This tonnes (an increase of 29% from the is followed by fibers with 21%, other conprevious year), driven most of all by the sumer goods with 19%, automotive and rising demand combined with the emertransportation with 14%, agriculture and gence of more sophisticated applications horticulture with 8% and electrical/electronics with 6%. Geographically, bioplastics production is gradually shifting to Asia. scale, were highlighted by 2023 Market By 2028, the Asian region is expected to Data Report carried out by European account for 71.5% of global production,

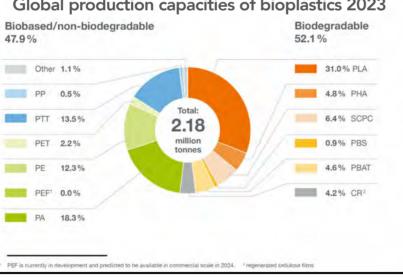
Bioplastics: an Italian excellence

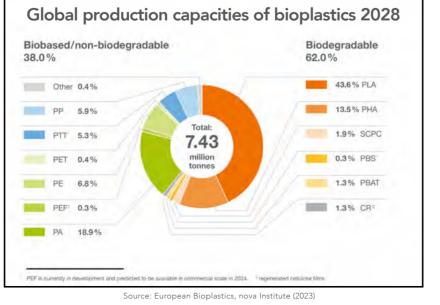
One million euro. That's the overall turnover generated by the biodegradable and compostable plastics industry in 2022 in Italy. As evidenced by the 9th report car-The market's global production is set ried out by Plastic Consult, an independent company that conducts studies and market analysis in the plastics sector. With 3,005 employees, 127,950 tons of compostable manufactured products, the represented companies amounted to 271 - divided into basic chemical producers and

The turnover developed by the supply in 2012 to 1,168 million euros in 2022, Bioplastics are used for an increasing va- with an average annual growth rate that

Among the main application sectors,







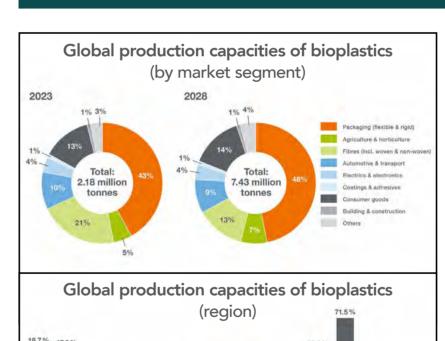
EUBP ACTION PLAN FOR BIOPOLYMER INDUSTRY GROWTH

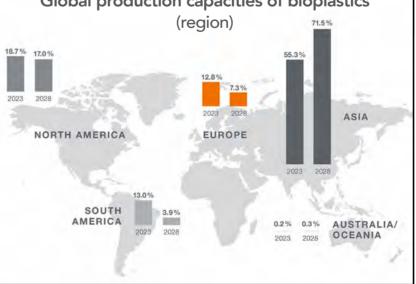
European Bioplastics (EUBP) released its Policy Manifesto calling on the EU to develop a comprehensive Biopolymers Industrial Action Plan to accelerate the growth of the bioplastics industry. "Bioplastics have the potential to play a significant role in reducing the environmental impact of plastics," underlines Hasso von Pogrell, EUBP managing director. "Yet the industry needs a clear and supportive policy framework to reach its full potential." The Manifesto is currently supported by a wide range of stakeholders, including bioplastics producers, converters, and end-users. Moreover, the association European Bioplastics is committed to working with the EU and other stakeholders to develop and implement the action plan, which prioritizes the following six key point:

- **Harmonizing regulations:** there is a lack of integration of bioeconomy concepts and priorities within the existing EU regulatory framework, despite a high-level political support for the bioeconomy. The EU should harmonize regulations to create a fair level playing field for bioplastics;
- Incentivizing access to sustainable biomass: the EU needs to strike a balance between bioenergy and biobased sustainable products;
- Enhancing financial support for technological innovation: scaling up bioplastics manufacturing processes to meet commercial demands can be technically challenging and will require a favourable financial environment for innovation to be able to grow at scale;
- Closing infrastructure gaps and incentivising access to

food waste collection: achieving a circular economy for bioplastics requires robust mechanical, chemical, and organic recycling infrastructure, as well as having access to this infrastructure. The EU should invest more in infrastructures for the collection, sorting, and recycling of food waste, to support the growth of the bioplastics industry;

- Increasing market uptake: market incentives are needed in Europe to keep the return on public and private investment from being harvested elsewhere. The EU should set up a fair level playing field for biobased, biodegradable, and compostable
- Increasing consumer awareness: many consumers remain unaware of the actual environmental benefits of biobased or compostable alternatives. The EU should increase consumer awareness of the benefits of bioplastics to help drive the demand.





Riprende la corsa delle bioplastiche

Dopo un periodo di stasi, principalmente dovuto alla pandemia da Covid-19, la produzione di bioplastiche, su scala globale, è tornata a crescere nel 2023. Stando alle stime dell'associazione European Bioplastics (Eupb), il trend positivo è destinato a continuare, passando dai circa 2,2 milioni di tonnellate nel 2023 agli oltre 7,4 milioni nel 2028. Una crescita trainata soprattutto dall'intensificarsi della domanda e dall'emergere di applicazioni e prodotti più avanzati.



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Microalgae: the aquatic answer to human hunger

By combining a rich nutritional profile with strong sustainability credentials, they might be the natural resource needed to feed the growing global populations. And yet, limited data available and high production costs are among the major obstacles to large scale production.

by Federica Bartesaghi

The search for nutrient-dense foods to feed a growing global population is fueling research on microalgae, not by chance called the 'green gold' of nature, thanks to the high protein and nutrition content. Currently, according to Future Market Insight the global market is valued at 11.8 billion dollars, but projected to reach 25.4 billions by 2033.

Compared to land plants, microalgae can boast rapid growth, ease of cultivation and great environmental benefits. And yet, scaling up production comes with several challenges. Just to name a few: the high water and energy demanded and the related impacts, the management of wastewater and the risk of microbial contamination. Hence, more research is needed to improve the existing technology and more advanced techniques should be developed to increase productivity. Which constitute great challenges for food-tech specialists.

Major production techniques

Microalgae are microscopic unicellular aquatic organisms that can be used as a renewable and sustainable source of alternative proteins. With over 50,000 classified species, microalgae are one of the oldest species on earth, and can thrive in both saltwater and freshwater environments. With regard to production techniques, without aiming to provide an exhaustive overview of how microalgae strains are produced and processed, the most widespread cultivation methods are open ponds and photobioreactors. Open pond cultivation is considered one of the simplest ways to cultivate microalgae in large scale, due to its relatively cheaper construction, maintenance and operation cost; as well as low energy demand. Photobioreactor, adversely, is a bioreactor system used to culture microalgae in an enclosed system which prevents direct exchange of material between the culture and the environment. With respect to open ponds, the size of a bioreactor is more compact and therefore provides more efficient land usage. It also features closed and highly controlled growth condition, which allows to produce contamination free cultures. Such conditions also translate into higher nutrient and metabolic efficiency, which results in higher biomass production per unit of substrate. Microalgae



harvesting is the following production stage, which is also considered the most important and at the same time the most expensive with regard to energy demand and capital cost of the whole process. Numerous harvesting methods have been used to collect biomass. Among them, filtration, centrifugation, flocculation, and flotation.

Most famous species

Microalgae large scale production still faces technical and bureaucratic issues, reason why so far only a limited number of microalgae strains have achieved commercial success. Among these we can include Arthrospira platensis, commercially known as Spirulina, and Chlorella vulgaris, widely used as a dietary supplement or protein-rich food additive; and again Haematococcus pluvialis and

Dunaliella salina, reported for their potent antioxidant activities. The list also includes marine strains of the Nannochloropsis, Tetraselmis and Isochrysis, which are often used as animal feeds. Tetraselmis chuii, for its part, is among the most extensively used microalgae in aquaculture, now commercialized as a human food in the EU. It is also worth mentioning H. pluvialis, a freshwater species well known for its high content of the of the strong antioxidant astaxanthin.

New food applications

Packed with proteins, essential fatty acids, vitamins, iron, calcium, and folic acid, microalgae supplements like Spirulina or Chlorella have been on the market for years. More recent developments have seen the food industry applying whole microalgal biomass or their extracted purified compounds as novel ingredients for the formulation of products like baked goods, pasta, snacks, plant-based milk and meat, condiments and more. Worldwide, between 2015 and 2019 approximately 13,090 new food products were reported to contain algae (which includes both macro and micro-algae) or derived components, according to Mintel Global New Products Database. Including 5,720 items in Europe, in which 436 items were in Spain. One of the great constraints in the use of microalgae within foods has been so far their bitter, grassy or fishy flavor, which impacted the final product's organoleptic profile. Now, food-tech startups are developing techniques to transform microalgae into what has been named a 'ghost protein', that is to say a completely undetectable flavor. One of these companies is the Israeli-based startup Brevel, which has developed a proprietary technology that combines sugar-based fermentation of microalgae with high light concentrations to produce a protein powder that doesn't affect the flavor, color, or taste of food. Brevel has partnered with Vgarden to incorporate the protein into its plant-based cheese for the creation of a protein-packed dairy-free cheese that will hit shelves in 2024. Another Israel-based microalgae specialist is SimpliiGood: in 2023, it unveiled its vegan nuggets made from algae which, it says, can mirror the taste and texture of con-

ventional chicken while providing a better nutritional profile and a smaller environmental footprint. They are indeed composed of 80% pure and minimally processed spirulina microalgae. Another interesting innovation was launched in February this year by the Delaware-based startup Algae Cooking Club: an algae-based cooking oil. "No pesticides, no chemicals, no blending - the process is similar to brewing beer or fermenting wine. Instead of using yeast, we use algae", the company explains on its website.

Global production and challenges

Despite such great potential, the few data available with respect to the safety of microalgae-based food products and ingredients, as well as data related to human allergic reactions, still represent a big limitation to their food applications. The US Food and Drug Administration (FDA) defined microalgal-based products as "other dietary supplements" with the consumption of strains such as Spirulina, Dunaliella, Chlorella, Haematococcus, C. cohnii, P. cruentum and Schizochytrium reported as 'Generally recognized as safe' (GRAS). Other countries like Canada and Australia approved the consumption of limited microalgal strains, including Spirulina and Chlorella. To date, Microalgae production is mainly concentrated in East and Southeast Asia, where seaweed and microalgae are widely consumed as food. The rate

of exploitation of new species is hindered, at least in Europe, also by administrative burdens, namely the need for any novel species to go through the Novel Food regulation before it can be placed on the food market. According to a 2021 factsheet by the EU Commission, in Europe only 10 species of microalgae are currently authorized for food consumption, whose safety has been assessed by the European Food Safety Authority (EFSA). The Commission has mapped 447 algae and Spirulina production units spread between 23 countries across Europe. France, Ireland, and Spain are the top three countries in number of macroalgae production units while Germany, Spain, and Italy stand for the top three for microalgae. Algae and Spirulina biomass is directed primarily for food and food-related applications. Overall, photobioreactors are the most common system used for microalgae production (71%), while open ponds and fermenters represent 19 and 10% of the total production units, respectively. In November 2022, the EU Commission said that the time has come to "fully harness the potential of algae as a renewable resource in Europe". Strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030 stress the need to promote the farming of algae – both macroalgae (seaweed) and microalgae – as a way of contributing to achieving several objectives of the European Green Deal.



Microalghe: il cibo del futuro vien dal mare

Con un profilo nutrizionale eccellente e forti credenziali di sostenibilità, le microalghe possono davvero rappresentare una risposta alla sempre più pressante necessità di nutrire una popolazione mondiale in continua crescita, senza erodere altre risorse ambientali. Esistono già tecnologie in grado di sostenere la produzione su larga scala, che tuttavia presentano ancora grossi limiti sul fronte dei costi, in primis energetici. Ciononostante, interessanti nuove applicazioni, soprattutto nell'ambito dei prodotti plant-based, aprono la strada a futuri sviluppi.



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All time-record for Italian packaging machinery

The industry closes 2023 with revenues at 9.05 billion euros, 6% up on 2022. With sales driven mainly by exports. As well as soaring orders, with eight months of guaranteed production already in 2024. Current state and future outlook in the preliminary figures by the MECS - Ucima Research Centre.

by Lucrezia Villa

a new record high. At the end of 2023 it has indeed passed the 9 billion mark for the first time, reaching total sales revenues of 9.05 billion euros, scoring a the Italian market has been impacted by both the +6% increase over 2022. Such performances are inflationary crisis and uncertainties surrounding Inhighlighted by preliminary figures released by the dustry 4.0." MECS - Ucima (Italian packaging machinery manufacturers' association) Research Centre. If confirmed by the final figures, "it will be the third consecutive record after those recorded in 2021 and 2022," states the association.

Looking at the preliminary figures, the Italian packaging machinery manufacturers' sales are driven mainly by exports, which account for 81.3% of total revenues and are expected to reach 7.36 billion euros by the end of the year, thus recording a +12%increase over 2022. The exports' increase concerns almost all geographical areas. Based on the latest available figures (from January to August), "export sales have increased year on year by 25% in North America, 17% in the European Union, 22% in Asia and 31% in South America. In contrast, domestic sales fell by 14% compared to 2022 to 1.68 billion euros," Ucima highlights. According to the export figures, the Italian packaging industry has maintained its leadership position worldwide. "Italian-made technologies and solutions continue to attract sustained demand from food, beverage, pharmaceutical, tissue and cosmetics companies all over the world, who appreciate the quality, reliability and innovation that we are able to deliver, "states Ucima's chairman Riccardo Cavanna.

A look ahead at 2024

Exports though are not the only driving factor for the industry, which is also looking ahead confidently to 2024, having already secured 8.2 months' worth of orders, thus breaking another record. "In 2023, the issue of component delays has finally been resolved, allowing companies in our sector to focus exclusively on securing and fulfilling orders and in turn enabling them to achieve this new record," states Ucima chairman Riccardo Cavanna. "However, especially in recent months, orders have been

The Italian packaging technology industry has hit falling compared to 2022 and this trend is expected to continue in 2024. The 14% decline in domestic sales is also a cause for concern, demonstrating that

> To this end the industry is demanding for more clarity, as well as a new plan that supports both supply and demand. "In this regard, the RePowerEU initiative's allocation of 6.3 billion euro for the Industry 5.0 plan is a positive development, although we would like to know more about how the funds will be distributed and under which criteria. To date, we have heard nothing about incentives for capital goods to facilitate the ecological transition, and we are awaiting a response from the government." Nevertheless, some of Ucima's companies have already integrated artificial intelligence solutions into their machines. "This is one of the biggest challenges we will face in the coming years," comments Cavanna, "and Ucima is ready to support compa-



nies in identifying the best opportunities for their development and international expansion."

PPWR: Ucima defends the "Italian way"

Apart from the uncertainty mainly caused by the fund allocation for the Industry 5.0 plan, a degree of caution is also required given the constantly changing geopolitical scenarios. On top of this the whole sector in Europe is impatiently awaiting the Trilogue's decision on the Packaging and packaging waste regulation (PPWR). The text adopted on 18 December 2023 by the EU Council allows for many exemptions and the possibility for member states to introduce unilateral sustainability requirements. This risks causing greater fragmentation of the European market with significant consequences on the flow of goods that require clear, consistent, and harmonized EU-level regulations. Moreover, Article 22 regarding restrictions on the use of certain packaging formats and Article 26 regarding reuse and refill objectives "have been heavily revised, going in the opposite direction to the position adopted by the European Parliament in the Plenary on November 22," continues Cavanna. "Ucima has always been at the forefront in defending the Italian way, a model that has established us as a leader in terms of waste recycling. In this delicate phase of interinstitutional negotiation, Ucima, along with allied industry associations, will continue its awareness-raising activities to protect European and national packaging industries, to defend a system that delivers both environmental and economic advantages. We hope that in the Trilogue a perspective based on scientific evidence is adopted rather than on a priori restrictions."

Macchine per packaging ancora da record

Il fatturato complessivo del settore si attesta a 9 miliardi e 50 milioni di euro, in aumento del 6% rispetto al 2022. A trainare la cavalcata, l'export. Ma anche gli ordini, con già otto mesi di produzione garantita nel 2024. I dati preconsuntivi di Mecs - Centro Studi Ucima.

It's time for open innovation

Italia del Gusto and Eatable Adventures issued a challenge to national and international start-ups. The goal? Designing new sustainable and functional packs for eight renowned Italian F&B companies.

Ponti, Rovagnati, Urbani Tartufi, and Valsoia. portunity to establish collaborations with the eight These are the eight F&B Italian companies involved in the new Call4Startup promoted by Italia del Gusto, a private consortium of leading Italian food and wine producers and Eatable Adventures, under the name of open innovation. among the main foodtech accelerators globally. In today's food industry, packaging is at the center of key challenges: hence, to meet the growing needs of industry and consumers, the initiative – open to national and international start-ups – aims at developing new innovative food & beverage packaging that balance the need to ensure environmental sustainability – especially to reduce the use of plastic – and functionality, and that at the same time the recycling of existing packaging, and encourage the pack needs to be effective in preserving food. ecological alternatives. Innovative materials mea-

Amica Chips, Auricchio, PanPiuma, Parmalat, Ultimately, the start-ups selected will have the opcompanies, putting their solutions to the test in real-world scenarios, and enlist the support of industry experts to refine and validate their projects

Three strategic areas

The packaging proposals submitted by the startups will focus on three crucial strategic areas for the food & beverage industry, that is sustainability, cost reduction, and innovative materials. More in detail, recycle & reuse: next-generation solutions and alternative materials to decrease plastic usage, promote

ning cutting-edge proposals to extend the shelf life of products, enhance functional and organoleptic characteristics, and promote consumption convenience. And ultimately efficient processes, that is advanced solutions aimed at redefining packaging in the food industry by reducing costs, optimizing processes, and improving product traceability.

Packaging per il f&b: è tempo di open innovation

Italia del Gusto e Eatable Adventures lanciano una sfida alle startup nazionali e internazionali. L'obiettivo? Realizzare nuovi packaging innovativi, funzionali e sostenibili per otto aziende italiane, che soddisfino le attuali esigenze del settore



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Additives, the bad boys' of food

by Federica Bartesaghi

They form the basis of most of the processed foods we know, as they ensure shelf life and safety, preserve quality and organoleptic properties, and much more. At the same time, some can undergo chemical changes that transform them into nitrosamines, potentially carcinogenic molecules according to the International Agency for Research on Cancer (IARC).

We are talking about additives, a word that over the past years has taken on a very negative connotation in consumers' common beliefs. Often rightly - since scientific research is highlighting new potential risk for human health -, and often wrongly, due to targeted defamatory campaigns. Meanwhile, the regulatory framework governing their use is changing considerably around the world.

How an additive is born

In late 2023, the World Health Organization (WHO), which together with the Food and Agriculture Organization (FAO) is responsible for making health risk assessments of food additives, published a new factsheet. FAO/ WHO assessments are conducted by an independent and international expert scientific group: the Joint Expert Committee on Food Additives (JECFA).

JECFA evaluations are based on scientific reviews of all available biochemical, toxicological, and other relevant data. The toxicological tests include acute, short-term and long-term studies that determine how the food additive is absorbed, distributed and excreted, and possible harmful effects at certain exposure levels. The starting point for determining whether a food additive can be used without having harmful effects is indeed to establish the 'acceptable daily intake' (ADI), that is to say an estimate of the amount of an additive in food or drinking water that can be safely consumed daily over a lifetime without adverse health effects.

The safety assessments completed by JECFA are used by the joint intergovernmental food standard-setting body of FAO and WHO, the Codex Alimentarius Commission, to establish levels for maximum use of additives in food and drinks.

How additives are classified

Food additives, explains the WHO, can be derived from plants, animals or minerals, or they can be chemically synthesized. There are several thousand food additives, but they can be basically grouped into 3 broad categories based on their function. The first is that of 'flavoring agents', defined as chemicals that impart flavors or fragrances and are added to food to modify its aroma or taste. Flavoring agents can be extracted from naturally occurring sources (e.g. plant or animal sources) or chemically synthesized.

The second group is that of 'enzyme preparations': a type of additive that may or may not end up in the final food product. Enzymes are naturally occurring proteins that boost biochemical reactions by breaking down larger molecules into their smaller building blocks. They can be obtained by extraction from plants or animal products or from micro-organisms such as bacteria. They are used, for instance, in baking (to improve the dough), in wine making and brewing (to improve fermentation), and in cheese manufacturing (to improve curd formation). The third broad category includes all 'other additives' that are used for a variety of reasons, including preservation, coloring and sweetening.

to revoke the regulation that authorizes the use of brominated vegetable oil (BVO) in food. BVO was first used as a food additive in the 1920s and today it is used in some sports drinks and sodas to keep citrusy flavors from separating. The ingredient is already banned from drinks in Europe and Japan, while California recently approved a ban that will go into effect in 2027. The US agency also announced its intent to review three other possibly toxic. FDA-regulated food additives that were recently banned by California: red dye 3, propylparaben, and potassium bromate.

The comeback of monosodium glutamate (MSG)

gnized as safe' ingredient, Monosodium glutamate, or MSG, is one of the most debated food additives. In the second half of the 20th century, it gained a reputation for causing a wide range of symptoms - including headaches, nausea and heart palpitations - after the publication of what have been defined "questionable studies". MSG is sodium salt of glutamic acid discovered by Japanese chemist Kikunae Ikeda in 1907, and able to give certain foods a long-lasting savory flavor: the now world-famous 'umami' taste. The European Food Safety Authority (EFSA) recommends a daily intake of less than 30 milligrams per day per kilogram of body weight. A recent article published by CNN

Additivi, i 'cattivi ragazzi' del food

Sono alla base della maggior parte degli alimenti processati che consumiamo, in quanto ne garantiscono la conservabilità e la sicurezza, ne preservano la qualità e le proprietà organolettiche, e anche molto di più. Parliamo degli additivi, parola che nel corso degli ultimi anni ha assunto una connotazione spesso negativa nell'immaginario comune. A volte a ragione, altre a torto. La realtà, è che in pochi sanno davvero cosa siano e a cosa servano. Nel frattempo, il quadro normativo che regola il loro uso sta cambiando profondamente. Ecco alcuni dei più recenti sviluppi.

Their reputation precedes them and influences consumers' perception, often rightly and sometimes not. In recent years, the regulatory framework governing their use has been changing profoundly, in Europe as in the rest of the world. Here are some of the latest developments.

UP-TO-DATE

WHO recommendations on non-sugar sweeteners

In May 2023, WHO released a new guideline on non-sugar sweeteners (NSS) suggesting that use of NSS does not confer any long-term benefit in reducing body fat; and that there may be potential undesirable effects from long-term use of NSS, such as an increased risk of type 2 diabetes, cardiovascular diseases, and mortality. Common NSS include acesulfame K, aspartame, advantame, cyclamates, neotame, saccharin, sucralose, stevia and stevia derivatives. Further assessments of the health impacts of aspartame were released in July 2023 by WHO, FAO and IARC, the International Agency for Research on Cancer, which classified aspartame as "possibly carcinogenic to humans (Group 2B)", but "on the basis of limited evidence for cancer in humans" Consequently, for JECFA there were no sufficient reasons to change the previously established acceptable daily intake of 0-40 mg/kg body weight for aspartame.

New restrictions for nitrites and nitrates across Europe

In October 2023, the EU Commission set new limits for the use of nitrites and nitrates as food additives. The tighter levels aim to protect against pathogenic bacteria such as Listeria, Salmonella, and Clostridium botulinum, while reducing the exposure to nitrosamines, some of which are carcinogenic. Potassium nitrite (E 249), sodium nitrite (E 250), sodium nitrate (E 251) and potassium nitrate (E 252) have been used for decades to secure the preservation and microbiological safety of foods - in particular meat, fish and cheese - and to contribute to their organoleptic properties. However, the Commission says, "it is also recognized that the presence of nitrites and nitrates in foods can give rise to the formation of nitrosamines". Manufacturers have two years to adapt to the new rules, that demand a nearly 20% reduction in their use.

Brominated vegetable oil (BVO) under the spotlight in the US

Due to health concerns the US Food and Drug Administration (FDA) has proposed

Despite the US Food and Drug Administration (FDA) classified it as a 'generally recocalls MSG "the most misunderstood ingredient of the century".

Ethylene oxide: UK wants to match EU regulations

In February 2024, the UK Food Standards Agency (FSA) has proposed a limit for ethylene oxide in food additives and is calling for stakeholder feedback through a public consultation. Ethylene oxide is a chemical substance used in various applications, such as sterilization and as a raw material in some manufacturing processes. Recently, incidents involving ethylene oxide and its byproduct 2-chloro-ethanol have emerged across the UK and Europe. Notably, in September 2020, ethylene oxide was found in sesame seeds originating from India, purportedly used to mitigate Salmonella contamination. The substance was discovered in other raw materials such as spices, calcium carbonate and more. In 2022, the EU set a 0.1 mg/kg limit for ethylene oxide in all food additives. Now, the UK seems ready to align.

Genotoxic substances detected in smoke flavorings by EFSA

The European Food Safety Authority (EFSA) has carried out a new safety assessment on eight primary products for the production of smoke flavorings, since manufacturers applied for a 10-year extension of the authorization, which expired on 1st January 2024. EFSA's new safety assessment detected genotoxic substances in six of these primary products; the other two are suspected of having genotoxic effects. According to EFSA all of the eight primary products assessed can no longer be considered harmless to health. Representatives of the EU Commission and EU Member States will now decide whether or under what conditions the authorizations for the eight primary products for the production of smoke flavorings can be extended.



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The rise of Mexico's packaging industry

by Federica Bartesaghi

In 2022, the demand for packaging machinery and materials in Mexico reached record highs: +25%, for a total value of 906 million dollars, compared to 710 million in 2021. Several factors contributed to this surge, including the tremendous growth experienced by e-commerce after the pan-vice centers in Mexico," it reads. "Moreover, European and Asian compademic (+23% in 2022) and the double digit increase in retail sales (+18%). Both the national industry and the import market are growing – or rather, and gain market share in this sector." It continues: "Mexican small and returning to growth after three years of near stagnation – where Italy is the medium-sized companies tend to perceive U.S.-made equipment as desileading supplier globally.

A flourishing local industry

than 3% yearly and 132 million consumers - half are under 28 years old - increasing to over 360 million in the NAFTA area. Thanks to the new free trade agreement signed with the United States and Canada (USMCA), Mexico has thus become the preferred gateway to all of North America, in addition to being the country with the highest number of free trade agreements in the world: 13 with 53 nations.

Post-pandemic Mexico is therefore experiencing strong industrial growth, also due to the intensification of nearshoring from the U.S., that is to say the relocation of some production activities to a neighboring country, namely

Returning to the packaging industry, according to data released by the Mexican Packaging Association (AMEE), national production of packaging machinery and materials experienced a 3.4% growth in 2022 - followed by the +4% recorded last year - for a production value that reached 21.28 billion dollars in 2022, equivalent to 1.4% of the country's Gross Domestic Product and 9% of the national manufacturing GDP. An industry that employs about 98,000 people and sees its most strategic hub in the western region, where the metropolis of Guadalajara is located thanks, as anticipated, also to the growing presence of big players in the food and beverage industry. It is no surprise, therefore, that Guadalajara hosts one of the most important sector's trade shows, Expo Pack, capable of attracting visitors and exhibitors from all over the world. The next edition is scheduled for June 2025.

Italy tops the supplier ranking

According to data reported by the American Association for Packaging and Processing Technologies (PMMI), the total value of Mexican imports of packaging machines and equipment reached 570 million dollars in 2022. A value that has grown compared to the previous three years, but still lower than the pre-pandemic figure: in 2018 it was 662 million.

Italy, as highlighted in an report published in 2023 by the Italian Trade Agency, is the country's n.1 supplier, with a market share of 28.41%, equivalent to 160 million euros, up by 4% compared to 2021. Germany follows with a market share of 27.15%, at 150 million. Other major countries of origin include the United States (99.4 million), China and Japan, with a market share of 7.4% and 5.3% respectively.

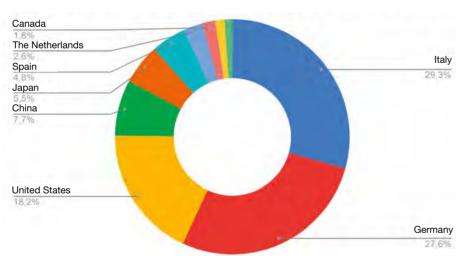
Particularly interesting is the analysis conducted by the International Trade Administration U.S. Department of Commerce on the potential of the

Messico, nuvole e... packaging

Cresce nel Paese la domanda di macchine e materiali di confezionamento, per soddisfare l'esigenza di un'industria fiorente e di un significativo incremento delle vendite al dettaglio. L'Italia è oggi il primo fornitore. Alcuni dati per comprendere il mercato e le sue future evo-

Mexican market for American packaging machinery producers, especially regarding European competition: "Mexican companies regularly choose European solutions due to stronger after-sales service from European sernies are increasingly offering customization and payment terms to compete gned only for large-scale production. Additionally, many believe that U.S. companies have rigid sales policies which do not allow for customization. Finally, Mexican buyers believe that U.S. industrial equipment generally has Mexico is a politically stable country, with an economy growing by more higher than average energy consumption. These perceptions create specific hurdles for sellers of U.S. equipment."

Mexican imports of packaging machinery



Source: Italian Trade Agency

Partner country	January-December (value, euro)			Market share %			Var. 2021/2022
	2020	2021	2022	2020	2021	2022	
World	501.674.471	483.731.213	563.824.631	100	100	100	80.093.418
Italy	104.807.433	116.462.639	160.160.260	21.29	24.00	28.41	43.697.622
Germany	153.050.511	120.596.829	150.830.606	30.51	25.33	27.15	30.233.777
U.S.A	74.221.229	70.931.997	99.445.012	14.8	15.06	18.04	28.513.015
China	21.922.056	28.391.729	42.140.413	4.37	6.27	7.47	13.748.683
Japan	25.241.761	12.855.595	30.158.764	5.03	3.06	5.35	17.303.169
Spain	28.742.045	29.279.687	26.436.908	6.13	6.05	5.09	-2.842.779
Netherlands	8.717.661	10.076.948	14.451.201	2.14	2.08	2.56	4.374.253
Canada	7.389.536	5.834.778	9.651.448	1.47	1.21	2.11	3.816.670
Switzerland	15.316.800	10.016.522	6.956.249	3.05	2.07	1.23	-3.060.273
U.K.	6.410.241	10.127.498	5.885.975	1.28	2.09	1.04	-4.241.523

Source: Italian Trade Agency on Trade Data Monitor, June 2023

There is a growing demand in the country for machinery and materials to keep up with a booming industry and a big jump in retail sales. In the global ranking, Italy is the leading supplier. A market snapshot to investigate current and future requirements.

A fast-changing market demand

According to the American International Trade Administration, the food and beverage industry accounts for 50% of total Mexican packaging machinery imports by value. This is followed by machinery for use in personal care (15%), house products and appliances (15%), pharmaceuticals (10%), and general packaging industries (10%). Today, 63% of food products packed in Mexico use flexible packaging, which is recording growth rates of over 10% per year. The 'plastic pouch' format is also doing well, already widely exploited in the personal care sector and now expanding towards the food sector. Demand for metal can packaging as an alternative to glass is also spreading. Although the sustainability topic was temporarily sidelined by the hygiene and safety needs imposed by the pandemic, it now seems to be at the center of the development strategy of local food companies. The recycling and recovery industry for packaging materials is expanding too: consider that Mexico is home to the world's largest food-grade PET recycling plant belonging to PetStart (Coca Cola group).





CFIA 2024:

"Where agri-food innovation is invented"

The 27th edition of France's n.1 trade show for professionals in the packaging and processing, equipment and ingredients industries is back in Rennes from 12 to 14 March 2024. With an increased offer: 1,700 exhibitors showcasing around 400 new solutions. Divided into the following sectors: ingredients & PAI, equipment & processes and packaging.

A new 300-sqm space is dedicated to innovative start-ups. Among the main topics explored: the challenges of the IAA, including innovative ingredients and food products of tomorrow, eco-design of packaging and industrial performance and new levers for a more sober but efficient plant.

Hereafter is a preview of the latest cutting-edge solutions that will be presented by Italian exhibitors.

CFIA 2024: "Qui si fa l'innovazione del settore agroalimentare"

La 27esima edizione della fiera francese n.1 per i professionisti dell'industria del packaging e processing, delle attrezzature e degli ingredienti torna a Rennes dal 12 al 14 marzo 2024. Con un'offerta più ampia: 1.700 espositori che presentano circa 400 nuove soluzioni. Suddivisi nei sequenti settori: ingredienti, attrezzature & processing e packaging. Una nuova area di 300 mq è dedicata alle start-up innovative. Tra i principali temi esplorati: le sfide degli IAA, tra cui l'innovazione degli ingredienti e dei prodotti alimentari di domani, l'eco-design degli imballaggi e delle performance industriali e le nuove leve per un impianto più snello ed efficiente. Di seguito un'anteprima delle ultime soluzioni all'avanguardia che saranno presentate dagli espositori italiani in fiera.

CEPI www.cepisilos.com

BLENDER

Fields of application

Premix for all food markets (bakery & biscuits, confectionery, pasta & cereals, baby food & functional food, pet food, beverages).

Description and strong points The 3 in 1 receives, weighs and blends in single unit. The vertical blender inside ensures the highest flexibility. It is fast, accurate and clean, delivering a homogeneous mix of powders even for quantities lower than 1% in the span of 3-5 minutes. It can dose in the mixer in a single solution or by loss of weight in small batches. The blender is fully automated and optimizes mixing and production times. The 3 in 1 can be used in place of the dosing hopper, and its speed makes it very suitable for continuous mixing systems. In installations with multiple lines, it can be combined with hoppers to achieve the highest flexibility in production.

Technical specifications

- Weighs the ingredient, separates air from product during pneumatic transport and blends
- Fast and accurate
- Hygienic design and easy to clean
- Delivers a homogeneous mix of powders even for quantities lower than 1% in 3-5 minutes
- Optimizes mixing and production times Fully automated and traceable
- Stainless steel
- ATEX conform



ZILLI & BELLINI www.zilli-bellini.com

MONOBLOCKS ULTRACLEEN WITH AUTOMATIC CLEANING

Fields of application

Description and strong points

The company offers solutions to clean, to fill and to close glass, plastic, tin plate or aluminum containers. The monoblock is an integrated system to make all the phases in a controlled environment. A system of high efficiency filters introduce sterile

After the filling phase the containers are moved inside a synchronized monoblock without any spillage of product before and during the closing phase. The operator is controlling the process through an interactive touch screen panel. Zilli & Bellini designed a system for the automatic cleaning of the monoblock where the operator is never involved even for the cleaning of critical parts like valves and pistons.



HALL: 7

GRANDI www.grandi.it

WRAP-AROUND CARTONING MACHINE MOD. FC/WA

Fields of application

Food, coffee and candies

Description and strong points

The machine works with flat cartons which are picked up and deposited inside the buckets of a cardboard transport chain. Almost at the end of its run, the blank meets the teeth of the transport chain, and the cardboard is U-shaped. At the same time the products are brought to the batch forming area. The packets are taken from the feeding belt conveyed to the area where a grouping system provide to create the batch. Once it is complete, the batch is introduced in the "U" shaped cardboard. Thenthe lines of glue are applied and the vertical flaps are closed. During the following advances and stops, the upper flap that constitutes the cover is glued and folded. The closed box is then taken out of the machine.

Technical specifications

Box sizes: min 110x200xh150, max 280x400xh235.



GB BERNUCCI www.gbbernucci.com

PAPER2SKIN

Fields of application

Sliced products.

Paper2Skin represents a paradigm shift, an eco-sustainable and practical solution. It combines paper with a thin plastic film, creating a unique film for top skin application on low profile products. The main advantages include reduction of material complexity, simplification of the packaging process, and increased production efficiency. Paper2Skin reduces not only the total packaging but also its weight leading to environmental benefits such as the reduction of carbon emissions.

- Paper2Skin's strengths include: • Full printing possibilities to enhance branding and communication;
- Easy opening;
- Easy slice separation and no customer frustration; Shaped Window for Product Visibility;
- Less complex packaging operations, increasing productivity and efficiency;
- Disposable into paper collection c/pap 81

Technical specifications

Made of a laminated cardboard base with a food liner and coated with a combined paper and thin plastic film.



HALL: 6



XNEXT FRANCE www.x-next.com

XSPECTRA

Fields of application

Food safety, quality controls, food foreign bodies detection.

Description and strong points

XSpectra is the world's most advanced food inspection technology, which can improve food safety by detecting all types of high- and low-density foreign bodies such as plastics, bone, cartilage, insects, wood, and rubber that are currently undetectable by inspection systems widely used in the food industry. XSpectra is able to detect such contamination directly on the production line, in a few milliseconds it is able to perform a hyperspectral analysis of the product in real time by comparing the energy absorbed by any contaminants and thus decreeing the compliance or not with the required quality standards. XSpectra distinguishes itself from traditional inspection systems thanks to the synergy of three technological innovations: photonics, nuclear electronics and Artificial Intelligence. Xnext was the first in the world to harness the power of Deep Learning in the field of X-ray food inspections.



ILPRA www.ilpra.com

FOODPACK 1485

Fields of application

Ideal for a variety of packaging applications such as fruit, meat, ready meals, fish etc.

Description and strong points

FoodPack 1485 is a fully automatic in-line traysealer, equipped with a large sealing area and designed to be easily integrated into a production line. The mould output and fast cycle time make this packaging machine an effective solution for large production runs. The design of the machine allows it to be configured to process a variety of packaging applications such as fruit, meat, ready meals, fish and more. With this machine, you can achieve the "skin" packaging application, essential to give a product a unique appearance and ideal to ensure its shelf life. Skin packaging allows the consumer to fully examine the quality of the product, while ensuring sustainability allowing a lower consumption of plastic material Technical specifications

- CPS technology
- Anti-crush system • Film pre-heating system for Skin
- Easy belt disassembly

HALL: 10 BOOTH: F29

HALL: 10 BOOTH: F28

HALL: 10

BOOTH: E47

IMA ILAPAK VEGATRONIC 2000 ML and IMA RECORD PANDA BS RS

The IMA Group's divisions and companies - Ilapak, Record, Eurosicma and Erca - dedicated to the development of processing, filling and packaging technologies for the food industry will exhibit at the 2024 edition of CFIA. IMA Erca experts will also unveil the packaging technologies for pasty and liquid products filled into thermoformed or pre-formed cups.

Description and strong points

IMA ILAPAK VEGRATRONIC 2000 ML intermittent vertical bagger (VFFS) is ideal for produce, cheese, IQF. It boasts high flexibility in terms of pack formats with an Open Frame structure that guarantees unique accessibility for cleaning and maintenance. Capable of switching between heat sealing films and LPDE and between pillow packs and stand-up pouches with easy and tool-free changeovers, the Vegatronic 2000 ML intermittent motion vertical form, fill and seal machine is aimed at producers seeking a high level of flexibility.

IMA RECORD Panda BS RS flow wrapping machine (HFFS) is ideal for bakery, biscuits, choco & confectionery, cheese, produce, meat & poultry, pet food. The Panda flow wrapping machine in the Bottom Seal version is ideal to pack a wide range of regular small and medium size products, easy to carry. The Panda BS RS can reach the speed of 300 packs per minute. The rotating sealing jaws (single or double) is applied for high-speed packaging with simple



lma Ilapak Vegatronic 2000 ML

NIEDERWIESER www.niederwiesergroup.com

NEXTFLEX

Fields of application

Sustainable and recyclable thermoforming and lidding films and vacuum pouches. **Description and strong points**

NextFlex is the basic ingredient in the company's green innovation. Combining 11-layer coextrusion technology with a formulation based on Mono Polyolefin (MPO) made of polyethylene and polypropylene and a minor amount of EVOH, these recyclable thermoformable coextruded films contribute to sustainability and meet the requirements of the regulations in terms of packaging. The maximum level of flexibility, high barrier capacity and over 10%

of saving due to the reduction in thickness. Technical specifications

11-layer coextrusion technology available in various thickness from 60 to 270µ, for vacuum and MAP applications, high barrier properties, pasteurizable (100°/2h), recyclable, printable.



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product preview



AGRIFLEX www.agriflex.it

AGRIFLEX MICROINGREDIENTS

Fields of application

Complete system for weighing, dosing and storing ingredients for food production. **Description and strong points**

Micro ingredient units are designed for storing and dosing (by weight) small and

medium quantities of micro ingredients which are added to the main ingredients of the recipe. The micro-dosing station is ideal for biscuit, bread and pastry-making industries

and food products in general, and designed to provide a fully reliable and safe food production process. Accurate weighing ensures recipe standardisation, whereas

Technical specifications

- Perfect dosing and reduced waste: very accurate dosing during recipe execution; raw material waste and production of noncompliant
- Technological integration;
- Process automation: the high automation level guarantees fast dosing, lower management costs, accurate traceability and fewer human errors;
- Customised discharge outlets and moving organs
- Easy inspection and cleaning: the portholes can be easily removed to clean the tanks internally; the screw feeder can be disassembled through quick fastening systems that make it possible to pull out the endless screw; the moving organs like endless screws are machined from solid, ensuring low sliding tolerance and no sediments.



RISCO www.risco.it

RS 280 STAND-ALONE OR IN-LINE CUTTING MACHINE

Sausages filled in natural and artificial casing, cooked sausages.

Description and strong points

The RS 280 is the compact and flexible sausage cutting machine from Risco. The unit can be connected in-line and synchronized with Risco's new generation linking systems, or it can work independently when processing small batches or cooked sausages. The two specially designed infeed belts grip the chain of sausages firmly but gently to feed them deep into the machine. Industrial-grade sensors detect the sausage links as they pass through the conveyor belts, which guide the product to the separation point. A three-bladed, hardened stainless steel rotary knife cuts the links with a single, quick stroke, without hesitation and in a fraction of a second. The endless sausage chain is then neatly cut into individual pieces or groups by the RS 280 cutting machine in the blink of an eye, ready for the packaging stage of the process.

Technical specifications

- Production speed: up to 1200 cuts/minute (depending on sausage length, casing type and caliber)
- Casing caliber: 16-42 mm
- Portion length: from 45 mm and up Minimized maintenance costs
- Decreased need of labor-force
- Programmable cutting (individual or multiple)





PLASTIC GRIDS Fields of application

Description and strong points

The IFT plastic grid is the ideal solution for the different cheese processing phases - and more. Thanks to its specific characteristics of versatility and aeration, in fact, it lends itself perfectly to being used in phases such as salting, drying and seasoning within food industries of any size. Furthermore, the seasoning grill is perfect for processing meat. It offers remarkable ventilation for minor revolutions and minor mold formation, as well as convenient maneuverability inside the seasoning cells-warehouses thanks to a Europalletizable size.

Technical specifications

- Material: polypropylene for food (pp);
- Dimension: mm 760x580x 210 o 180 o 150 o 130h;
- Production method: injection stamp;
- Temperature resistance: -18, +60 °c IFT can also realize a model with resistance -40 a +110 °c;
- Suitability for food contact: all food-grade polypropylene items are made with certified raw materials and are suitable for contact with foodstuffs, in compliance with CE regulations and directives;
- Weight: kg 3,2.



COMEK MULTIHEAD WEIGHER MOD. CK16ST

Diary, convenience food, fresh vegetables, frozen foods, snack, confectionery.

Description and strong points

Thanks to 30 years of experience in the design and construction of automatic weighing systems, Comek manufactures a wide range of Multihead weighers completely made in Italy. They can be integrated with VFFS, thermoforming or tray-sealers machines. Technical specifications

- Decentralized electronic control by CANopen fieldbus. Weight signal filtering through the DSP of peripheral devices management. Integrated compensation of tare weight offset. Acquisition of the load cell temperature for the compensation of the read value. USB port to upload/download data and statistics. Remote control system granting tele-assistance and monitoring services;
- Open frame and curved surfaces for a complete accessibility and easy cleaning. Easy and quick disassembling of all the components coming into
- Weighing modules made of anodized aluminium or stainless steel AISI 304;
- From 8 to 24 heads, weighing range from 5 to 10000 grams;
- Buckets opening by stepper motors and without springs;
- Buckets with variable width from 80 mm to 210 mm and a capacity from 1 to 9 litres;
- Dp Version Parking buckets to increase speed and accuracy;
- Mix Version Possibility to obtain a mix up to 4 products with 4 different weights;

New Feature "PWM" - The latest generation of "vibration control".



HALL: 10

BOOTH: F3













RENNES 12-13-14 MARS **NOUS VOUS ATTENDONS AU STAND**

n° 9-D42



gallery

Planet Farms: 66We'll be back, stronger than ever⁹⁹

The fire outbreak at the Cavenago plant last January is not stopping the Milan-based vertical farming start-up. On the contrary: from the new facility in Cirimido (Como) – set to be operational by the end of summer – to the UK market expansion, the growth plan continues.

by Lucrezia Villa

growth. Despite rapid response from the firefighters, its doors back in October 2021, based on an idea to Planet Farms' entry into the UK market, where nearby the city, that did not need fertile soil in order chains. With the ultimate goal of paving the way for to grow fresh and healthy produce. Before resuming the construction of a new facility in north London, production, the Agtech will wait for the brand-new which is expected to be operational in the second vertical farm in Cirimido (Como) to be completed.

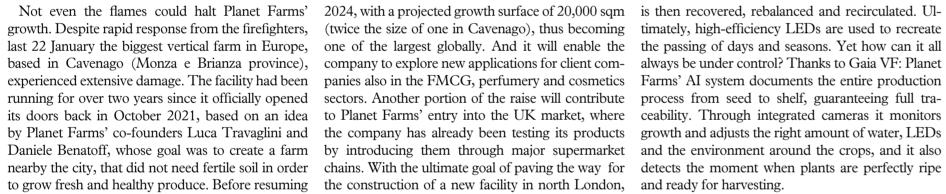
"Yet we confirm our mission toward innovation and sustainability, which we will continue to pursue with unchanged courage and commitment," says Luca Travaglini. "We will come back stronger than before."

Further expansion in Italy and UK

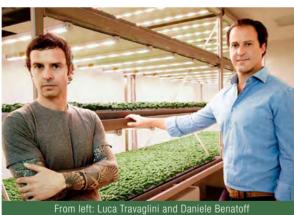
Many are indeed the projects in the pipeline. Last November, Planet Farms had received a new capital grants), valuing the company in excess of 500 million dollars. Part of the funds will be used to comple-

Growing up: AI's key role

The right balance between technology and nature. The company has designed and developed a hitech controlled environment which enables to grow many varieties of vegetables and salads through indoor vertical farming, enabling to use 95% less water and 93% less soil, compared to conventional farming. All products are pesticide-free and available all-yeinjection of 40 million dollars. With this transaction, ar-round. Each variety is grown in its own separate the total capital raised by the vertical farming start- environment, which is best suited to its needs. The up will exceed 140 million dollars (equity, debt, and air filtering and distribution system ensures an ideal environment for the plants, making sure it is always the perfect season. The crops, furthermore, only rete the construction of the facility in Cirimido, which ceive the exact amount of mineral-enriched water is planned to be operational by the end of summer necessary for their well-being. The excess of water



"Like a skilled orchestra director, GAIA VF directs the entire production process," explains the





Cavenago lo scorso gennaio non ferma la startup milanese di agricoltura verticale. Al contrario: dal nuovo stabilimento di Cirimido (Como) - che sarà operativo entro la fine dell'estate all'espansione sul mercato britannico, il piano di crescita di Planet Farms continua.

Planet Farms: "Ritorneremo, più forti di prima"

L'incendio divampato nello stabilimento di

Italians in Cologne

The 2024 edition of ProSweets welcomed 248 exhibitors from 30 countries and over 13,000 trade professionals. The Italian companies we met during our visit from 28 to 31 January were satisfied with the quality of visitors, yet doubtful about the show's length and layout.

by Alice Nicoli and Alessandro Rigamonti

tisfied with the quality and number of visitors edition of ProSweets Cologne is now schedu-

From 28 to 31 January, as always in conjunthe ever closer interlinking of the two trade fairs ction with ISM, ProSweets – the international which led to a higher number of machine sasuppliers of the sweets and snacks industry – les. Whereas on the other hand, many were the welcomed 248 exhibitors from 30 countries Italian exhibitors that shared perplexities about around 90 countries were recorded over the days instead of four – and about the layout, four days of the exhibition. Among the highest considered to be too confusing, with numerous numbers of attendees and exhibitors, Italians vacant areas in the exhibition district standing stood out. Above all, the companies were sa- out, as well as the lack of the carpet. The next they met at the German exhibition, as well as led to take place from 2 to 5 February 2025.

Innovazioni made in Italy a Colonia

Dal 28 al 31 gennaio, si è svolta l'edizione 2024 di ProSweets, la kermesse dedicata alle subforniture per il comparto sweet. Come sempre, in scena in contemporanea con Ism. Sono stati 248 gli espositori da 30 Paesi e oltre 13mila i visitatori professionali. Le aziende italiane incontrate in fiera si sono dette soddisfatte per la qualità dei contatti acquisiti. Ma perplesse per durata e layout della manifesta-

























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The winning couple





Tecno Brianza from 1981 offers products made by persons and partners that with passion and dedication collaborate to guarantee product's quality and his continuous evolution to satisfy your needs. Productive process supervision is essential to offer you continuity, reliability and consultation, never forgetting the importance of tradition.

