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n° 1-2022

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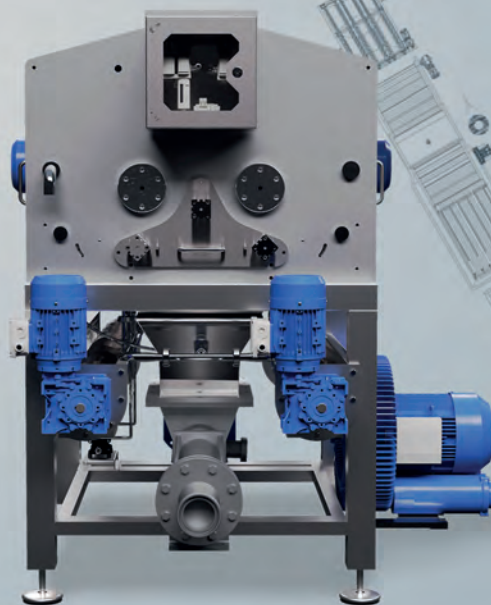
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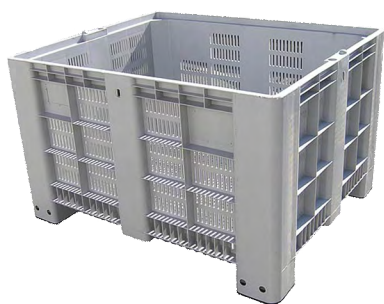
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THE NEW ERA OF FRUITS HARVEST IS CALLED

TRANSPORTER



The Transporter is the innovative self-propelled created by Darmec Technologies, for fruits and vegetables harvesting and transporting using plastic bins or wooden boxes. This machine can be widely used in the fruit and vegetable sector with planting in rows, trellis, arbour and open field.

It works in maximum safety and security and saves about 50% of the costs during picking up; it increases the productivity and removes all the disadvantages of traditional bin handling methods.



Darmec Technologies Srl
Soc. Uniper.

Strada Campovivo 454 int. 2
04100 Borgo Montello
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T +39 0773 458 958
F +39 0773 053 112
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TROPICAL FOOD MACHINERY

CERERE 6000 IS THE NEW AUTOMATIC BANANA PEELER PATENTED IN 2019.

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WRAPPING UP QUALITY WITH TAILORED PACKAGING SOLUTIONS.

PG. 64/67



SONIA V. MAFFIZZONI
Editorial Manager

As I write this editorial, a dark cloud hangs over us and the consequences of the international geopolitical events are starting to make themselves felt. It is evident, however – as experience teaches and history confirms – that the food farming industry is capable of great resilience: it may have to change shape and adapt, but it will resist. Just as nature does. Some great themes will show us the way forward in the months to come, marking the boundary between what is destined to come to an end, in other words, the “old way” of doing things, and what will find a receptive market.

I am thinking of the sustainability of our industry, a theme that is particularly dear to consumers and widely interiorized by trade operators, and I also refer to the circular economy, which guarantees the survival of the planet and maximizes emission reduction.

How to move in the right direction? The answer is staring us in the face every day: the new technologies, for prevention, monitoring, and distribution, at each phase of the production process.

In fact, these technologies are featured in numerous pages of this edition, designed to help us find the right way forward, and the necessary drive.

FOOD PROCESSING



ICI CALDAIE SPA

RUMMO IS BORN AGAIN THANKS TO UNIQUE PARTNERS.
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PNEUMAX SPA

PNEUMAX: COMPONENTS AND SYSTEMS FOR INDUSTRIAL AUTOMATION.
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CIBUSTEC FORUM 2022

THE NEW EXHIBITION-CONFERENCE LOUDLY CALLED FOR BY THE FOOD INDUSTRY.
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**EDITRICE
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editorial management
and registered office:
Via Cesare Cantù, 16
20831 SEREGNO (MB) - ITALY
Tel. +39 0362 244182
+39 0362 244186
web site: www.editricezeus.com
e-mail: redazione@editricezeus.com
portal: www.itfoodonline.com
e-mail: marketing@itfoodonline.com
skype™: editricezeus

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managing editor

Enrico Maffizzoni
direzione@editricezeus.com

editorial manager

S.V. Maffizzoni
redazione@editricezeus.com

editorial production

Sonia Bennati
bennati@editricezeus.com

account dep. manager

Elena Costanzo
amministrazione@editricezeus.com

project and layout design

ZEUS Agency
grafica@editricezeus.com

creative dep.

ZEUS Agency
grafica@editricezeus.com

translations

Leomilla Translation

printing

ZEUS Agency

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“ FOCUS ON THE RECOVERY OF THE FRUIT AND VEGETABLE MARKET ”

A phase of contrasts, in anticipation of agriculture 4.0



by Elisa Crotti



Photo by Pina Messina on Unsplash

Once again, we are addressing the post-pandemic in an attempt to understand the trend of the fruit and vegetable market which, certainly more than any other, has been affected by the restrictions. After more than two years of uncertainty, now that business activities are picking up, the situation is one of strong contrasts.

On the one hand there is the great potential of the industry, with consumers increasingly aware of the

quality and social/environmental sustainability of what they eat, doubtlessly conditioned by health concerns.

Hence the trend in favour of healthy foods - with fruit and vegetables at the forefront - and a growing preference for online retail purchases. In brief, at first glance the sector presents unquestionable growth opportunities, as demonstrated by the continuous, albeit slight, increase in per capita expenditure over the last year.

On the same optimistic note, today, the whole system is at the center of a process of radical modernization, also dictated by the need to produce more fruit and vegetables (estimated at +350 million tons by 2050 when the planet will be populated by nearly 10 billion people). This inevitably entails the immediate need to reduce the environmental impact of both production and trade.

If we observe the market from another point of view, however, the outlook is less rosy.

First of all, the market appears to be characterized by supply chains that are increasingly under strain: the effects of the pandemic have modified and continue to modify the transportation of goods and the movement of people, creating difficulties even among those who work in the industry.

To further complicate the picture, in the past year there have been critical climate-related issues, such as frosts in southern Europe, which decimated stone fruit harvests in the affected areas, and heavy rainfall in Western Europe, which caused significant losses, especially with regard to vegetables, whose inevitable price increases are amply covered in the media.

Added to which is the cost of fuels, with its infinite repercussions on the market, and the increase in the cost of energy, a cause of concern especially for producers in north-western Europe engaged in protected agriculture, to the point that some farming operations relating to the 2022 season have been delayed.

Finally, as regards water resources, which are also closely monitored due to climate change, new technologies are proving to be essential in supporting an agriculture 4.0 capable of resilience.

The past two years have accustomed us to a new digital world, which represents the challenge as well as the opportunity of the near future.

At this time of great change, the fruit and vegetable market cannot afford to take a back seat: the best possible scenario will be that of companies which are able to adapt and seize opportunities.



Photo by Pina Messina on Unsplash

DARMEC TRANSPORTER, versatility and efficiency in harvesting





The Transporter is an innovative self-propelled agricultural machine designed by Darmec Technologies, an Italian company based in Latina - Lazio (Italy) – to facilitate fruits and vegetables picking up and transporting with plastic or wooden bins.

This machine can be widely used for fruit and vegetable harvesting, it can operate in row, espalier, pergola and open field.

The Transporter guarantees halving harvesting costs and increasing productivity eliminating all the disadvantages related to traditional bin handling methods.

The bins are picked up from the ground through a fork positioned in front of the machine, then raised through hydraulic cylinder up to the





height of loading bed, where can be moved by motorized chains towards the rear part of the machine, to be arranged in order to be finally transported to the collecting point.

To unload the containers, the operator has just to move hydraulically the fork/loading bed and move back with vehicle for few meters.

The real winning card of Darmec's Transporter is that all operations can be made only by one operator: load the bins (even while moving), to carry it to the unloading area, and to deposit it easily and safely.

It is versatile (adapts to the vast majority of fruit and vegetable plants), stable (even when fully loaded or on hilly ground, thanks to the hydrostatic transmission and the horizontal distribution of weight on the loading



TRANSPORTER 650



darmec.it

DARMEC



bed), agile in its movement (it has 4-wheel steering equipped with radial tires which give it great fluidity).

Darmec Transporter is equipped with reversible driving seat and in addition to the classic loading platform, it can be equipped with quick connections to support other

applications. The handling capacity of that Machine ranges between 500/600 bins a day with the biggest model TRP 650 to 150/200 bins with TRP 325S the smallest one. 🏠

Visit:
www.darmec.it



Transporter 325s

“EXPENDITURE ON NATIVELY CONNECTED MACHINES AND EQUIPMENT IS UP BY 17%”

Thanks to the incentives,
exponential growth towards agriculture 4.0



by Elisa Crotti

Agriculture 4.0 in Italy has grown and continues to grow constantly, despite the Covid-19 crisis and the international geopolitical scenario. According to a survey carried out by the Smart Agrifood Observatory of the School of Management of the Politecnico di Milano and by Rise Laboratory (Research & Innovation for Smart Enterprises) of the University of Brescia, the sales turnover of this market rose sharply from 540 million Euros in the first semester of 2020 to 1.3 billion at

the end of 2020, reaching 1.6 billion in 2021. These remarkable results were presented during the conference titled “Smart agrifood: let’s pick the fruits of digital innovation!”.

There are several technologies on which investments in agriculture 4.0 are primarily focused, first and foremost natively connected agricultural machinery and equipment, which have registered a significant rise in expenditure. According to the Observatory,



this expenditure accounts for 47% of the market and is increasing by + 17%.

The boost is provided by incentives, to the advantage of mechanized equipment and substantial increases in the sale of tractors, for example, followed by monitoring and control systems for after-sale application on agricultural vehicles and equipment. In fact, 2021 represented a year of growth for the registrations of tractors and agricultural vehicles (+ 36% compared to 2020, according to the calculations of FederUnacoma, with a sales turnover for the Italian market of approximately 14 billion euros).

Indeed, with market growth being driven by incentives, especially the subsidies of Rural Development Programs and the Transition Plan 4.0, it is not surprising that three quarters of farms have used at least one Agriculture 4.0 incentive. Of these, 84% argue that incentives have had a decisive impact on investment choices, allowing them to anticipate them (for 44% of companies), to invest in more than one solution (20%) or in a more expensive solution (20 %).

The key to their success was that of linking the tax credit to mechanization and the implementation of innovative solutions. Initially, operators adopted these solutions to obtain the incentives. Subsequently, they realized the benefits of their investment and use rates have increased constantly.

This has extended the area being farmed with Agriculture 4.0 equipment, which reached 6% of the total in 2021, double the previous year.

Also according to the Observatory, in 2021 60% of Italian farmers used at least one Agriculture 4.0 solution, + 4% compared to 2020, and over four out of ten use at least two, in particular management software and monitoring and control systems for machinery. The researchers also report a growing interest in data analysis and decision support systems, confirmed by 26% of farmers who foresee investments in this area of agriculture 4.0 for the near future.

A trend for a new concept of farming, which seems to be unarrestable.



RETIFICIO PADANO: we produce nets for different application fields

We have been manufacturing nets from the 80s. We are specialized in the production and trading of nets for agriculture, horticulture, building industry and other industrial uses, sport and entertainment nets. Our business card is client satisfaction, in fact we are proud to have been serving most of them since a long time. We offer our clients goods reasons to choose us.

HIGH PRODUCT QUALITY. The nets are manufactured in the factory in Ospitaletto (BS) Italy, they are entirely made of High Density Polyethylene (HDPE) monofilament. The yarns are obtained from the extrusion of polyethylene granules inside our factory. In this way we can guarantee the product quality control during the entire manufacturing process. The HDPE monofilament is the ideal raw material to produce nets with strong resistance to atmospheric agents. In fact, the polyethylene granules are carefully mixed with anti-oxidant additives thus granting a high resistance to the damage determined by UV rays.



Anti-insect net

Anti-insect net

These nets are generally used to protect cultivations from insects. It is a very thick mesh net. It is the best protection against insects as it avoids the use of insecticides. In white colour it has a low shading factor (9-10%), while in black colour it can also be used as a shading net (60-80% shading factor).

Available:

- ANTI TUTA ASSOLUTA NET

- ANTI APHID NET
- ANTI CARPOCAPSA NET (Cydia pomonella)
- ANTI ASIAN BUG NET (Halyomorpha halys)
- ANTI-DROSOPHILA SUZUKII NET
- ANTI POPILLIA JAPONICA NET
- ANTI BEMISIA TABACI NET
- ANTI BUMBLEBEE NET

Entirely made of polyethylene monofilament stabilized against UV rays, it is a very thick mesh to prevent insects passing.

Anti-hail net for orchards and vineyards

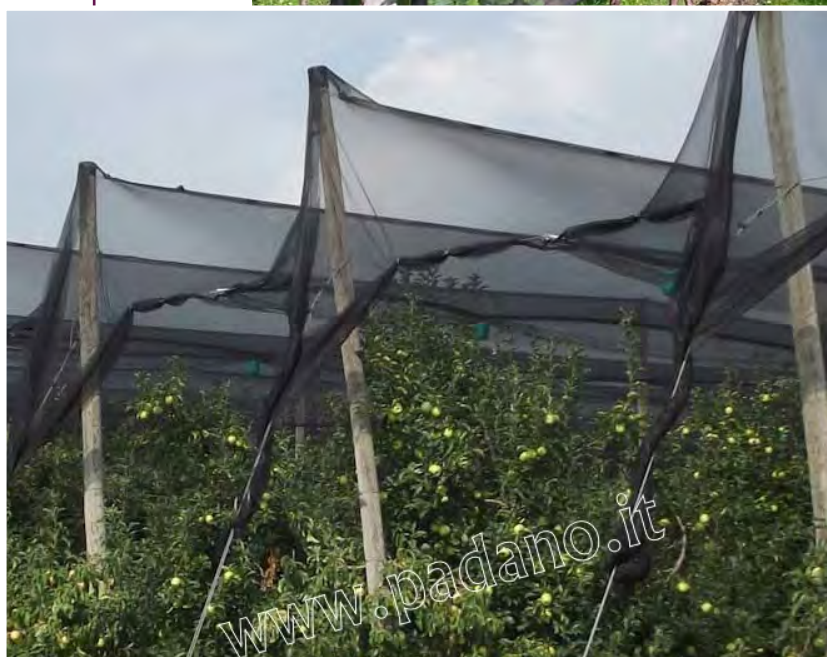
ANTIHAILE NET FOR ORCHARDS.

These nets are used to protect crops from damage caused by hail. Entirely made of virgin polyethylene monofilament, stabilized against UV rays. They are mainly used for covering orchards such as: Grapes, Kiwi, Apples, Pears, Cherries, Peaches etc. The net can be of two types: ladder-proof (Raschel) or english row (Leno), both types are very resistant.

THE NETS FOR VINEYARD PROTECTS:

- from hail
- from the birds
- from animals
- from sunburns

Nets available with English row (Leno) and warp-knit weaving, the latter (art. Salvigna) is the most suitable to use on the vineyards as it does not spread during the lifting of the net. Supplied in black color. The costs are extremely affordable. Accessories for fixing the net are also available. Installation is simple and fast, it does not require specialized personnel.



Anti-hail net for orchards and vineyards.

QUICK DELIVERY TERMS. The wide warehouse permits to store a good quantity of nets in order to satisfy orders quickly. Moreover, an efficient organization of production department allow to dispatch easily also the requests of non standard products.

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product range for different uses such as agriculture, horticulture, building, industry, sport and entertainment.

AD HOC PRODUCTS. Didn't you find the net suitable for your purpose? Would you like to have some of your standard net in any other colour? Please ask us, we could find the right solution for you.

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plastic core and external transparent plastic film. Moreover, the nets whose widths are over 2 m, the net is folded to obtain shorter rolls in order to ease the transport and the storage. The sheets are folded and packed in plastic bags of paper boxes.

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Olive falling fruit harvesting net

Olive falling fruit harvesting net

Our nets are made in polyethylene (HDPE) monofilament stabilized against ultraviolet rays, we only use virgin raw materials which are free of any harmful substances. Various types of meshes are available in order to optimize the collection of different types of fruit. Particularly suitable for the collection of olives, almonds, walnuts, hazelnuts, Haselnüsse and

other fruits. The nets can also be used for manual or automated collection. They are available in various weights and colors and can be supplied in rolls or in sheets already sewn of the required dimensions, with or without central slit.

ALL OUR NETS ARE NON-TOXIC, SUITABLE FOR CONTACT WITH FOOD ACCORDING TO EU REGULATIONS. IDEAL FOR BIO CULTIVATIONS. 100% MADE IN ITALY.

Shading net

These nets are suitable to reduce the sun light intensity in greenhouses, sheds, parking, etc. and to protect private properties from external sight.

- SHADE NET. Entirely made of UV stabilized polyethylene monofilament yarn. It is a thick mesh net that does not ladder and has a high breaking and light resistance. It is manufactured in three different weights corresponding to a different rate of shading factor (50%, 70% e 90%).
- SHADING NET TITANIUM WHITE. Made of virgin HDPE monofilament UV stabilized, COLOUR WHITE TITANIUM. The TITANIUM white colour, much brighter than the normal white, reflects more sunlight and reduce the temperature inside the greenhouse.



ISHIDA X-RAY SOLUTION improves safety and quality for dried fruit and vegetables

The installation of an Ishida IX-GN-4043 x-ray inspection system at Polish natural dried products manufacturer PAULA Ingredients has further enhanced product safety and quality while delivering the high production throughput required.



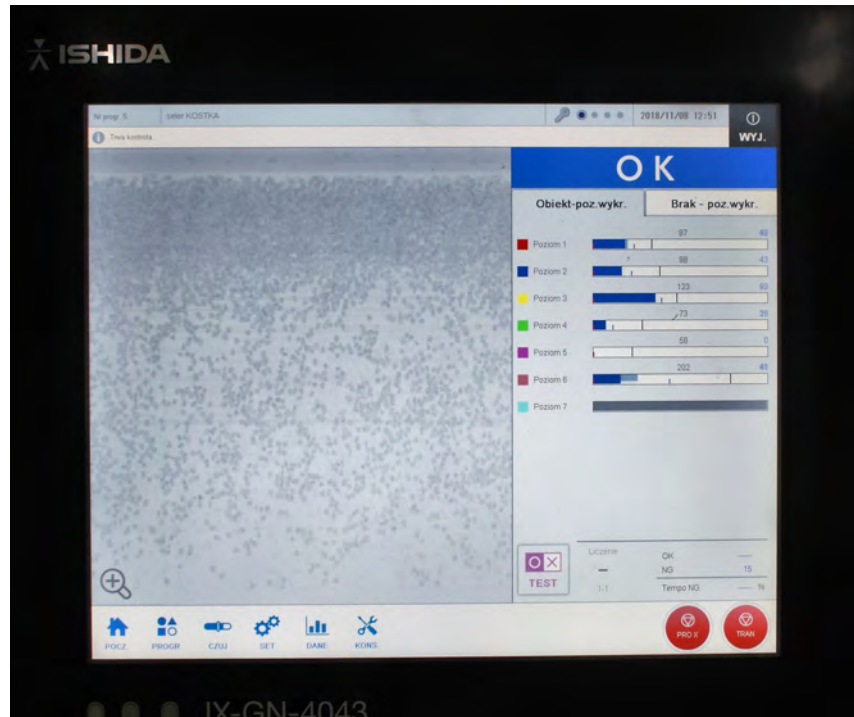
The installation of an Ishida X-ray inspection system has further improved product safety and quality.

The success of the installation means that the company is already considering the purchase of a second x-ray machine.

Based in Kalisz in Central Poland, PAULA Ingredients specialises in the production of a variety of snacks made from dried fruits and vegetables and aimed at health-conscious consumers.

For this sophisticated and demanding target audience, the highest quality standards are essential.

Previously the company used a combination of metal detectors, magnets



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and sifting equipment to check for foreign bodies in the delicate bulk product which comes in a wide variety of shapes including cubes, slices and flakes.

However, this process still allowed occasional unwanted foreign bodies to pass undetected.

By comparison, since the installation of the Ishida IX-GN-4043, PAULA Ingredients has experienced a significant improvement in foreign body detection, with the quality control team reporting the detection of impurities including metal, glass and dense plastic.

The IX-GN is in operation 24 hours a day, 5 days a week, handling around 300kg of product per hour to deliver 36 tons of health snacks per week.

Another advantage of the IX-GN-4043 is its simple and intuitive operation. Product changeovers can be carried out in a matter of seconds simply by changing the product presets.

Whilst operation of the machine is easy, Ishida also provided full initial training for operators and engineers to ensure its ongoing performance.

"Our intensive use of the Ishida x-ray machine has not affected its functionality or reliability," comments PAULA Ingredients' Technical Director Stanisław Jakiewicz.

"As part of this, the easy maintenance of the machine enables us to quickly clean the conveyor.

Some of our products contain natural sugars and can be sticky.

This occasionally caused problems with other inspection solutions, but with the Ishida Xray system we have overcome this issue."



The Ishida IX-GN-4043 was supplied and installed by Ishida's long-term partner in Poland, Fenix Systems, who carried out a thorough review of PAULA Ingredients' requirements to ensure the most appropriate solution and best positioning of the machine in the factory.

"Having now operated the machine for almost a year, Ishida has become our brand of choice for the future," confirms Stanisław Jakiewicz. 🏠

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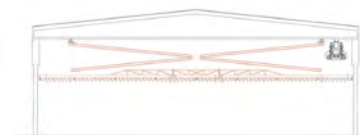
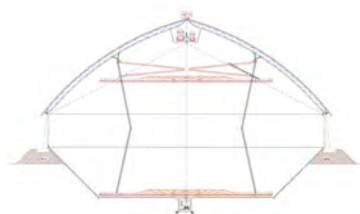

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THE EXTRAORDINARY
ITALIAN TASTE

BORGHI SRL: cereal stocking and transformation plants



BORGHI
INDUSTRIAL EQUIPMENTS



One of man's dreams is immortality, a concept bound indissolubly being healthy, which implies eating healthy.

In view of the fact that a large quantity of products, composing our daily diet, derives from cereals transformation (wheat, corn, barley, etc.), it follows that modern politics considers them as strategic products, as well as fundamental resources for a country's economy, so their conservation is a social target, as well as agri-food. Storing a cereal for longer or shorter periods, in a rational and safe manner with the minimum cost of operation, is the task of a silo.

In order to choose the type of a silos to be adopted, many factors are involved, such as annual passing number, storage capacity, conveying capacity, conditioning and non-conditioning systems, possible treatments and other factors.

In any case, the work cycles in a silos must be rapid, having the possibility to collect and to return the product at the same time, where the man must only check.

The silo capacity is a too subjective factor to allow practical suggestions, it depends on the purpose of the plant and the local market conditions as well

as on economic-financial calculations. However, we could state, in the first analysis, that a silos plant with:

- a. many cells, of modest capacity and with different grains, is used to make quality.
- b. few cells with large individual capacities and few varieties of cereal, serves for convenience exploiting the market prices for supplying goods speculating on the cost (e.g. cereal purchase and storage during the harvesting period)

The silos are divided into two above mentioned large categories:

Vertical silos

Normally circular, polygonal, with hopper and/or flat bottom. They can be made of metal, where they can reach a diameter up to 30-35 m, with capacity up to 15.000 tons/each one or in concrete, generally with a diameter from 6 to 8 m with inter-bins and heights of 60-70 m (e.g. port silos).

However, we will deal with this type of silos in a special section.

Horizontal silos

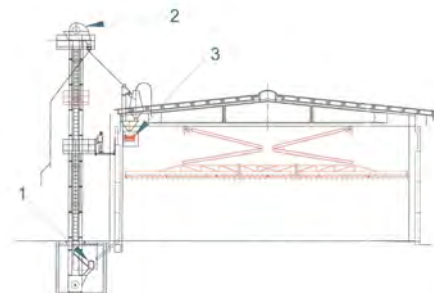
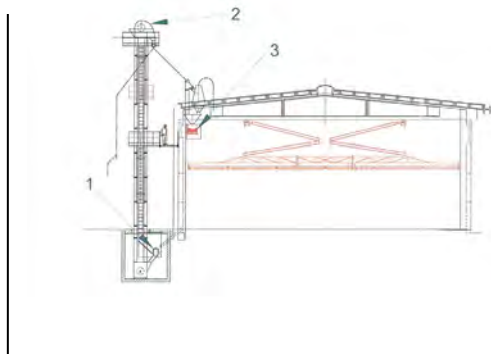
Consisting of flat warehouses, today they represent the most economical system (ratio between cost and stored

tons) for cereal storage and conservation (energy and labor necessary for the plant optimal functioning). Generally made of metal or reinforced concrete and/or prefabricated with variable dimensions: width 20-30m up to 50m and length over 100-150 m with storage height (side wall) ranging from 6 to 11 m, where the unit capacity is generally over 10.000 tons (finding in this situation an economic reason for the choice).

This type of silo is widespread in Brazil and Australia where, in the latter, it covers more than 10% of national storage with warehouses reaching up to 60.000 tons (133 m length, 54 m width, with 11 m average height storage).

The types of horizontal warehouses that we can meet are many, where the best known are the following:

As already above-mentioned, the horizontal silos (warehouses) can be made with reinforced concrete walls directly cast in place or with lateral pillars supporting the lateral curtain wall made of reinforced concrete slabs (prefabricated). The flat warehouses can also be made with metal side walls where normally their walls are realized bending (Ω -shaped) steel slabs directly bolted to pillars, always in steel, placed at a constant pitch (from 3 to 5 m) on the warehouse perimeter.



The covering can be realized by means of prestressed concrete trusses or in metal where for important lights (over 30m) it is an obligatory choice. The theory used to calculate the pushing on the walls (a fundamental element for calculation and design) is the one best known as "land pushing".

In the past the use of flat warehouses for the cereal storages aroused some perplexity due to the difficulties that could be encountered in the management of the stored grain, such as:

- 1) difficulty in ensiling uniformly and constantly
- 2) difficulty in intervening in case of non-conditioning
- 3) difficulty of cereal return in compliance with health and hygiene rules
- 4) difficulty of cereal conditioning
- 5) difficulty in stocked mass temperature and humidity monitoring.

The new technologies and financial market trend (banks finance more willingly a flat warehouse than a vertical metal silos) represent an excellent alternative to storage in vertical silos. Take into account the company's type of activity choosing the unit capacity or the type of silo to be adopted, horizontal or vertical.

DESCRIPTION OF A FLAT WAREHOUSE MECHANIZATION TYPE

A chain conveyor (1) is mounted in one side of the warehouse (normally

the longest) for cereal loading and unloading destined to the warehouse storage, in fact:

the conveyor is mounted on the bottom of a reception pit regularly covered by a self-supporting truckway grating along the entire length of the conveyor or only where it is strictly necessary (e.g. near the point of unloading of the vehicles and/or in other points, where it is deemed necessary, depending on the activity to be carried out).

The uncovered part is normally closed with reinforced concrete slabs or steel of suitable shape and thickness. The vehicle will discharge the cereal inside this pit which, through the chain conveyor (1), will convey the cereal into the elevator (2).

The elevator will raise the cereal and load the warehouse loading belt (3). The belt conveyor (3) will be equipped with a tripper (4) with a motorized advancement, able to discharge the cereal inside the warehouse on time. The warehouse loading and unloading robot is positioned at the tripper discharging. This robot is substantially able to run along the whole length of the warehouse and it can rising and lowering for the whole height of the flat warehouse. A screw conveyor system is installed on the lower part of the robot to move the cereal from side to side of the warehouse.

As it is easily understandable, once the cereal is discharged from the tripper and it touches the robot wormreads, the same is pushed on the op-

posite side. When the cereal reaches the opposite side, a special rocker system will indicate that the cereal has reached the desired position, so it will drive the tripper to move in a predetermined measure; consequently the loading robot will move and repeat the same cycle up to the total filling of the warehouse.


Some shutters (5) incorporated into the wall, which obviously can be manual or motorized, are installed on the side where the reception pit is located, so the chain conveyor (3).

The robot will be placed at the point where you want to unload the warehouse and the correspondent discharging shutter will open.

It follows that before the cereal will fall down by gravity, after by means of robot and then it will be pushed towards the discharging shutter.

In this way the cereal will reach the discharging conveyor which, in turn, will convey the product to the elevator (2) placed generally at the head of the warehouse, under which a valve is able to carry out the following operations:

- return
- recirculation
- another operation (e.g. cleaning)

As shown in the operation description, the loading and unloading robot is the main performing element of mechanization. 

www.borghigroup.it

All about food: MAXIMUM EFFICIENCY for all production lines!

Effective planning and controlling of processes are one of the most important things when it comes to fresh food. However, the reality is different: Many producers, importers or packing houses still work with manual entries in confusing Excel tables.

Planning errors are based on this and on insufficient networking of the systems. How can this be avoided?

Smart, individual, digital: Food production 4.0. with 30% efficiency increase

Although Industry 4.0 is a hot topic for decision-makers, there are only a few software providers dedicated to Food Production 4.0. An example of this digitalization offensive is the "PECS" tool.

The Production Efficiency Control System covers the complete production control and networks plants and machines - regardless of the maker. Production lines are set up in just a few clicks, personnel planning is carried out in no time, and the performance data of the respective production is made available in a clear manner.

Future orders and activities can be forecast to the minute. An average 30% increase in production efficiency can be expected.

Import & maturity planning: Preventing sources of error that often cannot be taken into in the daily business routine

Especially in the case of perishables, it's necessary to know exactly at which time which quantity is available



Effective planning and controlling of processes are one of the most important things when it comes to fresh food.





at which location. This is the only way to minimize over- or underdeliveries and the spoilage of goods. Planning is usually based on Excel lists, which then have to be manually converted into orders in the ERP system. The fact that errors happen here can hardly be avoided. The changeover to a database-based solution opens new potential.

The Fruit Import Planning System "FIPS" generates orders based on a

planning quantity and considers live data such as sales quantities, spoilage, lead times, transport times and ripening cycles.

This guarantees supply chain traceability and detailed planning of ripening chamber utilization. Underdeliveries are immediately apparent and appropriate replacements can be provided at an early stage.

ERP: Making yields visible even before the harvest

In many ERP systems, a comprehensive data exchange and thus a continuous, clear planning and control is only possible to a limited extent. The step towards an industry-specific solution such as "traceNET", which can map the processes of food-producing

companies, is therefore obvious and necessary. Instead of manual entries, it works with automatisms that make everyday production easier. The complex processes of food producers are mapped and optimised in detail. Crop and harvest reporting, ordering, packaging material planning, batch tracing and certificate management are just some of the comprehensive functions.

Individual software solutions for food producing companies, mobile solutions, real-time overview & business intelligence tools can be found at "activeIT-Software & Consulting GmbH". 

www.active-it.at

activeIT 
Software & Consulting GmbH



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FRUIT
LOGISTICA

MEET ONSITE
AGAIN

FRUIT LOGIS TICA

2022

5|6|7 APRILE BERLINO

FRUITNET

Il vostro referente:

Pier Goffredo Ronchi, messeberlin@pg-mktg.it



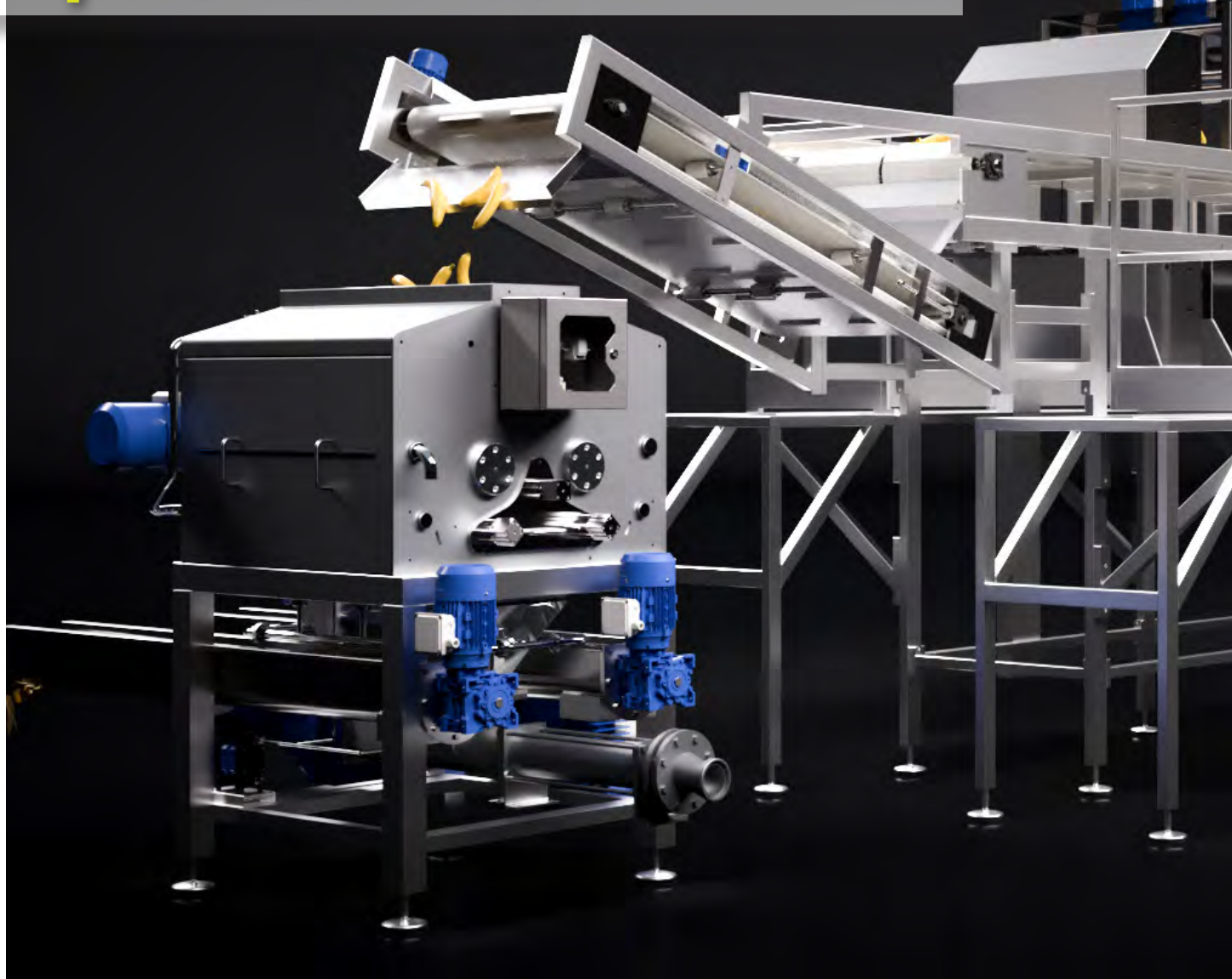
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TROPICALFOOD

MACHINERY

Cerere 6000 is the new automatic banana peeler patented in 2019



“

TFM is one of the major international players regarding the design and construction of dedicated banana processing plants.

”



Gith decades of field experience on its back, the Italy-headquartered Tropical Food Machinery is a leading company in the global field of fruit processing machinery.

Founded in the late 1970s by a pioneering Italian entrepreneur, the company currently boasts an operating branch in the Brazilian state of Minas Gerais, two-fruit processing plants located in the north of the country, as well as liaison offices across the Asia-Pacific and West Africa regions, India and Costa Rica.

The company corporate philosophy revolves around the notions of flexibility and versatility, constantly seeking to identify the most appropriate solution in any particular case as it is well cognizant that customers' needs depend on a wide range of factors, such as geography, ready access to market and a working supply chain.

TFM is one of the major international players regarding the design and construction of dedicated banana processing plants. Innovative technologies have been developed for the various stages of banana process, from the receipt of the raw material, manual and automatic peeling, to the aseptic filling of the highest quality purée available on the market.

The conventional sources had a market share of more than 95% of the banana puree market by source type in 2017. Even though the conventio-



TROPICALFOOD
MACHINERY



nal segment is likely to lose BPS share, its dominant position ensures that it remains far ahead of organic source in the banana puree market at the end of the forecast period. An incremental dollar opportunity of over US\$ 265 million in the conventional segment from 2017 to 2027 is too lucrative to ignore.

Aseptic banana puree is produced economically as compared to acidified seedless banana puree, explaining its popularity in the banana puree market.

The infant food segment is the largest in the banana puree market by application.

A rising number of women joining the workforce every year naturally demand good, nutritious, and ready-to-eat foodstuffs for their babies. Baby food consists of baby yoghurt, cereals, and oatmeal. Baby yoghurt and cereals are often made of different fruit flavours with banana puree being especially popular. The market attractiveness of infant food is 2.1 in the banana puree market with beverages following closely behind at 1.8.

The infant food segment has been growing at a rapid clip because of the widespread use of banana puree in the production of a number of finished foods. The infant food segment is anticipated to be worth approx. US\$ 250 million by end 2027, making it the largest segment in the banana puree market.

In 2019 Tropical Food Machinery has patented the new automatic banana peeler "Cerere 6000" which has a working capacity of 6 mT/h of fresh product and a pulp extraction yield of 60%.

"Cerere 6000" will guarantee you a precise automatic peeling system and a reduced use of workforce, a processing of the pulp in inert atmosphere with antioxidant treatment, a constant productivity and an excellent final quality.

Every line is designed in-house and then built and tested before every and each delivery.

This enables a complete control over quality and productive speed, creating a strong sense of responsibility within the company's workforce. In addition to that, Tropical Food Machinery boasts a comprehensive after-sales support service that is able to provide spare parts and a prompt technical support if the need should arise.

In recent years, the interest of the retailers, driven by the increasingly tasteful market demand, has headed towards the constant improvement of the organoleptic characteristics of their products. Waste reduction is also a growing focus.

This is why Tropical Food Machinery has developed and designed Aroma Recovery, an innovative and compact automatic device capable of extracting aromas and essences that would otherwise be lost by the flow of natural juice.

Any product subject to industrial processing is liable lose some of its organoleptic properties, including the aroma. The loss can occur either due to the extreme volatility of these aromas during the extraction procedures of the product, or by evaporation during the heating or concentration phases.

Aroma Recovery is able to stem this loss. The unit consists of several vacuum condensation columns that condense the aromas using cooling fluids at different temperatures.

The aromas are then extracted by flash evaporation and, depending on the grade of quality, sent to one or more collection tanks or added straight to the product.

Thanks to its versatility, Aroma Recovery can be used with any aroma-rich product even if not processed by the process line.

The upsides of recovering aromas are manifold: the extracted aromas can be reintroduced into the concentrate coming out of the evaporator, improving its characteristics but also being sold separately from the product.

This makes for an exceptionally rapid return on investment. High-quality natural aromas in fact have a considerable price for use markets such as food, beverages and cosmetics – exactly the fields of application of this cutting-edge piece of machinery. 🏭

www.tropicalfood.net

Tropical Food Machinery has developed and designed Aroma Recovery, an innovative and compact automatic device capable of extracting aromas and essences.

“ TECHNOLOGICAL INNOVATION AT MACFRUT 2022 ”

A test field of 1,600 square meters dedicated
to the future of farming



by Elisa Crotti

From 4 to 6 May, the Rimini Expo Center hosts Macfrut, the fruit & veg trade fair, which has chosen to focus on innovation in the fruit and vegetable trade as one of its main themes this year. For this purpose, a special dynamic area of over 1,600 square meters has been set up, where trade operators are offered a firsthand experience of agriculture 4.0 innovations in terms of both technological innovation and environmental impact/cost savings.

Coordinated by trade expert Luciano Trentini, the area, , offers four proposals: a field given over to cherry groves, the Acqua Campus area dedicated to water saving, a space for biodegradable plastics used for mulching in horticulture, and finally the Smart Agriculture area highlighting the most innovative technologies.

«The fruit and vegetable system is at the center of a strong phase of modernization, with the need to produce more fruit and vegetables - explains Trentini -. This entails the need to reduce the environmental impact of both the production and commercial phases. This period has accustomed us to a new digital world, agriculture 4.0 and Big data. Once again, Macfrut 2022 sets out to play an active role in informing and being at the forefront of the industry, by probing topical issues regarding the agricultural business, which will soon have to adapt to a changing world».



Photo by Mark Boss on Unsplash



Photo by Steve Harvey on Unsplash



One of the main topics is represented, within the dynamic areas, by a field given over to cherry trees, alongside the International Cherry Symposium: a proper cherry orchard with plants of different varieties presented by important Italian nurseries. The orchard is protected by anti-hail and anti-cracking nets supplied by Italian companies, irrigation and fertigation systems, sensors and control units for weather data collection and system management.

On the very important issue of water, the new irrigation systems for reducing water waste are presented in the Acqua Campus area in collaboration with Anbi (National Association of Italian Reclamation) and Cer (Emilia-Romagna Canal). Also in this case, technological innovations such as sensors for monitoring water and soils, weather stations, control units for plant automation, fertigation systems and anti-frost systems are crucial tools to ensure a correct supply and better management of water resources. This is an essential aspect, in view of the water-related criticalities already emerging in Italy.

To respond to a very strong sustainability trend, there is an area dedicated to the environment and the role played by the biodegradable plastics used for mulching in horticulture. Biodegradable plastics of plant origin are an excellent alternative to traditional plastics. Here the goal is to reduce plastic-related pollution and preserve the environment. These solutions may be applied with various horticultural species and in numerous contexts.

Finally, the Smart Agriculture area opens a window on the future of farming, precision farming in particular, with a focus on technologies such as sensors, drones and robots applied to the world of fruit and vegetable production. Some applications are already in use, others are merely prototypes – offering a taste of what the market will soon have to offer.

OMIP offers quality, innovation and technology for fruit processing

Avocado Pitter mod. KAV2: a revolutionary machine that minimizes operating costs

OMIP SRL, founded in 1971, is targeted at all the canning companies which need to have a more reliable equipment, built with quality materials and great robustness, where the cost of production, as well as that of the workforce, is minimized.

For this reason, it is focused on the design and construction of machinery characterized by simplicity of operation, versatility and reduction of costs.

"Thanks to research, development and innovation, we have been able to introduce, on the world market, the most modern technologies in the field of pitting and hence becoming a global reference for fruit processing" said the company managers Francesco Pannullo and Alfonso Califano.

"In addition to continuously improving the products already on the market, our objective of expanding our manufacturing horizons through the design of machinery capable of transforming fruits and vegetables other than those that it is already able to process – added sales manager Timothy Ahiagba - Examples of such achievement include the apricot pitters mod. KA3 and KA6, the peach Repitter and the Avocado Pitter mod. KAV2."

Avocado Pitter mod. KAV2

"The KAV2 pre-cuts the Avocado separating it into two halves and thereby facilitating its pitting – continued the

managers - The machine, available on the market over 8 years, is suitable to pit the avocado fruit even if it is not perfectly graded."

All parts having contact with the fruit are for alimentary and hygienic purposes and the structure is completely made of stainless steel.

The avocados, appropriately unloaded into the Feeder, are discharged into the channels of the Orientation station that orientates the fruits and positions them at the ideal cut through suitable and particular devices.

The flexibility of the orientation elements allow the machine to automatically compensate for the differences in the fruits that are not perfectly graded.

The Cutting Station is made up of three particular circular blades. "The innovated mechanisms have, almost all, eliminated the machine lubrication and have hence reduced operation costs to their minimum."







Avocado Pitter mod. KAV2



OMIP's organizational skills and the quality of their products have enabled them to establish themselves on all markets: from the Italian to European, from the South American and Californian ones to those of South Africa and Australia up to the Asian and New Zealand markets.

Today, the use of the latest mechatronic applications, places OMIP a step ahead, hence revolutionizing once again, the sector of fruit pitting.

OMIP are exhibiting at the forthcoming Fruit Logistica 2022 (Berlin, 5-7 April) in Hall 3.1, Stand A-06. For more information on company solutions, company managers Francesco Pannullo and Alfonso Califano will be there together with the sales manager Timothy Ahiagba. 🏛️

www.omip.net



NUTRITIONAL CONCEPTS LAB

Innovative open R&D facility for the fruit and vegetable sector and the food industry at Villa Flora Venlo

Mi Food has developed a new R&D facility for the food sector and agro-industry at Villa Flora in Venlo. The Nutritional Concepts Lab uses a patented process in the vacuum coater as the basic technique for processing vegetables and fruit quickly and at core temperatures up to 35°C. Subsequent processes such as puréeing, mixing, drying and spraying are also carried out at the Nutritional Concepts Lab. The facility is suitable for the development of innovative dry and liquid products.

Retention of bioactive substances and vitamins thanks to low temperatures

MiFood developed its Nutritional Concepts Lab specifically for prepar-

ing innovative vegetable and fruit-based products. Fruit, vegetables and waste flows from industries that work with these products can be processed here for a short period and at low core temperatures (up to 35°C). The patented process in the vacuum coater is key to this. Products boil at a lower temperature in a vacuum. The bioactive ingredients, flavour and vitamins remain fully intact due to the short processing time and the low core temperatures. This makes the new R&D facility particularly suitable for the development of healthy pearls, soups, sauces and mixed drinks. Fresh fruit and vegetable mixes can also be processed or dried quickly in the vacuum coater. Products can be mixed or puréed in another process unit at the R&D facility.

Suitable for the development of new liquid and dry products

The vacuum coater incorporates a twin-shaft mixing mechanism that mixes, fluidizes and aerates the products quickly and efficiently. During this mixing process, liquids such as juices, concentrates and oils can be added to liquid and dry products. The finely atomized liquid droplets mix homogeneously with the products as they are sprayed. Dry products such as powders, pearls, cereals, croutons and extruded pellets can be coated during this spraying phase, without clumping or sticking. The vacuum function used by the Nutritional Concepts Lab ensures that liquids applied in this way can then be sucked deep into dry products. It is even possible to add

continued on page 43



GEA high pressure homogenization technology in Food & Beverage applications

GEA is the technological leader for dynamic high pressure homogenizers and plungers pump, suitable for all industries and applications. This is the result of specific know-how and a spirit of innovation that is constantly focused on innovation and high standard process performances.

How homogenization enriches food products?

The benefit of high pressure homogenization is well known in dairy, food & beverage industries for subdividing particles or droplets present in fluids, and reduce them to the smallest possible size, down to nanometer range. Enhanced stability, shelf life, viscosity, color and taste are the essential characteristics that the emulsion gains through this process. Homogenization contribute in increasing digestibleness and, as consequence, facilitating assimilation of the nutritional principles as well.

The use of high dynamic pressure and homogenizing valves specifically designed by GEA experts for different applications, allow to subdivided particles at the required size and efficiently mix ingredients at the lowest possible pressure, ensuring energy and cost savings.

What makes GEA your ideal partner?

The most important key of success consists in the close collaboration with customers. The connection of common efforts enable to implement innovative and tailor-made solutions, to maintain continuous product devel-







opment and to guarantee efficient operations with excellent results on the final products. The latest set-up and continuous improvements on production technologies allow the company to offer a complete range of homogenizers, from laboratory up to the industrial scale.

Thanks to a strategy of development of both established and potential applications, often based on cooperation with our customers' Research and Development Centers, GEA can offer highly specific and customized process solutions to always meet, ensure and repeat over time product quality excellence.

All GEA homogenizers are designed CIP and SIP, they are available with cGMP documentation and approved FDA and 3-A certification; GEA is also able to support clients for the IQ/OQ

qualifications and product test (FAT-SAT).

Ariete Series. The state-of-the-art technology for power, reliability and flexibility.

These machines are easily implementable in remote controlled systems and complete process lines. GEA homogenizers are available in different configurations, conceived with specific liquid end design that allows to reach up to 1500 bar with premium homogenization performances warranty.

Main advantages:

- Easy to use
- Highest reliability on continuous production (24/7)
- Reduced operational costs (water, lubrication oil, energy)
- Low environmental impact
- High capacity at ultra-high pressure

One Series.

The combination of convenience and quality to deliver unmatched benefits. These 3-piston homogenizers are simple and versatile machines manufactured to ensure easy maintenance and simple installation. Available in five versions, the series can meet any production need (from 300 l/h up to 10.000 l/h - 250 bar).

Main advantages:

- Ready-to-use
- Ideal for small-medium dairy & beverage industries
- High versatility and smart installation
- Long lasting core components
- Reduced maintenance cost
- Safe sanitary design

Find the perfect homogenizer for your product

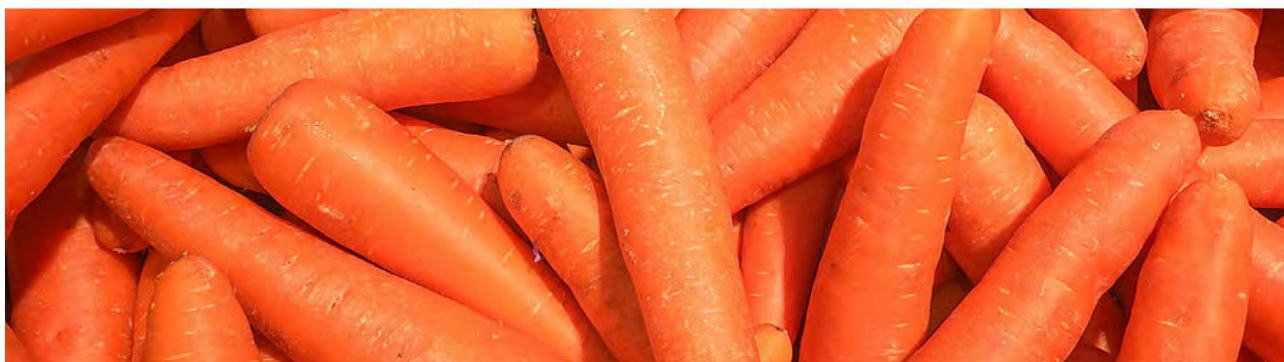
The Laboratory and the Innovation Center, just refurbished in November 2019, represent a unique resource for customers to directly test homogenization technology on their product samples, refine receipts, develop high efficiency homogenizing valves and evaluate the performance of installed machines. Highly qualified staff can support customers in the development of new products, to test maximum process efficiency conditions and product scalability to industrial production processes.

The quality and the reliability of GEA homogenizers are well known all around the world, find out all the information on the website

www.gea.com/homogenizers 



continue from page 39



multiple layers around each product particle, and to vary the vacuum during the process.

Brightlabs and expert network of food and technology specialists

Companies active in fruit and vegetables and food producers can book half-day sessions at the Nutritional Concepts Lab for testing and product development.

Small-scale production runs are also possible. In addition, these activities can be supported by the new R&D facility's network of food and technology specialists. Batches from 10 to 500 litres can be processed. Furthermore, customers can use Brightlabs to determine the constituents, quality



and food safety in vegetables and fruit. The Nutritional Concepts Lab obviously maintains strict confidentiality when working on projects. For more information about the Nutritional Con-

cepts Lab and product innovation, please contact Raymond Nolet, +31 6 10322186, send an email to **info@mifood.nl** or browse to **www.mifood.nl** 

FUTURE OF FOOD PRESERVATION

Already present and available

PIGO srl is a family-run company, founded in 1991, and based on continuous research and development of new technologies, and improvement of the most cutting-edge technologies existing in the food processing.

PIGO srl is specialized in freezing that for decades was the best way to store the food, and still is. With deep freezing, up to 100% of all the natural characteristics and nutritional values of the fresh product are preserved, but

the frozen product requires the cold chain.

The future of the conservation is in the possibility to conserve the product in the easiest way possible. That is why the future is now.

The perfect complicity of the high technology, simplicity for the user and economical advantage are all concentrated in EFD Easy Freeze Dryer. Taking the frozen product, drying it with the sublimation process (freeze

drying), we obtain a product with all the characteristics of the fresh product, but completely without water, with a "shelf life" of many years, which does not require any particular conditions for the storage.

Today it is possible to freeze-dry not only individual components, but also whole meals. All we had the pleasure of seeing and trying complete meals, also for celiacs, who do not lose their taste or natural characteristics, thanks to one of our customers



"The only way to predict the future is to have power to shape the future." (E.H.)



who with decades of experience in the medical-pharmaceutical field uses these methods for its product.

Foods processed in this way have always been used by astronauts but today these products are the most innovative and most popular in all sectors of the food industry worldwide.

Today, PIGO srl is one of the very few companies in the world that offers all three main methods of preserving food: freezing, drying, and freeze drying.

Managing to improve existing technologies, obtaining the final product of clearly superior quality.

Following guideline "our raw material is gray matter", PIGO srl is focused on research, development and continuous improvement, thanks to engagement of entire team and collaborators.

PIGO srl long term experience in fruit and vegetables processing brought also to develop the high tech freeze-dryer that allows to save delicate aromas while drying the frozen product under vacuum, producing a premium quality product. The sensorial properties of the finished product are absolutely superimposable to those of the fresh product. After the process, product will have retained its form, volume and original structure, as well as all its physical, chemical and biological properties.

As the product is porous, it can be re dissolved by the simple addition of a proper solvent (water).

As mentioned PIGO srl is specialized also in freezing, and for the perfect IQF freezing process we recommend **EASY Freeze IQF Freezer**, PIGO srl avantgarde in freezing technology.

Fully controlled fluidisation method keeps the product constantly suspended above the belt in a cushion of air. The result is the immediate crust freezing and efficient core freezing of individual pieces, regardless of type, variety or condition of product.

Maximized freezing efficiency is guaranteed for each unique



product, whether the product is heavy, light, soft, sticky or fragile, thanks to Variable speed control of all fans and all other build-in drives, allowing on-the-fly optimization of air flow conditions.

PIGO srl is also specialized in other drying and freezing technologies. Besides **Easy Freeze Dryer EFD**, main machines for drying are **Adiabatic Multistage Belt Dryer PG135** and Tunnel Dryer PG128. For freezing, besides the **IQF Freezers EASY Freeze**, PIGO also produces **Spiral Freezers EASY Freeze SPYRO**.

PIGO srl experience also in complete stone fruit processing lines is perfectly proven and incorporated in the **High Capacity Pitting machine - PG 103**.

The key advantages of PIGO Technology and competitive technologies:

FASTER PROCESS WITH LESS ENERGY – Our method reduces process time up to 25% while consuming less energy.

LOW TEMPERATURE OPERATION – Uniquely designed features allow the low temperature operation cycles which are crucially important for preserving the natural integrity of the product.


NO PRODUCT WEIGHT LOSS / ZERO DEHYDRATION - Uniquely designed features allow air flow which are crucially important for preserving the natural integrity of your product, almost immediate crust freezing and preventing product weight loss.

HIGHER YIELD and faster investment return.

LISTERIA AND PATHOGEN FREE OPERATION - Today's "must" for food safety, provided by open design of all machinery parts by unique PIGO design.

OPERATOR FRIENDLY - All steps in the freezing process are designed to facilitate simple, fast and efficient operation and maintenance, **with NO DOWNTIME**.

For more information we invite you to visit our website **www.pigo.it** or simply send an e-mail to **info@pigo.it**.

Recalling philosophy "give the best to people who expect the best. (D.Z.)" PIGO srl invite you to give us a try. 



“HOW TO DEAL WITH COELIAC DISEASE AND WHAT PRECAUTIONS TO TAKE”



Tiziana Colombo

aka at
Nonnapaperina
Foodspecialist

Those who are diagnosed with coeliac disease are often overcome by anxiety. They wonder how difficult it will be to give up certain foods and if they'll be able to cope with the changes imposed by their condition. Rather than let oneself be overwhelmed by doubt, it's best to become familiar with some of the concepts related to this kind of inflammatory disease. Coeliac disease is actually more common than one might think, and can be kept under control through proper dietary management using alternative products and preparations.

This is precisely why, in order to best live with coeliac disease, it's important to follow practical guidelines and alternative recipes. This is the very approach which Tiziana Colombo, a passionate gourmet, has adopted on her website, *Nonnapaperina.it*, which has been a reference point for those who want to combat their coeliac disease and food intolerances with fun and alternative recipes for years.

Returning to our primary topic, what are the symptoms of coeliac disease?

Those with coeliac disease experience primarily gastrointestinal disturbances, like cramps, meteorism, and frequent evacuation. In order to be diagnosed a simple blood test is required, which specifically identifies the antibody response. Subsequently, a biopsy of the small intestine will



be performed in order to officially confirm the diagnosis.

While there may be a family predisposition for coeliac disease, this aspect doesn't necessarily result in one having the disorder.

Rather, it has been noticed that diet plays an important role. In this respect, fibre and protein-ba-



latest news - insights

sed foods (rather than carbohydrates) significantly reduce the probability that the disease will present itself.

There is no specific treatment and it isn't possible to be cured from coeliac disease. Nevertheless, one can live with this form of intolerance comfortably by eliminating gluten from his/her diet.

That's why it's important to eliminate products prepared with refined flour or obtained from grain derivatives. In addition to researching the topic online, we recommend working with a dietician and nutritionist in order to create a personalised diet that allows you to best live with your condition. It really won't be a huge sacrifice, as nature offers many gluten-free foods, some of which perfectly replace traditional flours that contain gluten.

In this way it's possible to prepare alternative bread, pasta, pizza, and sweets without too many sacrifices.

When it comes to eating out, gluten-free menus have become quite common, offering a great and entirely safe variety of options. Just be careful about potential contaminations and always read the labels. In this case the law is on your side and all restaurants have conformed to the current regulations.

In no way does coeliac disease have to affect your personal life.

In fact, this disease has become part of our cultural baggage and is treated in a totally normal way.

This makes it possible to fully enjoy every moment of your life, simply being more careful about what you put in your mouth.

With time, you'll realise that this disease not only makes you special, but also provides a way to see life from a different perspective.

www.nonnapaperina.it



NICOFRUIT: past, present and future

FRAGOLA MATERA®

NICOFRUIT is a registered trademark, owned and distributed by Frutthera Growers, an Italian company located in the Basilicata region, in the south of the Country.

This area is well known and is ideally suited to the growing of strawberries, grapes, kiwi and citrus. These fruits find their natural habitat here and are included in the most representative made-in-Italy productions.

Adopting the integrated production quality system means employing environmentally friendly production methods, protecting the health of both workers and consumers, making use of technical and economic features of the most modern production systems.

Special care to the environmental issues led the company to achieve an important result: the drastic reduction of pesticides, implementing specific natural technics and recurring to a massive use of antagonistic insects.

Natural protection of the plants gave a large contribution to get a "zero residues" pesticides for a lot of the fruit we produce.

Packaging represents another way to respect Earth. A totally brand new compostable packaging has been implemented in our production lines, nicofriendly, being entirely degradable and used as a natural fertilizer. Great help for the environment!

Frutthera adopts the integrated production quality system that consists of a combination of eco-friendly production methods, the protection of both workers and consumers' health, and technical



SPECIAL - SPECIAL

NICOFRUIT
ITALIAN FRUIT & VEGETABLE PRODUCERS

Full of Vitality



FRAGOLA
MATERA®

FOOD
processing



and economic requirements of the most modern production systems.

Storage and conditioning are controlled by a software cell that provides constant monitoring of the products' temperature and humidity, from the countryside until their final destination into targeted markets.

Monitoring the correct temperature during transport is guaranteed by small electronic recorders installed on the means of transport. NICOFRUIT products are traceable and trackable.

Thanks to a computerized system, the product will be followed through all the stages of processing, packaging and storage to the sale moment so that the consumer can trace back the

soil where the fruits and vegetables have grown.

Today FRUTTHERA Growers can count on more than 40 partners that cultivate more than 500 hectares of land.

On average, 160 seasonal workers are employed with a max of 350 in the most intense harvest periods.

The factory is 12.300 sqm (indoor and outdoor). It is newly built and it has been designed to guarantee the quality of the products.

Sustainable development is the only possible model for NICOFRUIT - solar panels are located on the storage and on the processing plants, and they are sufficient to feed most of the company's energy needs.

From the very beginning, dynamism and long-term outlook have allowed the company to reach internal large-scale retailers and important market spaces from South America to the Middle East.

Analysing percentage shares, the products are sold 50% in the foreign market, 30% in the internal retail and 20% in the general market.

Since commercial aggregation is a very important target to achieve, Frutthera joined one of the biggest Producers Organization in south Italy, with a total turnover > 70 mln €, Asso Fruit Italia, that is also a partner of Italia Ortofrutta, the biggest Italian National Union.

As a natural consequence of environmental awareness, Frutthera takes part in a lot of projects to achieve this target, organized by Universities, Research Institutions and many other reliable partners. 🏛️

www.nicofruit.it



NICOFRUIT[®]
ITALIAN FRUIT & VEGETABLE PRODUCERS
Full of Vitality[®]



nicofruit.it

Sustainable
agriculture



PROSEAL'S FAST AND FLEXIBLE SOLUTIONS prove invaluable for soft fruit growers

Prosecal's advanced tray sealing machines are helping growers meet ever-increasing demand for soft fruit - which has been particularly strong during the current pandemic - by providing high quality, flexible sealing solutions that also deliver on sustainability.

As soft fruit volumes continue to climb, and with the market for fruit grown in the UK now estimated to be worth over £670 million a year, manufacturers are looking for flexible solutions that can meet the demanding high-speed requirements driven by the seasons. Equally important is the need to

minimise the use of packaging materials without impacting on the effectiveness of the pack, in particular its ability to provide product protection to help reduce food waste.

Prosecal offers an extensive range of high-quality manual, semi-automatic and fully automatic tray sealers, designed to be flexible and incorporating a number of unique design features that maximise speeds and efficiencies.

In addition, Prosecal machines' two-minute rapid-tool-change means endless varieties of tray formats, materials and sizes can be sealed on one

machine, allowing users to quickly switch from one tray type to another.

"Our tray sealing machines offer fruit growers greater flexibility to seal different designs and sizes of trays with efficiency and accuracy," explains Prosecal sales director Tony Burgess. "This, combined with our innovative technologies and production lead times, make us a world leader in tray sealing soft fruits.

"ProMotion™ our continuous infeed technology, for example, has the potential to increase the speed of a tray sealer by up to 30%, while creating





calm machine operations which ensure a smoother, more stable journey to the sealing station.

This is particularly beneficial to delicate produce, such as soft fruit."

Proseal also manufactures a diverse and customisable line of intelligent conveyor systems, designed to create ultimate line control and optimisation and therefore perfect for the fast-moving soft fruit industry.

The company has pioneered several important sustainability initiatives

throughout its 23 years. Proseal was the driving force behind the replacement of traditional clam-shell punnets with top film sealed varieties, which has now become commonplace in soft fruit markets across Europe and now North America, helping to minimise plastic usage by around 45% in most cases.

More recently, the company has been at the forefront of the introduction of new recyclable and compostable trays and film for fruit that can further reduce plastic usage by as much as 96%.

"Proseal continues to strive to develop the most effective and sustainable sealing solutions for its customers," concludes Tony Burgess.

"We are proud of the many innovations we have developed for the effective and efficient tray sealing of soft fruit. And we will continue to develop the appropriate technologies to help support sustainable solutions that deliver quality."

Proseal is part of the JBT Corporation family, a leading global technology solutions provider to high-value segments of the food processing industry, committed to providing a service that surpasses customer expectations. 🏢



www.proseal.com
www.jbtc.com



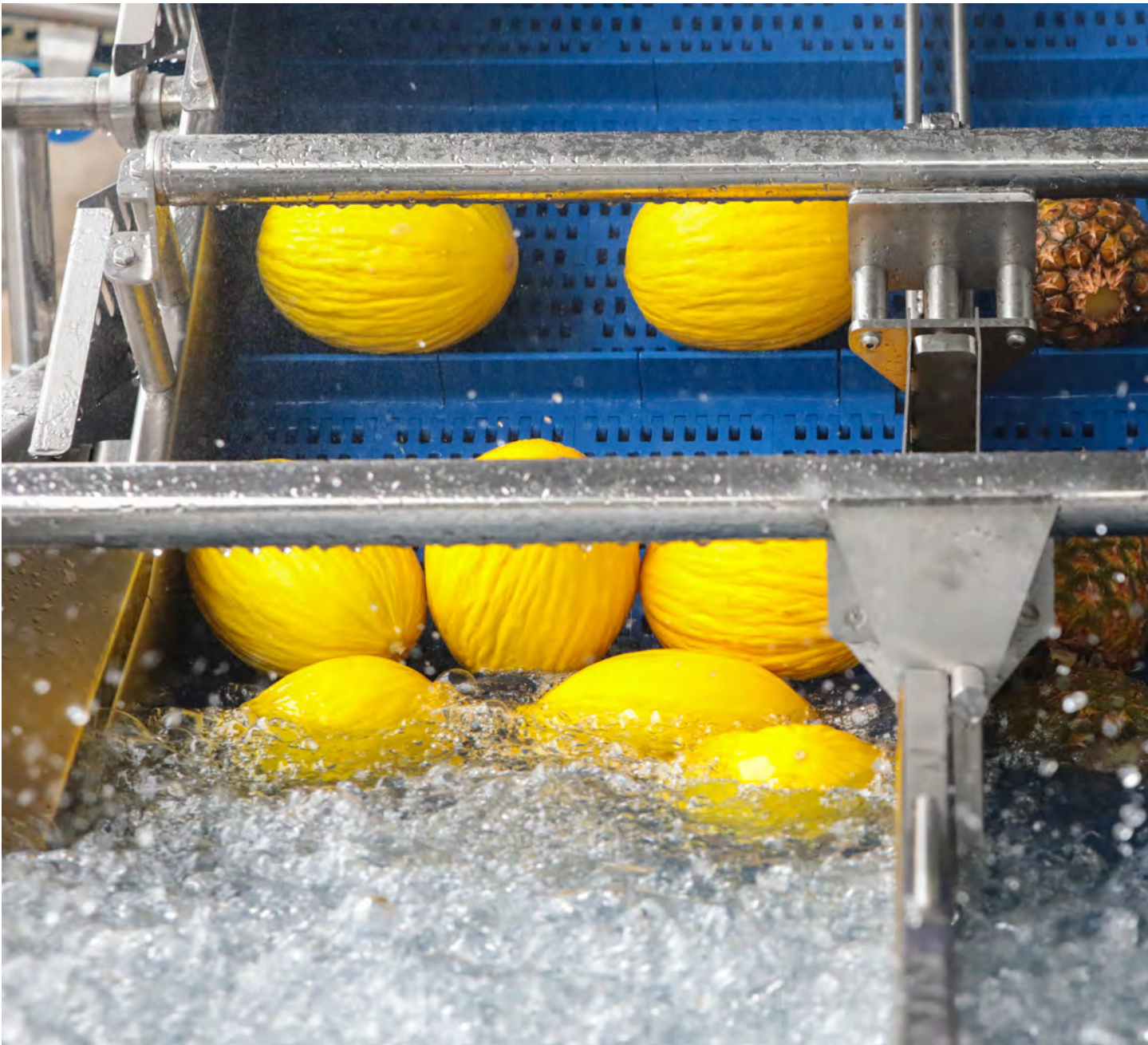
PND SRL, THE ORIGINAL ONE: beware of clumsy attempts of imitation!

“The satisfaction of seeing that companies in our sector with many years of experience use images and videos of our creations covered by copyright and try in vain to

replicate our technological capacity is priceless!

For everything else there is PND, the real one... **BEWARE OF CLUMSY ATTEMPTS OF IMITATION!”**

Specialisation, customer care, continuous innovation, **custom technology** and an extensive knowledge of **international markets** are just some of the features that have enabled **PND srl** to be among



When choosing one of the 18 semi-automatic machines, manual or automatic ones in the PND catalogue, you are choosing a standard machine that can be tailored to your needs.

the leading companies in the world in manufacturing and sale of **fruit processing machinery**.

This **experience** has, in **22 years of activity**, allowed **PND**

to bring **continuous improvements to the machinery** in its extensive catalogue, which includes advanced solutions for processing of **pears, apples, kiwis, oranges, grapefruits, lemons, pine-**

apples, lemons, mangoes, strawberries and peaches, with all possible variations in order to meet the needs of companies processing fresh products for **Fruit Fresh Cut, canning industry** (jam and canned peaches in syrup), and **dried and frozen** sectors.

One example is the **PL6M, a semi-automatic peeler** with six processing heads, initially dedicated to peeling **mango: nowadays it is also able to peel kiwi**.

The advantages of PL6M, that is: adjusting the peel thickness, managing the production speed and the rotation of the fruit through an inverter, associated with the possibility of **processing fruits of different calibre without any adjustment and with fast maintenance**, are now available for both mango and kiwi.

When choosing one of the **18 semi-automatic machines, manual or automatic ones** in the PND catalogue, you are choosing a standard machine that can be tailored to your needs.

One example is the new **coring - ring machine mod. DRR**, which is capable of coring and slicing **apples and peaches**, with a minimum round cut thickness: 3 mm. The loading plate rotates at regular steps, so that when the plate stops, the three work operations of manual loading, coring and slicing are carried out at the same time.

The loading plate rotates at regular steps, speed chosen by the customer.





When the plate stops, the three operations are carried out at the same time: manual loading, coring and cutting in ring.

Relying on PND means having **personalized assistance anywhere** with specialized technicians who can speak several languages and count on-site support for offices in Europe, the United States, Canada, Brazil, Chile, Argentina, Peru, South Korea, Egypt, Vietnam, Tanza-

nia, Australia, China, Turkey, United Arab Emirates and Qatar.

In fact, the human element is one of the main resources of this company where mechanics and technique are its strengths.

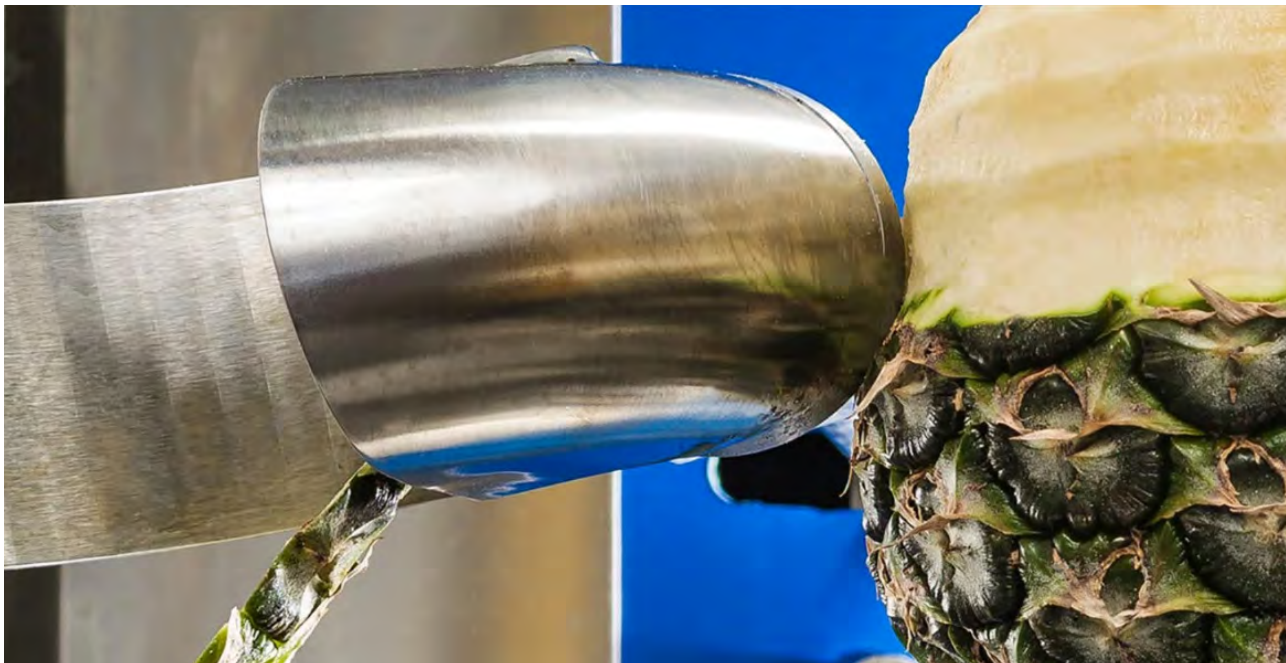
Despite the widespread presence of PND representatives in several continents, when there is a new machine to be installed, **there is always an expert who comes from**

the Head Office and follows the process until it is completed.

An assumption of responsibility that is a **guarantee for the client**, who knows, from the first moment, that he will be constantly assisted by first promotion until the equipment is in run.

Constant care to the needs of its customers is a **winning strategy** that allows continuous updating in the field and the response to the needs





of its customers as it is able to offer customized processing lines.

The chance of a continuously confront with customers from all over the

World offers the opportunity for PND technicians to face new challenges and understand for themselves what their customers need.

At the website in addition to viewing

the product catalogue, it is also possible to consult the calendar of international trade fairs. 🏛️

www.pndsrl.it



Equipment and lines for the integrated processing of FRUIT and VEGETABLES

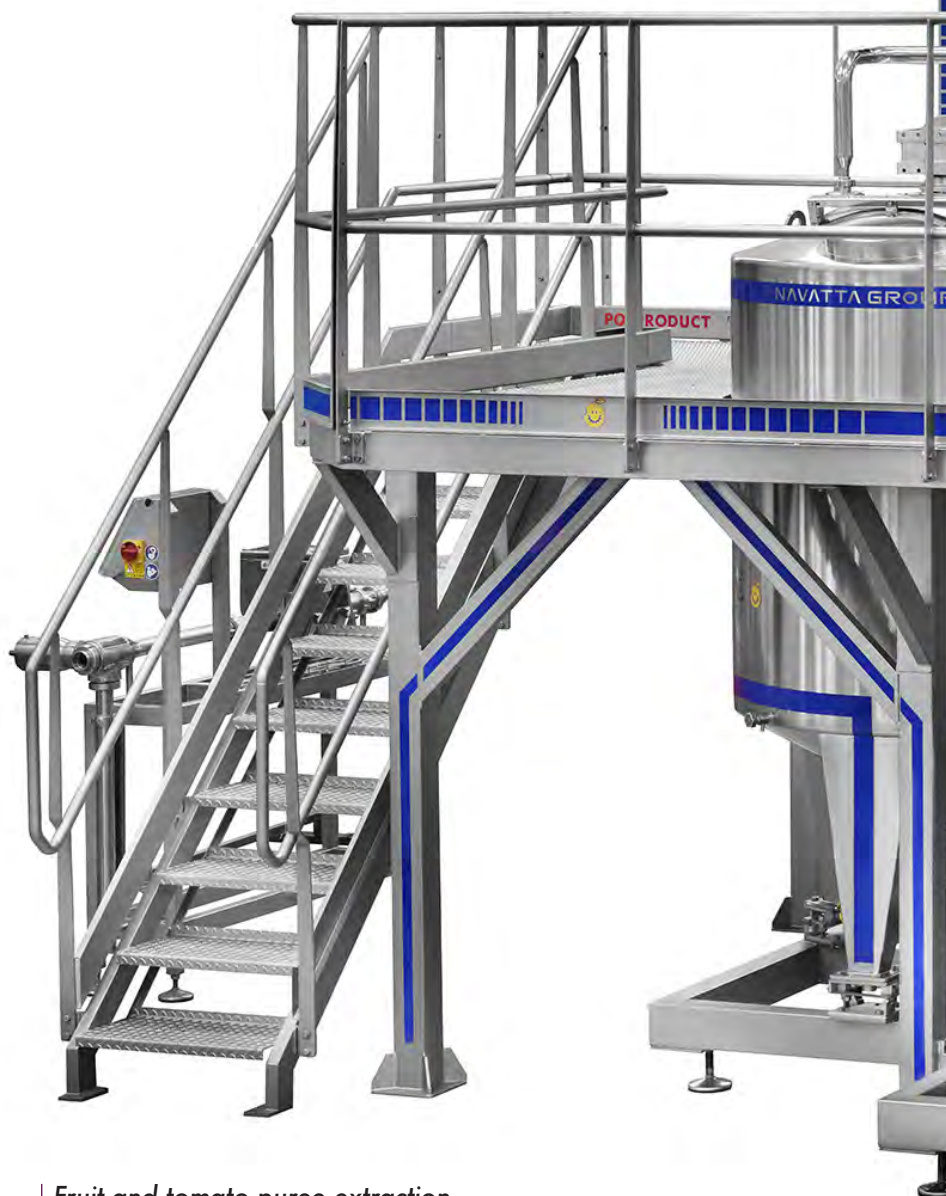
The company Navatta, founded by Mr. Giuseppe Navatta in 1983, produces and installs fruit and vegetable processing lines and boasts references across the globe.

Navatta, the global supplier of integrated fruit & vegetables processing equipment and lines, providing well proven and innovative solutions for a full range of plants also thanks to the numerous companies' acquisitions over the years, such as Dall'Argine e Ghiretti in 2001, a 40-year-old company world famous for rotary can pasteurizers and tomato pulping lines; Mova, in 2010, with extensive experience in bins handling, bins and drums emptying, palletizers and de-palletizers, washing systems; Metro International, in 2012, leader in fruit and vegetables processing, boasting international patents for juice and puree extraction, concentration plants and thermal treatment; Ghizzoni Ettore, in 2012, specialized in special batch plants for ketchup, sauces and jams.

MANUFACTURING RANGE

NAVATTA GROUP manufactures and commissions Processing Lines, Systems, Equipment for Fruit, Tomato, Vegetables for:

- peeled / diced / crushed tomatoes, tomato sauces and purees, tomato paste, all filled into any kind of package or in aseptic;
- diced, puree, juices (single strength or concentrated) from Mediterranean / tropical fruit, all filled into any kind of package or in aseptic;



Fruit and tomato puree extraction system complete with juice recovery tanks

Navatta, the global supplier of integrated fruit&vegetables processing equipment and lines, providing well proven and innovative solutions for a full range of plants.





Single head aseptic filler Webzero for web small bags 3-5-10-20 liters automatic loading system - no operator needed. Semiautomatic filling of 220 bags in drum

- Fruit crushing lines from IQF, frozen blocks and frozen drums
- high yield PATENTED fruit puree cold extraction, fruit purees / juices equalized in aseptic.
- Wide range of evaporators to produce tomato paste Mediterranean and tropical fruit concentrate.
- Aseptic sterilizers
- Aseptic fillers for spout bags/ spout-less Bag-in-Box 3 – 20 liters, Bag-in-Drum 220 liters, Bin-in-Box / IBCs 1.000 – 1.500 liters;
- "all-in-one" pasteurizer / cooler spirals
- formulated products productions (jam, ketchup, sauces, drinks) starting from components unloading to dosing, mixing, mechanical / thermal stabilizing, to filling into any kind of package or into aseptic;
- processing pilot plants;
- vegetable processing as receiving, rehydration, cooking, grilling

Navatta Group's headquarter and the two production units are located in Pilastro di Langhirano, Parma, with a total production area of 10,000 square meters. A new area of 10,000 square meters has recently been purchased and is ready for the third processing unit to be built.

VISION: Passion is the factor that drives us to higher targets, in terms of technology, products and services.

MISSION: To constantly increase Customers' satisfaction and fidelity. 🏠

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Wrapping up quality with TAILORED PACKAGING SOLUTIONS

Dolcezze Savini is a company based in Tuscany that for three generations has passionately been working in the art of bread and pastry making, using old processing techniques and carefully selected ingredients. From its factories in Valdarno, for over fifty years Dolce-

zze Savini has been baking high-quality products such as the famous bread cooked in a wood-burning oven, made with Tuscan wheat.

In addition to the different varieties of bread and pizza made with different types of flour, the Valdarno brand bo-



asts a rich pastry production that also includes the typical traditional pastries from Siena produced by the historic company Fiore 1827, acquired by Dolcezze Savini in 2017.

Among these specialities there are three important IGP products: two of them are from Siena and they are Panforte and Ricciarelli, while the almond biscuits named Cantuccini are linked to the Tuscan territory.

For a long time, Dolcezze Savini has focused its activity on a production that pays particular attention to the importance of some elements such as natural ingredients, reduced gluten products,

Dolcezze Savini's artisanship meets Tecno Pack's technological innovation



Tecno Pack
PACKAGING MACHINES

IFP
PACKAGING

SP
general system pack

palm oil-free products and a clearer labelling system.

The current size of the company, which counts more than a hundred employees in total, has not affected the original characteristics of Dolcezze Savini, confirming its vocation for craftsmanship, its dedication to quality

and its desire to be at the forefront of the technology used in its factories.

In this regard, in 2019 the company built a new production plant of over 4,000 meters with the clear intention of investing in technological innovation. Alongside the integration of two new semi-automatic lines for the

production of partially baked bread, the new investment has opened more space for artisanal production with the strengthening of the production of handmade pizza dough. The company has also developed a complete electronic management system, making it part of the world of industry



4.0. This innovation process has found full achievement in the strengthening of its packaging sector, for which Dolcette Savini has called upon the group Tecno Pack, a leading company in the supply of packaging technologies.

For over 30 years Tecno Pack has been designing, manufacturing and distributing horizontal packaging machines and automatic packaging systems for the food industry and other sectors. Tecno Pack is a group of companies including Tecno Pack, IFP

and GSP. Based in Schio, in the province of Vicenza, Tecno Pack stands out for being a pioneer and innovator in the packaging industry, developing cutting-edge solutions, increasing the digitalization of machines and plants, offering its customers excellent results with limited investments.

The partnership between Tecno Pack and Dolcette Savini has resulted in the development of three packaging lines, specifically designed by the group for the bread sector of the Tu-

scan company. These, in detail, are the new packaging lines implemented in the production system of Dolcette Savini:

- Monopiega Diamond 650 wrapper. This is an innovative and high-performance shrink wrapping machine.





ne, designed to wrap small, medium and large-sized items as well as thin solid products;

- Flow pack ATM FP 025 line suitable for pizza dough and ideal for "pinsa" (a traditional pizza made with an ancient Roman recipe). This horizontal packaging machine is specific for modified atmosphere packaging thanks to the tight packs granted by the sealing system. It is the most suitable flow-wrapper when aesthetically good-looking packages with high-quality side gussets and thick wrapping materials are required;
- The FP 015 line for sandwiches. This horizontal pillow pack wrapper

has a particular cantilevered frame with easy accessibility that helps sanitation, both for hygienic and maintenance reasons, guaranteeing full safety at work.

At the same time, the historical production carried out by Fiore 1827 was also implemented with the purchase of a vertical + multi-head packaging machine to improve the type of packaging and achieve greater production efficiency.

With the selection of these tailor-made solutions, designed according to the production needs of Dolcezze Savini, the Tecno Pack

group not only proves to be a leading manufacturer in the sector of packaging machines and systems but also confirms to be the ideal partner to integrate new technologies created as "tailor-made" solutions according to specific automation requirements.

The precious and fruitful collaboration between the Tecno Pack group and Dolcezze Savini represents the utmost expression of the most recent technological innovation combined with traditional working procedures for the production of a great variety of quality products with an authentic artisanal flavour. [🏠](#)



SELF-ADHESIVE LABELS: all from a single source

Sappi to showcase its new range of high-quality label and silicone base papers at Labelexpo

Label Papers



Silicone Base Papers



Sappi, a leading manufacturer of packaging and speciality papers, will be introducing its extensive range of facestock papers and silicone base papers as well as wet-glue label papers at the upcoming Labelexpo Europe in Brussels from 26 to 29 April 2022.

Visitors to the Sappi stand in Hall 5, Stand B 13 will have the opportunity to experience the company's new glassine, CCK and label papers.

As an independent paper manufacturer, Sappi offers its customers in the self-adhesive label sector all papers from a single source.

- Enhanced formulation of glassine papers from the Silco product family.
- New Sol CN and Sol LF CCK papers with excellent flatness
- The new semi-gloss Parade Label SG facestock paper
- Parade Label Pro for non-wet-strength wet-glue labels
- High availability and fast delivery of label papers thanks to portfolio expansion at the Gratkorn site

Processors, printers and brand manufacturers can always count on Sappi as a provider of broad-based solutions who can meet their requirements worldwide – in line with the “everything from a single

source” maxim and in consistent premium quality. This also applies to the company's broad portfolio of silicone base and label papers.

With its many innovations and as an independent provider, Sappi offers its customers even more options in the areas of self-adhesive and wet-glue labels.

Michael Bethge, Sales Director Speciality Papers at Sappi Europe confirms: “We are looking forward to enjoying face-to-face discussions and consulting face to face, and to presenting our new products at our Labelexpo exhibition stand.”



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New silicone base papers for greater efficiency

Sappi's Glassine and CCK silicone base papers offer exceptional siliconisation properties as well as easy and efficient processing. They are used as release liners for a variety of self-adhesive applications such as self-adhesive labels, graphic applications, adhesive tapes and office supplies.

To meet the high expectations of its customers, Sappi recently improved the entire glassine paper formulations of its Silco product family. These include the supercalendered Silco Label and Silco Tape BS papers as well as Silco Process Liner BS. These have been successfully produced for decades at Sappi's Condino mill in Italy.

Right on time for the trade fair, Sappi will be introducing two new CCK papers to complement the Sol product family. With Sol CN, Sappi is presenting a one-side double-coated CCK paper designed for office materials such as self-adhesive labels or adhesive tapes. The paper is available in a grammage of 55g/m². It features characteristics such as high strength, a remarkably smooth surface and low silicone consumption, as well as easy, cost-efficient handling and excellent lay-flat properties.

The second CCK launch at Labelexpo is the Sol LF paper with extraordinary flatness. Available in 120 and 135 g/m² basis weights, this paper features high strength, low silicone consumption, a smooth surface and cost-efficient processability. Moreover, its excellent lay-flat properties with almost imperceptible dimensional change in the cross direction make it the perfect material for self-adhesive films in the graphic arts sector.

Outstanding label papers


The new Parade Label SG facstock paper boasts first-class printing

and finishing properties. Launched in autumn 2021, this one-side coated, semi-gloss paper for self-adhesive label applications excels with its outstanding printability, opacity and stiffness, as well as its excellent further processing capabilities. It is ideally suited as a self-adhesive label for general packaging, transport packaging, disposable bottles and containers.

Parade Label Pro, launched in mid-2021, has been very well received in the market. The glossy, one-side double-coated wet-glue label paper features an exceptionally smooth surface as well as a high degree of whiteness, while ensuring excellent printing and finishing results. Visitors to Labelexpo will experience the paper – designed for challenging labels in the food, beverage and consumer goods sectors – as the perfect choice to achieve distinctive visual impact and product differentiation in retail environments. Selected references from around the world will be presented to visitors at the stand.

Targeted focus on availability and fast delivery

To ensure 100% availability and fast delivery of its label papers, Sappi has secured reliable production and seamless supply chains. Whereas label papers in Europe were previously only produced in Alfeld, Germany, in Carmignano, Italy, and in the USA at the Somerset site, Sappi now offers an ideal addition with its plant in Gratkorn, Austria. The state-of-the-art production facilities, covering everything from paper machines to sizing equipment, and many years of ex-

pertise in the production of coated papers are the best prerequisites to ensure first-class products. Shorter production cycles enable Sappi to always guarantee high availability and fast delivery of its premium label papers. 

About Sappi

Sappi is a leading global provider of sustainable woodfibre products and solutions, in the fields of dissolving pulp, printing papers, packaging and speciality papers, casting and release papers, biomaterials and bio-energy. As a company that relies on renewable natural resources, sustainability is at our core. Sappi European mills hold chain of custody certifications under the Forest Stewardship Council™ (FSC™ C015022) and/or the Programme for the Endorsement of Forest Certification™ (PEFC/07-32-76) systems. Our papers are produced in mills accredited with ISO 9001, ISO 14001, ISO 50 001 and OHSAS 18001 certification. We have EMAS registration at 5 of our 10 mills in Europe.

Sappi Europe is a division of Sappi Limited (JSE), headquartered in Johannesburg, South Africa, with 12,500 employees and 19 production facilities on three continents in nine countries, 37 sales offices globally, and customers in over 150 countries around the world. Learn more about Sappi at www.sappi.com

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ifp
PACKAGING

MAKRO LABELLING: technology in evolution on the small and large scale



Modularity, flexibility and practicality are key concepts in a company whose strong point is technological innovation and development. This is what the market wants and this is what customers get from the Italian based Makro Labelling, international standard setter for industrial labellers in the beverages, food, detergent and pharmaceutical sectors. The thirty years' experience of its founders, a team of 90 people, a dense and well-organised sales network consisting of the branch offices Makro UK for the United Kingdom and Makro North America in Saint-Philippe (Montreal) for Canada and the USA, together with agents and representatives in the most important countries throughout the world, plus an impeccable assistance and spare parts service guarantee satisfaction of every labelling

need and constant expansion on all the most important international markets.

A range of labellers for production speeds of 1,500 to 50,000 b/h

The range includes labellers able to process from 1,500 to 50,000 bottles per hour, applying up to five labels per bottle and available in wet glue, hot melt, self-adhesive and combined versions. For companies with limited production requirements, the **MAK 01, MAK 02 and MAK 1** labellers provide speeds of up to 12,000 b/h with mechanical or electronic rotation of the bottle plates. With special applications and able to cope with production speeds of up to 50,000 b/h, the **MAK 2, 3, 4, 5, 6, 7 and 8** labellers, on the other

hand, satisfy the needs of medium to large companies. The range includes a high speed self-adhesive labeller with reel winders and non-stop system enabling production to continue at maximum speed even during reel changes and a combined labeller to apply the fiscal guarantee seal.

For the high volume PET market, such as the water and soft drinks sector, Makro Labelling has developed the **MAK Roll Feed** series of rotary labellers. The 6,000 b/h to 40,000 b/h production speed and use of wrap-round plastic labels on a reel with hot melt application guarantee maximum economic benefits in the production process. The modularity of the machine also allows the roll feed unit to be replaced with a hot melt unit for pre-cut, wet glue or self-adhesive labels. Again designed for the water



and fitted with a line scan camera. Thanks to a special, patented paper delivery system, the new **MAK AHS2** self-adhesive labelling module responds to the need for faster, more precise machines. It guarantees a linear speed of 100 metres a minute at a label pitch of 20 mm.

The technical and R&D departments monitor the market closely to understand its demands and anticipate them with new solutions able to offer efficiency, speed and a concrete response to specific labelling needs. Latest developments include the prototype of **C Leap**, a new, truly revolutionary labelling system, and two new inspection systems - **M.A.I.A.** (Makro Advanced In-line Analysis) and **A.L.I.C.E.** (Advanced Label Inspection and Control Environment) - which guarantee high performance, less production rejects and the highest finished product quality. 🏢

www.makrolabelling.it



and soft drinks market, but needing between 6,000 and 16,000 b/h, the new series of **MAKLINE Roll Feed** labellers features motorised axles and brushless motors to minimise costs while maintaining meticulous labelling quality.

The new **double-station self-adhesive MAKLINE** is, on the other hand, designed for the beverages, food, detergent and pharmaceutical sectors. It packages large and small containers and offers the same high

quality labelling as a rotary machine. In common with the entire Makro range, the MAKLINE is fitted with the **Vision Control** system to verify the quality and correctness of the packaging and manage rejects.

The **Follower** optical guide system (an exclusive patent) enables the bottles to be aligned for application of the labels in precise positions with respect to a reference on the bottle and reduces format change times and costs. It is available in carbon fibre





THE **PUMA** MANIFESTO

working together to the end of packaging as
an environmental issue worldwide





THE PUMA MANIFESTO

WHAT IS PUMA?

PUMA is the collective effort of the packaging business community to end packaging as an environmental issue worldwide.

WHAT IS PACKAGING?

Packaging is the activity of temporarily integrating an external function and a product to enable the use of the product.



Waste essentially is an unwanted by-product of a (manufacturing) process



WHAT IS NVC?

NVC Netherlands Packaging Centre was established in 1953 to stimulate the knowledge and expertise in packaging. Since then, we have grown into an association with over 500 member companies in the Netherlands and abroad. The packing-filling (FMCG) industry, packaging manufacturers, retailers, manufacturers of packaging machines, wholesalers, recyclers, designers, even a number of financial institutions: they all are members of the large and vital NVC business family. The NVC membership, innovation projects (like PUMA), information services and education programme stimulate the continuous improvement of packaging worldwide.

WHEN IS PACKAGING AN ENVIRONMENTAL ISSUE?

Environmental issues are harmful effects of human activity on the biophysical environment. Waste essentially is an unwanted by-product of a (manufacturing) process. The activity of packaging creates environmental issues when the resources involved, either wanted or unwanted ('waste'), constitute an environmental issue.



Environmental (planetary) problems caused by us, People, can – and will – also be solved by us, People



WHY DO WE HAVE TO ACT NOW?

Packaging has been with mankind already since ancient times in some moderate form, but the 20th century has brought a dramatic acceleration. The world 'does it' now at least 320,000 times per second and this is causing substantial environmental concerns. Packaging will only keep it's societal licence to operate if these concerns are properly addressed.

ABOUT THE MANIFESTO

This Manifesto outlines the way forward to end packaging as an environmental issue worldwide. It consists of the PUMA Model to describe the essentials of the packaging activity and its relation with the resources involved. A conceptual roadmap is presented to be applied by every individual actor and the world packaging community as a whole in a self-organising manner. Key elements are open-minded sharing of reliable information, continuous knowledge development and truly holistic innovation. Environmental planetary problems caused by us, People can – and will - also be solved by us, People.



Packaging will only keep it's societal licence to operate if the environmental concerns are properly addressed



THE PUMA MODEL

THE VOCABULARY

First, PUMA defines the activity of packaging: temporarily integrating an external function and a product to enable the use of the product. There is no Law prescribing that we must do it (packaging). For instance in recorded music, streaming services like Spotify show that we can live without. If we decide to engage in the activity of packaging, the pack-use-empty (verb) spiral P-U-E is a consequence. This results in emptied packs later in time and at a different location. Waste is defined as an un-wanted effect of a (human) activity. Consequently a collect-control step must be built-in, followed by a postulated backend (BE) process step. Mirror-wise, a frontend (FE) step is required to obtain the necessary packaging materials. Philosophically and thermodynamically and in terms of information science, the situation at the backend is fundamentally different from that at the frontend. Both processes may be described in terms of converting, though.

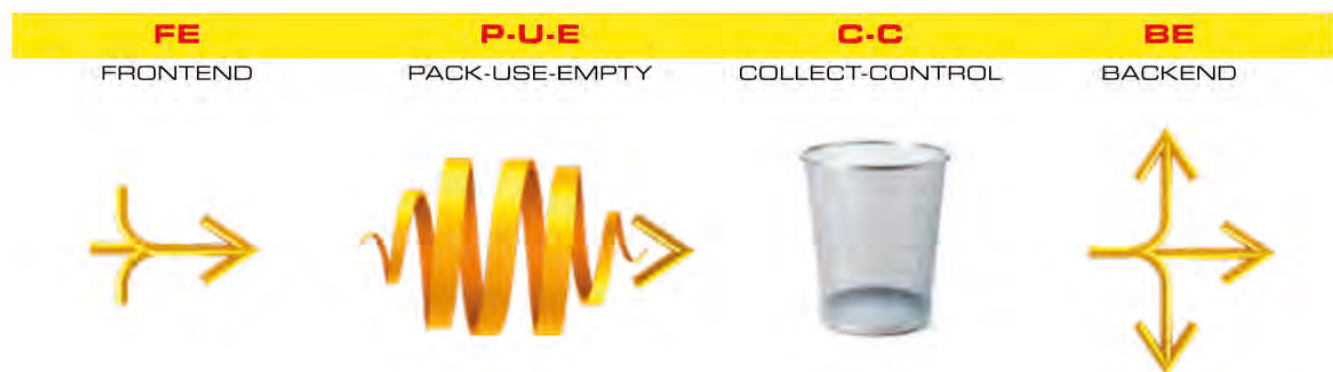


Holistic innovation is needed as we are all interconnected in packaging



ADDRESSING THE ENVIRONMENTAL ISSUES

Environmental issues may come and go, depending on the many different interactions between our human activity and planet earth. Whereas the PUMA model remains unchanged, its application to environmental issues may vary in the course of time. In this first edition of the PUMA Manifesto we focus on litter, CO₂, and (inadequate) pack optimisation. These three issues are deemed to be the most important in the current environmental packaging debate. The resulting table serves as the basis for addressing (future) environmental issues adequately.



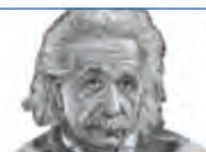
	FE	P-U-E	C-C	BE
Litter			✓	
CO ₂	✓			✓
Inadequate pack optimisation Product Packaging material + Total environmental impact				
Future issues	✓	✓	✓	✓



SUPPORTING PUMA



Success comes from deeper understanding and supplementing earlier insights



I SUPPORT THE PUMA MANIFESTO AND HEREBY PLEDGE TO:

- ✓ Reference the PUMA Model as an insightful source to address the activity of packaging worldwide
- ✓ Apply the vocabulary as used in the PUMA Model and positively contribute to possible improvements
- ✓ Contribute to the PUMA annual plenary meetings to the best of my capabilities
- ✓ Make my decisions and base my opinions on the state-of-the-art in packaging (i.e. on reliable, verifiable and up-to-date information) and using all information and knowledge that is brought to my attention
- ✓ Stimulate continuous education and training of those with a responsibility within the activity of packaging
- ✓ Contribute to helping facilitate all phases of PUMA (FE, P-U-E, C-C, BE)



*Everything flows and so does the activity of packaging;
we can put a clock back, but not the time*



MY DETAILS:

Company name

Initials and surname

Date of birth

Address

Phone

E-mail

For an overview of recent references and background information worldwide please visit www.nvc.nl/puma



FreshSAFE packaging concept for equilibrium atmosphere packs

EXTENDED SHELF LIFE for delicate natural products

Fruit and vegetables continue to live after harvesting. If the product is to remain fresh and appetising in the pack up to the point of consumption, the metabolic processes must be controlled by an innovative method.

Thanks to the FreshSAFE packaging system from MULTIVAC, there is a method of producing equilibrium atmosphere (EMAP) packs, which optimises the oxygen content in the packs in a continuous, natural and sustainable way. Les Maraîchers d'Armor, a cooperative in the French region of Brittany, uses the technology to pack its white beans, the so-called "Cocos de Paimpol", in trays under modified atmosphere, enabling the shelf life and quality of the product to be preserved for as long as possible.

Les Maraîchers d'Armor is a cooperative situated in the heart of the vegetable growing area of Les Côtes d'Armor.

More than 420 gardeners, operating in the north west corner of Brittany, cultivate over 80 types of vegetables as well as strawberries and other fruits, and the annual production quantity is around 175,000 tons. In conjunction with two other cooperatives in Brittany, the products are marketed under the well-known label of "Prince de Bretagne".

Cocos de Paimpol – well-loved and very delicate

Around 200 producers concentrate on the cultivation and propagation of white beans, which are marketed un-



der the name of "Cocos de Paimpol". These yellow and violet-flecked pulses with their egg-shaped seeds and delicately melting "bite" find their ideal growing conditions in the area between Paimpol and Tréguier. In 1998 the "Cocos de Paimpol" was the first fresh vegetable and the first Breton product to receive a special designation of origin, and several years later this became a protected product name.

"In order to be able to satisfy the demand from consumers for a ready to cook, "all-in-one" product, the idea was conceived in 2020 of packaging the Paimpol beans under modified atmosphere," explains Florian Josse, who is responsible for new product innovations at the cooperative. "The challenge was to find a reliable packaging concept for a semi-dry pro-

duct, which alters extremely rapidly after harvesting."

The solution: FreshSAFE. This process involves pre-perforated films, or films perforated mechanically on the MULTIVAC packaging machine itself, which ensure that a controlled oxygen permeability is achieved, and this can be matched exactly to the specific respiration characteristics of the particular fresh product.

The objective is always to maintain the most beneficial concentration of oxygen and carbon dioxide for the particular product.

This equilibrium atmosphere (EMAP) is achieved through the interaction between the respiration of the product and the required permeability of the film. The FreshSAFE packaging system

can be produced on thermoforming packaging machines and traysealers as well as chamber machines.

T 600 traysealer with FreshSAFE microperforation system

At Les Maraîchers d'Armor the T 600 is used, the smallest fully automatic MULTI-VAC traysealer that can be integrated into a line. This versatile and scalable model is suitable for packing small and medium-sized batches very flexibly, and it is particularly easy to operate thanks to its IPC06 machine control with touchscreen. The T 600 is equipped with the MULTIVAC FreshSAFE microperforation system, which automatically perforates the upper web during the packaging process. Thanks to the cost-effective needle perforation system, all current upper webs can be perforated to the individual permeability that is required.

In order to meet the requirements of Les Maraîchers d'Armor, the packaging line also included a TDS 300 denester from TVI, as well as a MDC drag chain in-feed system and direct web printer from MULTIVAC. The packs themselves consist of a board tray and

a transparent upper web, so that the consumer can see the freshness of the product at a glance.

Significantly extended shelf life thanks to FreshSAFE

Due to the FreshSAFE microperforation system, the product retains all its sensory characteristics in the pack. It remains appetising as well as fresh, and its shelf life is significantly longer than products packed in other types

of packaging. This means that there is considerably more leeway in the supply chain, and this gives processors like Les Maraîchers d'Armor a better opportunity to market their high-quality but delicate natural products 🏡

www.multivac.com

MULTIVAC



An approach to innovative cross-flow filtration with VLS TECHNOLOGIES

The markets of wine, beer, spirits, juices and soft drinks are constantly evolving, and the technological solutions adopted for the filtration of liquids must keep up with innovation and growth.

VLS Technologies represents worldwide a single reference point for the client for both the aspect of filtration and more complex needs that involve the whole process of liquid treatment: that is made possible by the production plant in San Zenone degli Ezze- lini in the Province of Treviso, northeast Italy, as well as by an established worldwide network of agents, authorized reselling and assistance.

In addition to traditional applications, as sheet filters or pressure leaf filters, the focus of VLS Technologies is the development of innovative solutions as cross-flow filtration systems and reverse osmosis.

Innovative technologies guarantee a number of advantages. For example in cross-flow filtration the liquid is pushed by means of pressure through the particular pores of a membrane: thanks to this system the clients are able to improve the obtained quantity of product, decreasing energy consumption and production costs, for example avoiding the usage of clarifiers and adjuvants.

Among technologies based on cross-flow filtration, the most valued are Unico and Lees-stop.

Unico filter is a solution designed for small/medium manufacturers that need to filter their products (wines and





lees) with a single solution, obtaining a filtered product of excellent quality with a turbidity below 1 NTU.

That is why VLS Technologies has created Unico filtration system: thanks to our filter it becomes possible getting a good filtration of the product and reducing the microbiological flora; all of this by saving all the organoleptic characteristics of the product.

The filtering media can stand repeated regenerations with warm water and detergents: this means a longer lifespan.

Unico has recently won the "Innovation Challenge Lucio Mastroberardino" at SIMEI Drinktec 2017.

Lees-stop, winner of the New Technology Award at SIMEI 2015, is a solution meant for filtering products with high content in solids that replaces the traditional polymeric membranes of the cross flow filters with sinterized stainless steel membranes.

Thanks to several tests, we have verified that this kind of material perfectly fits the cross flow filtration of "difficult" products with about 70% of content in solids.

VLS Technologies, thanks to its 35-year experience in the market, can

guarantee a dynamic and flexible approach, realizing long-term partnerships with both medium and small production companies as well as with major brands worldwide. 🏛️

www.vlstechologies.it



YOUR EXPERIENCE. OUR TECHNOLOGY.



agenziatecnodue.com



Steam and superheated water boilers for food industry

Whatever your specific sector in the food and beverage industry, your treasure is the recipe and results you've achieved after years of research and innovation, searching for the best ingredients and processes. Considering the way you transfer heat to your product, how you clean, how you sterilize, will all make the difference and contribute to achieve the result you are looking for. For 60 years we have worked to innovate and develop our solutions for the food and beverage industry, with an holistic approach which includes the knowledge of your specific requirements. Your experience. Our technology. Amazing results.



icicaldaie.com

RUMMO is born again thanks to unique partners

The combination of multiple skills gives rise to customized and efficient projects. ICI Caldaie proves to be a precious partner for energy efficiency paths

In October 2015, severe weather conditions hit the Sannio area in the Campania region. The heavy rainfall caused the overflowing of three rivers – Calore, Tammaro and Sabato –, covering the industrial area of Ponte Valentino with water and mud. The storm violently hit the historic Rummo pasta factory, destroying the machinery, damaging the raw materials and stopping production.

Despite the irreversible damages, the management never considered the idea of shutting down. Thanks to the determination of its employees, about 150, and with the help of the Web, a spontaneous campaign of solidarity began on the social networks, prompting consumers and supermarkets all over Italy to buy Rummo products.

#SAVERUMMO IS ICI CALDAIE'S CONTRIBUTION

The hashtag #saveRummo went viral and the brand made fun of the tragedy with the slogan "water never softened us". Rummo is a family-run business that has been producing durum wheat semolina pasta since 1846, exporting it to 45 countries all over the world and continuing to do so for a long time thanks to both the management and employees' hard work and passionate commitment. Other invaluable protagonists in this history of rebirth are the many partners with whom the pasta factory works – qualified and reliable professionals who have supported the cause from the very beginning. Among them is the Venetian company ICI Caldaie, which has contributed to the energetic improvement of the fac-

tory with its expertise.

The beginning of a successful collaboration

The year after the flood, Rummo decided to improve the modernization of its plants with the desire to significantly reduce primary energy consumption yet maintaining its high-quality standards.

To achieve this ambitious goal, Rummo decided to turn to an important ESCO (Energy Service Company) operating in the industrial sector, S4E System (www.s4esystem.it). This company had been working for some time with ICI Caldaie, an Italian boilers and steam generators manufacturer





based in Verona. S4E System soon promoted the beginning of a wider collaboration between Rummo and ICI Caldaie, being it a company at the forefront in the Italian scene. Since the beginning of the new century, ICI Caldaie has been working on the research of possible alternatives in the energy sector, aiming at reducing carbon dioxide production and building effectively sustainable plants.

To do so, ICI Caldaie has always relied on the collaboration with national and international partners, including research centres, universities and manufacturing companies, and on innovative methods (including design thinking, a person-centred process aimed at solving complex problems). ICI Caldaie, in fact, strongly believes that only through a multifaceted and versatile know-how it is possible to create a truly efficient and functional system. In

the specific case of Rummo, the challenge was to continue to improve the quality of its production, reducing both energy costs and the company's environmental impact. Making use of each other's expertise, ICI Caldaie and S4E System developed several solutions that perfectly met the requirements of the pasta factory.

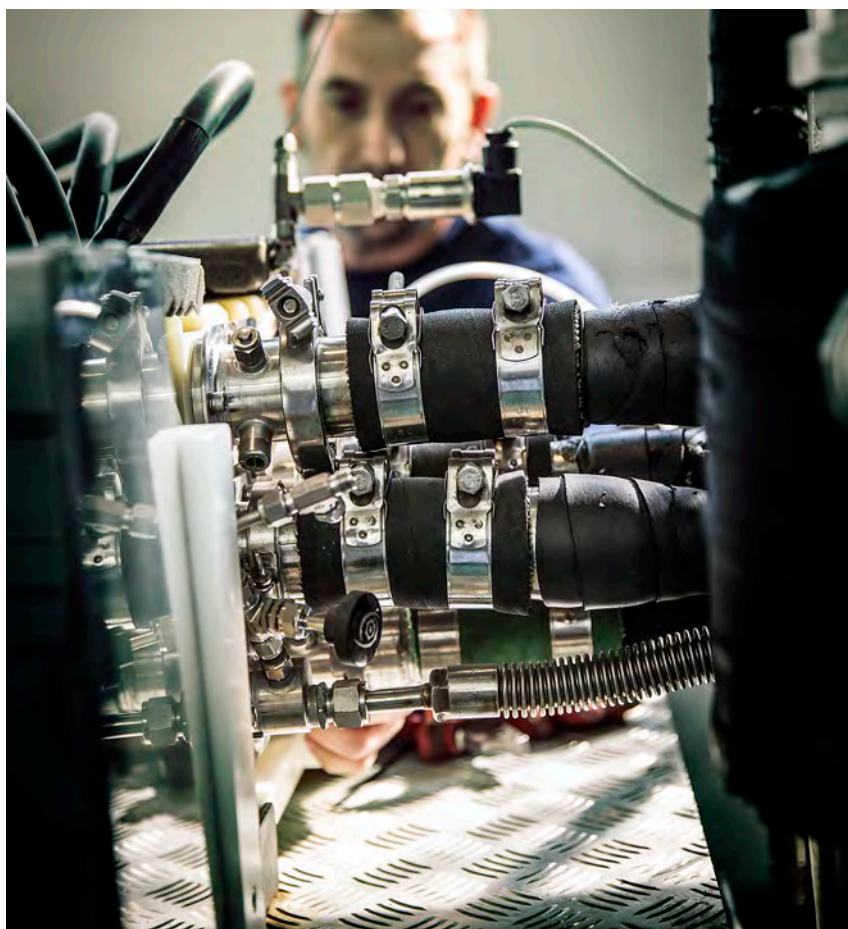
Interventions and results

The design and modernizing activity was performed throughout 2016 in collaboration with the plant technicians, and ended in 2017. The interventions mainly focused on the heating plant, but also involved the refrigeration plant, the compressed air plant, the vacuum plant and the general energy monitoring system of the heating and refrigeration plant, including the Energy Diagnosis procedure according to the Legislative Decree 102/2014. The main intervention in

the heating plant was to improve the production efficiency of superheated water. S4E System identified the main problem, detecting an ex-ante situation with an efficiency of 86% characterised by the presence of a boiler that used diathermic oil as an intermediate heat transfer fluid for the production of superheated water at 140°C.

On that specific boiler, there was a combustion air preheater. It was thus decided to improve the efficiency of superheated water production by introducing an ICI boiler ASGX EN 6000 superheated water boiler of 6 MW, equipped with economizer for heat recovery on flue gases and characterized by a nominal useful efficiency of 94%.

To date, the boiler working on the three pasta production lines in Room 2 produces at full capacity about 50% of the nominal power. This translates



into a methane consumption saving of 200,233 Sm³/year, corresponding to about 58,000 €/year. The new system configuration also eliminates the diathermic oil circulation pump (diathermic oil pump Q=400mc/h H=35mt c.l. Pel ass= 45kWel) with a consequent electricity-saving equal to 356,400 kWh/year, about 28,500 €/year.

The energy efficiency path has thus produced the expected results: lower costs and reduced environmental impact.

Overall, the intervention conceived by S4E System and carried out through the introduction of an ICI Caldaie boiler has led to saving about 234 TOE/year, a cost reduction of about 86,500 €/year and a decrease of about 520.86 tons of CO₂. The energy improvement process is not limited to this but has involved other sectors with excellent results. In the refrigeration plant, for instance, a reduction in

Annual savings in the Pasta Rummo's plant thanks to the interventions ICI CALDAIE and S4E



TOTAL ECONOMIC SAVINGS

154.100 €/year



TONS OF CO₂ SAVING EVERY YEAR

800 Ton/year



equivalent to the emissions of 100 medium-sized cars that make 65,000 km



TOTAL POWER SAVING

1.202.359 kWh/year





energy consumption for the production of chilled water has been achieved by changing the system configuration and improving the efficiency of chilled water production by achieving an EER of 4.5.

This result was made possible thanks to inserting refrigeration units with screw compressors under inverter and replacing the plate heat exchanger with direct exchange and mixing hydraulic disconnector to work at the same

temperatures as the cooling tunnels of 14°C. The electricity saving is equal to 282,972 kWh/year, equivalent to about 22,600 €/year, i.e. 93 tons of CO₂ less released into the atmosphere. As for the compressed air power plant, the ex-ante situation was based on fixed speed compressors.

These were replaced by inverters compressors, which resulted in an electricity saving of 30%, about 325,387 kWh/year, corresponding to about 26,000 €/year and a reduction of about 107.38 tons of CO₂. Finally, in the vacuum plant, the vacuum pump has been replaced by a liquid ring pump cooled by the chilled water produced by the Fridge Units with an air-cooled pump.

This replacement has allowed a saving of electricity of 30 kWh in addition to the non-use of chilled water for cooling, which means a saving of electricity of 237,600 kWh/year, equivalent to about 19,000 €/year and about 78.41 tons of CO₂ less released into the atmosphere. S4E System has also introduced an energy monitoring system for the heating and cooling plant, and also installed switchboards with PLC and digital interface to replace the previous electromechanical switchboards with no digital interface. In 2019, Rummo commissioned S4E System to carry out and transmit the Energy Diagnosis procedure according to the Legislative Decree 102/2014.

From a critical situation, the right partner helps rise to success

When the client's initial needs are fully met, there is no question of success. Success is made possible by the vision of those companies that no longer think themselves in terms of simple producers, from an individual perspective, but see the project on a larger scale.

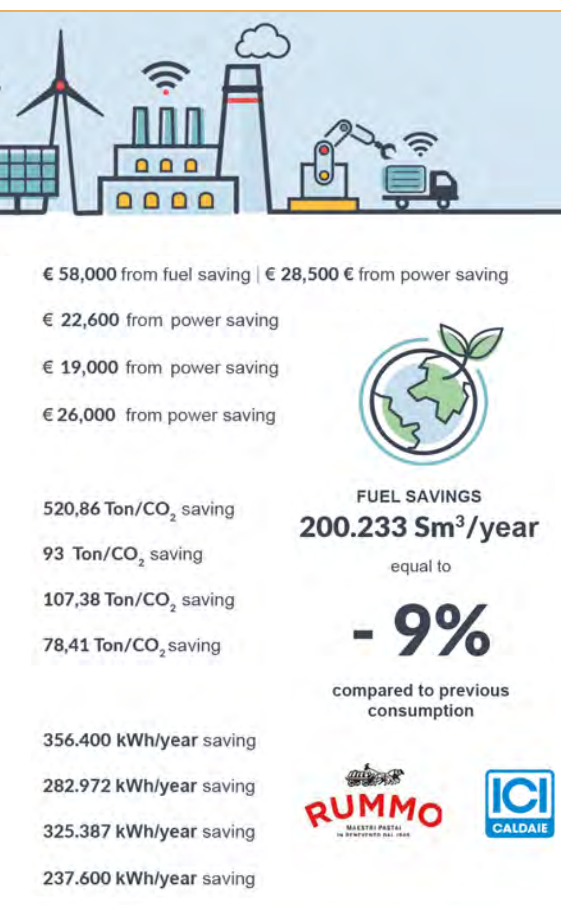
Only if driven by the desire to achieve a comprehensive solution one can establish partnerships with other companies that have different specializations and bring together multiple skills to develop complete projects.

With this ambition in mind, a company like ICI Caldaie collaborated in the energy improvement process of another company, in this case Rummo, not simply offering its boilers, but participating in a design process that involved many other areas.

Starting from a specific urgency, making useful energy-saving actions, it has been possible to create a condition of saving in a wider sense, making the company sustainable while maintaining the high-quality standards of its efficiency and productivity.

This story teaches us that with the right partners, it is possible to create not only a product but a complete and innovative tailor-made system. 🏠

www.icaldaie.com



READY MEALS: between social trends and green revolution. The impact on production lines

The Ready Meals market has been extremely interesting for many years now, a sign of social changes and in people's consumption habits we are seeing different trends: small portions for singles or for those who consume quick meals in the workplace, frozen or freeze-dried family formats for families in which both members of the couple work full time and have less time available or even vegetarian or vegan dishes.

The list is actually very long, but these two are the most relevant to us because they require a more significant technological adaptation, both in the production phase and subsequently throughout the supply chain.

We refer to the search for more elaborate and higher quality recipes, possibly fresh and to the ecological drive that leads to radically rethink the packaging, forcibly disposable, of products that are candidates to be consumed even on a daily basis.

Considering this, we want to concentrate on gastronomy, including in it the different recipes of fresh pasta, savoury pies and prepared meats which can be combined with different varieties of side dish.

The first element to be analysed is obviously the type of packaging and things are already complicated because the need to put a fresh and not frozen product on the shelf, which should therefore be packaged



in a modified atmosphere, is in contrast with the fact that the packaging materials suitable for this type of packaging cannot be biodegradable or compostable (at least at present), while some compromises can be obtained with vacuum packing.

Whether you choose compostable materials or stay on the plastic, as long as it is recyclable, with the push for the maximum reduction in the amount of material used, the result from the point of view of the manufacturer of processing or packaging

machines is the same: you will find yourself at having to treat more delicate, fragile or at least very deformable products which therefore introduce some complications.

The first sore point concerns the performance of existing machines: lighter and thinner materials or materials with different characteristics may require a lowering of the line

accumulation is extremely reduced or even gone for good.

Along with the problems, as always, opportunities also arise and in this case, it is possible to proceed to divide the required production on a greater number of slower machines starting from the tray denesters which at this point will work on a greater number of columns. The linear speed

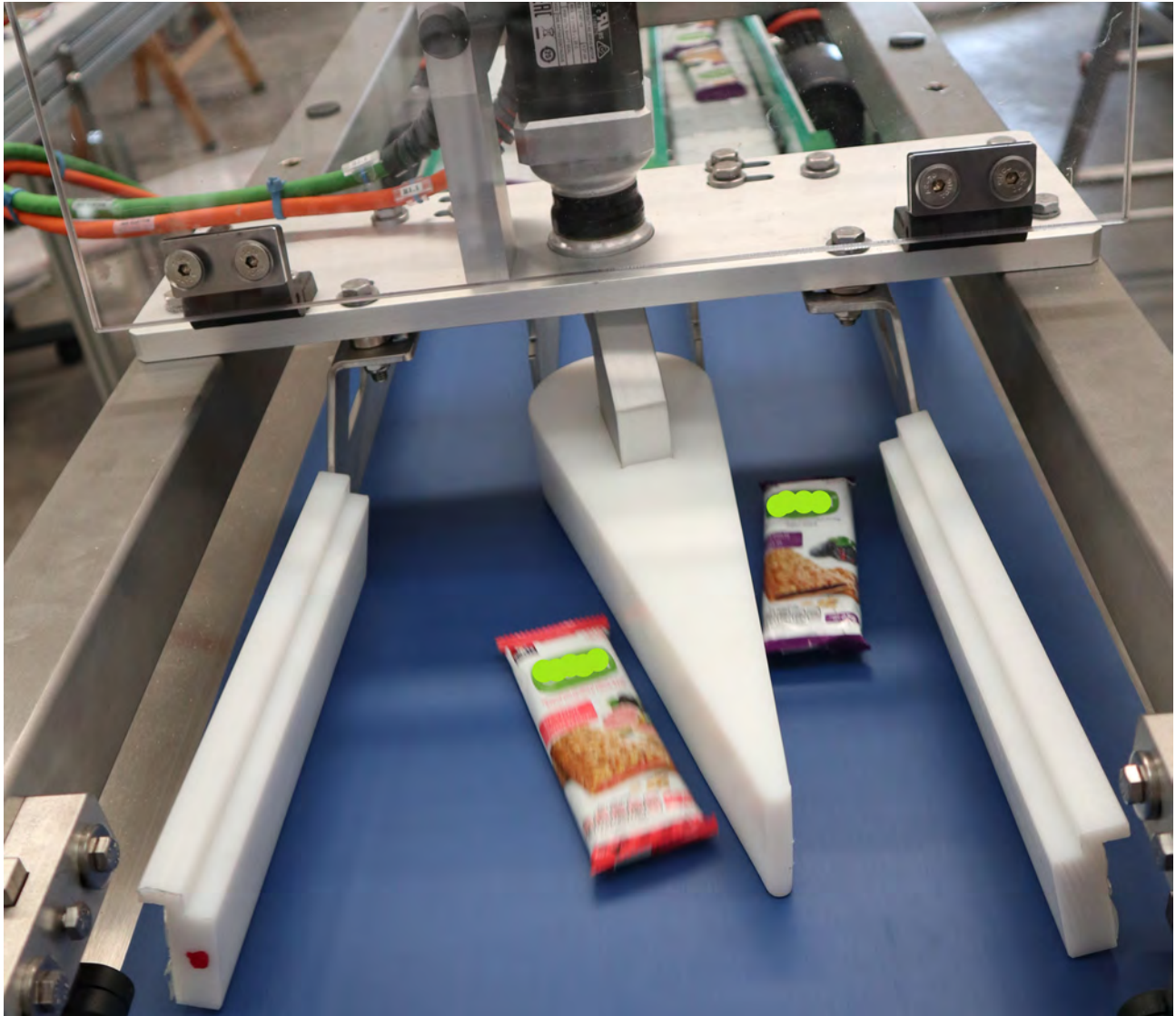
of the conveyor belts will also drop to the advantage of less stressed mechanics and ultimately more efficient lines.

While increasing the number of rows is not a significant problem for process lines and ovens as they already provide for this mode of operation, things could be a bit more complicated for sealers and secondary



speed, to keep the machine flexibility. The worst situation is of course that the equipment has to be replaced completely. The second problem, which has greater impact for M.H. Material Handling as conveyors manufacturer, the possibility of product





packaging machines. By reducing the possibility of accumulation, the management of the micro-stops for joints or for feeding the packaging warehouse (reels or cardboard) becomes critical.

The duration of the stops could also increase, since lighter packages may correspond to a longer cleaning or washing cycle. Here too the solution exists and can help balance the differences between the production flows of the different machines present in the line.

Inserting a buffering system, strictly WITHOUT PRESSURE, is the right answer. The choice of LIFO or FIFO operating mode depends solely on the product, its shelf life and the

possibility of remaining on line for several minutes without deteriorating or suffering from a degradation of quality. We can give the example of an application created recently in the gastronomy sector of a GDO customer. Our BAT-Buffer, here in the version with stainless steel structure, was placed at the exit of the oven and before the tray sealer.

The oven is obviously a machine that does not allow stops, otherwise the product will be destroyed and even the risk of fire, the buffering system allows line operators to have about five minutes to resolve the micro-stops or, in the event of catastrophic breakages, to organize the stop of the line and the manual emptying of the oven.

A final mention on cooling systems which can be the Heliflex or refrigeration: from a mechanical point of view, these devices do not suffer particular impacts when used with new packages, but the heat exchange and therefore the cycle time could undergo changes, it is a good idea to carry out a check in this regard. 🏠

www.mhmaterialhandling.com



FARA® FUNCTIONAL SYSTEMS for plant-based nutrition: FARABURGER!

Based on hydrocolloids (stabilisers and emulsifiers) Faravelli's FARA® functional systems have always guaranteed the best balance between innovation, cost and quality

FARA® functional systems, from the simplest to the most sophisticated, are tailor-made, following specific customer requests.

The blends include emulsifiers, natural hydrocolloids and functional ingredients that give foods and beverages unique characteristics, for example a well-defined structure, good resistance to thermal stress, improved consistency,

or a characteristic and consistent taste.

The added value is not limited to improving product quality.

Functional Systems, in fact, simplify the phases of research and development, quality control and approval of raw materials, with important economic, practical and operational advantages.

They can be used in the most varied sectors of the food industry.

A rapidly growing trend, **the plant-based diet** favours the consumption of plant-based foods, such as fruit and vegetables, but also nuts, seeds and oils, whole grains, and legumes. In addition, although not biologically classified as plants, mushroom and algae products are also included in the definition.

According to a 2017 Mintel study, which is also collected by the Plant Based Association, taste is the main driver in consumer decision-making, even for plant-based foods. Therefore, it is important to offer products on the market that are not only healthy but also have the organoleptic characteristics that consumers are looking for.

Faravelli has developed a range of functional systems purposely dedicated to the vegan and vegetarian sector, the latest launches being Faramix HH 105 - intended for vegetarian meat alternatives - Faramix FV 104 for bakery products, both savoury and sweet.

FARAMIX HH 105 for meat-no-meat burger

FARAMIX HH105 is a functional system to obtain a "meat-no-meat" product (hamburgers, meatballs, sausages) with visual characteristics and compactness identical to classic ones:





meaty, juicy, pleasant to the palate. Within the plant-based diet, the “meat-no-meat” category is growing just as fast and responds to the new needs and sensitivities of a growing consumer segment.

Plant-based meat is produced directly from plants. Like animal meat, it is composed of proteins, fats, vitamins, minerals and water. The new generation of plant-based meat looks, cooks, and tastes just like conventional meat.

CHARACTERISTICS OF THE FINAL PRODUCT WITH FARAMIX HH105

- very juicy despite the absence of fats

- neutral taste (soya is not perceived at all), no flavouring, therefore very adaptable to the taste.
- structure identical to the classic meat burger, without syneresis.
- very versatile, it can be adapted to the most diverse recipe and format requirements, while maintaining its juiciness and fat-free characteristics.

A product so juicy and meaty, people won't believe it's made from plants!

A food that is not only good and high in protein, but also an ally of environmental sustainability.

A certified quality production plant

First-class expertise in the selection of raw materials available on the market, special attention to food safety issues and a state-of-the-art production plant are the prerequisites to be the reliable partner in the production of powder blends.

Faravelli's production plant is located in Nerviano, near Milan.

It houses a packaging line for customisable solutions and an application laboratory where finished products are tested with methods that closely reflect the final application.

Both the production plant and the Applications Laboratory operate within the Faravelli quality system and are certified according to ISO, IFS, HACCP and FDA standards. 🏠

www.faravelligroup.com/functional
fara@faravelli.it



SPOTLIGHT ON SORTING

Maximizing protein's profitability from meat, poultry, rendering and pet food

There's money in protein. Whether it's meat or poultry, and whether it's processed for human consumption or rendered for pet food, it's worth making the effort to extract every possible kilogram of saleable raw materials. But this is a business with risks.

For one thing, derived meat for rendering delivered by slaughterhouses typically contains foreign materials, and these can be so difficult to detect that they get all the way down the processing line into the final product. For another, when rendered meat and poultry are turned into dry pet food, one type of kibble can easily get cross-contaminated with another, so that packages mistakenly contain unlisted ingredients. And if potentially harmful products get into the hands of an unhappy customer with a cellphone and social media access, the retailer's brand reputation can quickly be damaged.

These threats mean it is crucial for processors and renderers to have effective safeguards in place to protect food safety and product quality, whilst also minimizing food waste to improve sustainability and profitability. These things have always mattered, of course, but shifting consumer expectations make them more important now than ever before.

Risks, yes - but potentially big rewards

The risks and rewards of meat processing and rendering are increasing for two big reasons. One is that consumers have become far less tolerant of imperfections in the food they buy for themselves or their pets. The other is that the demand for high-quality, protein-rich foods for people and pets is growing fast.

In fact, mankind's need for proteins is set to skyrocket. The United Nations' Food



and Agriculture Division predicts that by 2050 global meat production will double - yes, double! - as the world's population increases from 7.9 billion people to 9.8 billion. At the same time, increasing wealth in developing nations will empower greater numbers of people to spend more on food.

Demand for pet food is also booming. Market researchers forecast that this market's global value will increase in the next seven years at a compound annual growth rate of almost five percent, from \$94bn in 2020 to \$137bn in 2028. What's more, this market is being reshaped by the 'humanization' of products that contain fresh ingredients, superfoods, and high protein - and premium products can command premium prices. Increasing meat production is good news for processors and renderers, but there is a downside: meat and dairy production are responsible for a whop-

ping 14% of global greenhouse gas emissions. This means it's imperative to minimize food waste - not only by getting retailers and consumers into the habit of throwing away less, but also by making more efficient use of the potentially usable food in livestock.

For these reasons, rendering is an environmentally friendly way to recycle material that would otherwise be wasted - and it also reduces the greenhouse gas emissions that would come from the natural decomposition of animal parts in compost or landfill. The National Renderers Association in the USA calculates that rendering animal tissues rather than leaving them to decompose has the same effect on greenhouse gas emissions as removing 12.2 million cars from the road.

Sorting machines solve the problems

Thanks to technical advances, there

are solutions to all of these challenges. TOMRA Food, the leading manufacturer of sensor-based sorters for the food industry, offers machines that safeguard brand reputations and enhance sustainability by reducing food waste, protecting food safety, and consistently maintaining high product standards.

Modern optical sorting machines also solve the widespread problem of labor scarcity, as well as helping to eliminate the health risks inherent on processing lines - as the COVID-19 pandemic drags on - when people have to spend a long time standing close to each other. And whereas manual sorting is subjective, imperfect, and especially vulnerable to errors when laborers are tired or bored, automated sorters work from the beginning to the end of each shift with unflagging accuracy.

TOMRA's sorters detect and eject unwanted materials from processing lines that simply cannot be seen by the human eye or inferior machines. They do this by inspecting materials according to their shape, color, structure, size, and even their biological characteristics. TOMRA also offers machines with x-ray technology to detect the presence in food of high-density foreign materials.

For additional advantages, TOMRA's machines can be connected to TOMRA Insight, a web-based data platform that gathers sorting data in real-time and stores this securely in the cloud. Live data can be reacted to immediately (and remotely) to optimize machine settings; historical data can be used to quantify and compare the quality of materials from suppliers. Such data analysis will become increasingly valuable as we move into a digitized future, transforming sorting from an operational process into a strategic management tool.

So, let's take a brief look at the sorting machines best-suited to meat and poultry processors, rendering plants, and pet food processors.

Solutions for meat and poultry

TOMRA offers sorting solutions for a wide variety of meat and poultry applications. These are for frozen products such as ground meat, nuggets, patties, and bacon bits, and for fresh raw products such as sausages.

TOMRA also offers inline inspection systems. These help processors determine the right fat percentage for any grinder/mixer setup for minced meat, burgers, and sausages, as well as making real-time measurements of protein and moisture levels. And the QVP in-line detection machine for chicken fillets helps ensure that fillets with 'wooden breast' don't end up in the final packaging.

Producing and selling tasty, protein-rich sausages shouldn't be compromised by having casing residues still attached to the final product (or by any other foreign material, for that matter). The TOMRA 5B safeguards producers and brands against complaints and expensive recalls by detecting even the smallest casing fragments.

The TOMRA 5B also controls for sausage length, dimensions, discoloration, and breakages. And there's the option to sort out the rejects in two streams - one for foreign materials and casing remains, and one for products that don't match the set scope but can be reused, minimizing food waste.

For IQF products such as chicken nuggets or stripes, bacon bits, or other breaded or un-breaded products, the best sorters are the TOMRA 5C. Located after the freezer and close to packaging, this unit sets the benchmark in product safety at the same time as minimizing false rejects and food waste. By using new, best-in-class laser technology combined with TOMRA's unique BSI+ (biometric signature identification) scanner, the unseen becomes visible, making foreign materials a problem of the past. These technologies are also highly effective at sorting-out discoloration, black spots, embedded plastic, doubles, thin coating, and voids.

Sorters for pet food and rendering

Producing food for pets is strictly regulated by local and global legislation which is designed to ensure product quality and food safety. Complying with these regulations requires the use of safe ingredients and additives, hygienic processing practices, and HACCP (hazards analysis and critical control points) management - but even so, there is still the risk of foreign materials entering the manufacturing facility in raw materials. This is why TOMRA works closely not only with pet food manufacturers, but also with their suppliers in the rendering industry.

Important protein sources in both wet and dry pet food are animal-derived ingredients. However, entering the rendering facilities these ingredients often contain various foreign bodies which come from the abattoirs, such as rubber parts, foils, wood, glass, and metals. This is hard to avoid with an automated production line, but also mostly hard to detect with conventional methods such as metal detection and/or X-ray.

The TOMRA 5C solves this, preventing foreign materials from reaching the pet food manufacturer. This sorter often acts as the final control on the meal line: placed after the final screen, it not only detects and rejects even the smallest particle of foreign material but also sources out all the good product coming from the screen, feeding this into the good stream again. These capabilities, plus the ability to regulate the ash content to enhance the final quality, make the TOMRA 5C essential for every meal stream.

In dry pet food, foreign material isn't the only threat - there's also the problem of cross-contamination. And as a solution, the TOMRA Nimbus is unbeatable. This machine's various sensors protect against foreign materials, loose and embedded, and cross-contamination - and with TOMRA's new pet food software, the change over from one recipe to the next is like a snap of the fingers. This eliminates traditional ways of trying to

avoid cross-contamination which are both time-consuming and product-consuming. TOMRA's unique BSI+ technology checks the inside of materials, ensuring that different types of kibble don't get mixed even if they are near-identical in outward appearance, and by using the new petfood software, the operator always has the best view on what to produce next.

For producing best-in-class pet treats and snacks, foreign materials must be prevented from ending up in the final package, and products should have the same size, form and color. For this the TOMRA 5B is the perfect solution, ensuring that only the right products get into the package.

In wet pet food, the TOMRA 5B is ideal for the inbound set-up, where incoming frozen blocks pass through either a breaker or a grinder before entering the mixer. Placed between the breaker/grinder and mixer, the TOMRA 5B effectively detects and sorts various foreign materials including stones, hard and soft

plastics, metal, wood, glass, rubber and bones. In addition to protecting final products from unwanted materials, the TOMRA 5B also logs every batch, so it is possible to assess what's coming from suppliers accurately.

An investment that pays back well

When processors and renderers first adopt TOMRA's sorting solutions, they are pleased to find that the once-steady trickle of customer complaints dries up. One good example of this is JG Pears, a leading processor of animal by-products and food waste in the UK, producing a range of meals and fat for the pet food industry. The company's Site Manager, Craig Harrison, said: "Non-conformances with our customers have reduced dramatically, and we see very, very little waste or foreign bodies in our material.

Our current customers have seen the difference in the finished product and there's lots of interest from additional customers enquiring about buying our material."

In addition to keeping customers happy, then, TOMRA's sorting machines are also a key which can unlock new business.

One of many business leaders who will affirm this is Andy Kettle, Managing Director of GA Pet Food Partners, Europe's leading manufacturer of private label premium dry pet food. Andy commented: "TOMRA's technology has helped us break open new markets which previously would not have been available to us. For me, it has been one of the best investments made by the business in the last three to four years." 🏠

www.tomra.com

 **TOMRA** | FOOD



“ AI TRENDS IN THE FOOD PROCESSING INDUSTRY ”

Al has been a rapidly growing part of the business world for a number of years. Recent developments in the technology have accelerated that growth to the point where it is now believed that AI is going to be the driving force for innovation in business over the next 12 months. In the food processing industry especially, AI is a huge factor in the move towards smart factories. As we look towards 2022, we can see what trends in this space are likely to bring the biggest changes to the industry moving forward.

Deep Learning

Deep learning is where machines are able to learn and adapt to be able to complete new tasks. It utilises data, statistics and predictive modelling to, in a way, mimic the way in which human cognitive function is able to

work out tasks critically. Rather than a linear code structure deep learning code is much more complex and ambiguous. In a way, deep learning is a way of automating predictive analysis. With the recent uptake of AI over the last several years deep learning is set to have a larger and larger role in how AI is used on the factory floor in the future.

This is because the AI that has been previously installed will now or will soon be required to adapt to changes. This is where deep learning comes in to allow those changes on the factory floor to be made without large scale and expensive hardware changes. For the food processing industry this is especially beneficial. Deep learning means that hardware is able to adapt to changes in manufacturing process such as recipe chan-



ges or even entire product changes without the need to change the machines. This saves money for the business and also builds agility so that the company can respond with speed to changes in the market, ultimately improving profitability.

Robotics

One of the most obvious ways in which AI is able to serve the food processing industry is through the improvement of robotics that it is able to bring. AI is able to create smarter processes through intuitive coding that improve the productivity of the machines on the factory floor. This is a key area of improvement for businesses in the industry. In fact, it is often the primary factor in the decision for business owners to implement AI into manufacturing processes. Improvements to the robotics speed up production which increases the capacity of the business, ultimately improving profit margins. As a result, improvements in the robotic technologies on the factory floor is set to remain a major trend for AI in the manufacturing industry.

Marketing and Reduced Admin

AI is also to help businesses away from the factory floor. It also able to promote the company and streamline

their marketing processes. AI is able to interpret data effectively to work out exactly what the end user's requirements are. This helps businesses to effectively market themselves to new customers improving their sales and increasing profits.

Similar technology can also be used to complete more menial tasks. One of the ways in which AI is looking to progress in the future is through document analysis. This means that admin tasks that would previously have to be completed by staff, who often dislike this area of their role, can now be automated. The streamlining of this process has a number of benefits, where in areas of the business where there can be a lot of red tape. Not only is the admin process made more efficient by the use of AI, the lack of admin can also improve both staff productivity and satisfaction. This is because they can focus on the more challenging areas of their jobs without the need for the distraction of admin tasks.

As noted at the beginning of this article, AI is one of the quickest evolving areas in business and its potential is almost unlimited. The trends we are seeing now are just a small part of where we see the technology reaching in the future. For businesses, harnessing that technology now is key to moving with the technology as it develops to give themselves the platform to utilise AI properly.



NSK LIFE-LUBE® bearings improve the reliability of vegetable washing operations



MOTION & CONTROL
NSK

A cutaway section of an NSK's Life-Lube® bearing unit, showing the stainless steel insert and Molded-Oil lubrication.

The food industry demands many prerequisites of its bearings, not least long service life, high-speed capability, hygienic operation and robust sealing technology.

Without these attributes, food plants will incur higher maintenance costs and unscheduled production downtime, both of which impact upon bottom-line profitability.

To overcome these issues, increasing numbers of vegetable processing facilities are identifying NSK's Life-Lube® series as the optimum bearing choice for demanding applications such as washing systems.

Life-Lube® bearing units comprise two key components, the first of which is

a thermoplastic polyester (PBT) housing that provides corrosion resistance and eliminates any risk of contamination from painted or coated surfaces.

The housing also features nitrile rubber seals to prevent the ingress of contamination and water/cleaning chemicals from repeated washdown procedures.

In comparison with standard bearings, users of Life-Lube® units can reduce or even eliminate the annual costs associated with maintenance and downtime.

The stainless-steel insert of the Life-Lube® series features NSK's proprietary Molded-Oil cavity, which contains a lifetime of lubricating oil

and polyolefin resin so that no relubrication is required – again reducing maintenance costs.

Among a growing number of food plants enjoying the benefits of Life-Lube® bearing units is a premium vegetable processing company. The facility was previously experiencing frequent bearing failures on a high-volume carrot washing line, causing significant downtime and reduced production. The company would often have to change its bearings every six weeks.

NSK performed a bearing failure analysis and application review as part of its AIP Added Value Programme. In particular, NSK conducted a process mapping exercise of



During a 12-month trial of NSK's Life-Lube® bearing units in a carrot washing application, no failures occurred.

the carrot washing operation, identifying problematic areas for the bearings.

The analysis revealed that the ingress of hard-particle contamination and washdown fluids were significantly reducing bearing life. In effect, the lubricant of the standard bearings was washing out, leading to premature failures.

The expert team of NSK specialists recommended Life-Lube® bearing units featuring Molded-Oil inserts, with a subsequent trial demonstrating vastly improved bearing life. No failures had occurred after a year of operation.

The vegetable processing company is now enjoying significant annual cost savings, with reduced downtime and maintenance, as well as increased productivity. Ideal for any operations where contact with process fluids is unavoidable, NSK Life-Lube® bearing units are available in bore sizes from 20-40 mm. To ensure design flexibility, housings come in various types, including two-bolt, four-bolt, pillow block and take-up units. 🏭

www.nskeurope.com



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PNEUMAX: components and systems for industrial automation

*Pneumatic components,
electric actuation and fluid control*

Founded in 1976, Pneumax S.p.A. has become one of the leading international players in the field of industrial and process automation components and systems. The company is at the head of the Pneumax Group made up of 25 commercial and production companies with over 730 employees worldwide.

The international network includes 9 branches in Italy, 8 branches in Euro-

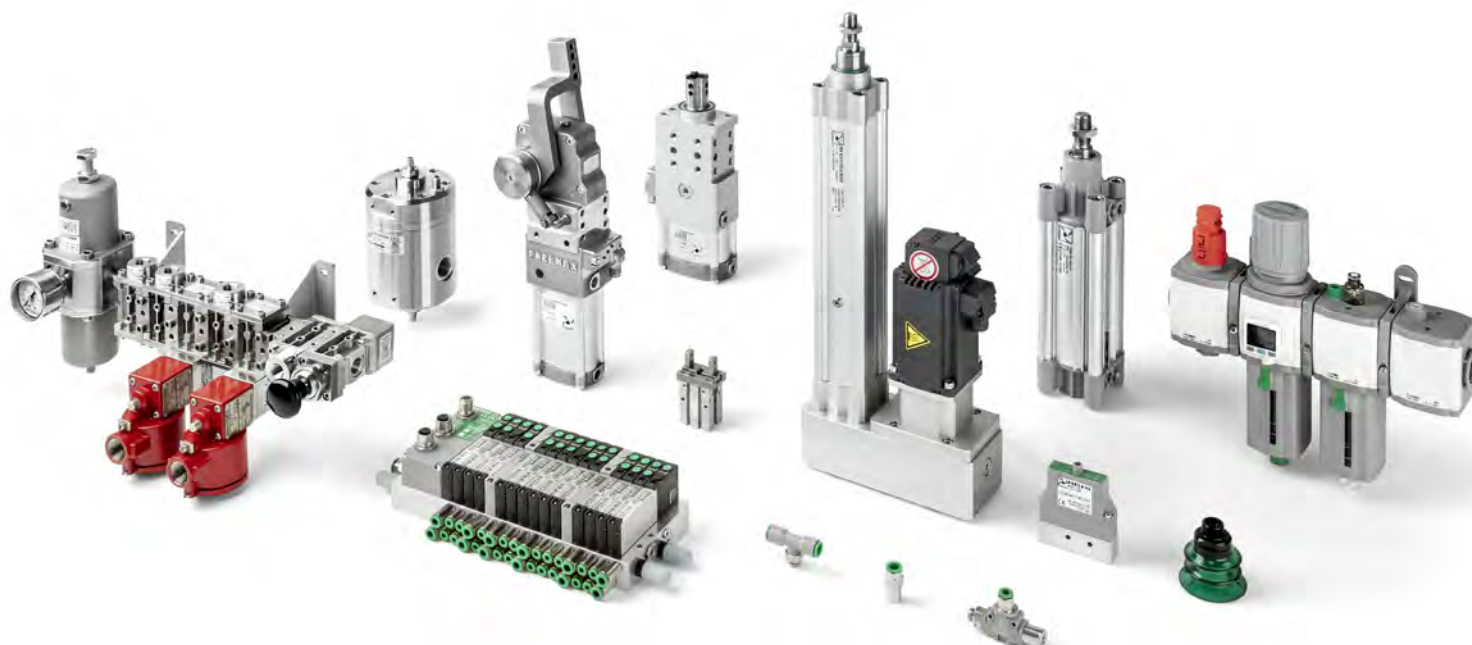
pe in addition to branches in the USA, Brazil, India, China and Singapore, and a vast network of distributors that guarantee presence in over 50 countries.

All of the Pneumax Group's manufacturing facilities are located in Italy, the seven units in Lurano (BG) plus Titan Engineering in San Marino. All the facilities comply with the environmental and workplace safety requirements set

out in standards ISO 9001: 2015, ISO 14001:2015 and ISO 45001: 2018.

Continuous investment in research and development has enabled Pneumax to expand its offer by combining well established pneumatic technology (actuators, valves and solenoid valves, proportional technology, fittings, air treatment, materials handling, vacuum), with electrical actuation and com-





ponents for liquid and gaseous fluid control and offering solutions made from different materials ranging from stainless steel to engineering polymers or from aluminium to brass.

The organisational structure designed to maximise flexibility and the use of cutting-edge technologies ensure maximum efficiency both for the supply of standard components and the creation of completely customised solutions.

At the same time, the development of mechatronic and digital expertise underlies the creation of integrated systems which, thanks to enabling technologies, are capable of meeting the requirements of Industry 4.0, from component interconnection to the ability to remotely control and manage component performance, without ever neglecting aspects such as optimising consumption.

FCM FITTINGS


Food Contact Material

The food & beverage and food packaging sectors are two of the sectors for which the company offers

Pneumax Automation LLC
A Pneumax Group Company

128 Durkee Lane
Dallas NC, USA

specific products such as the entire range of stainless steel components (cylinders, valves and air system units and fittings) or FCM fittings which, in addition to ensuring reliability and high performance, comply with relevant international standards such as NSF/ANSI 169 and MOCA. FCM fittings are suitable for con-

tact with food and the passage of food fluids according to European Regulations (EC) 1935/2004, (EC) 2023/2006, (EC) 11/2011 and contact with drinking pursuant to Italian Ministerial Decree DM 174/2004. 

www.pneumaxgroup.com



Solve Fermentation Challenges Through APPROPRIATE VALVE SELECTION

By Rodolphe Karpe, Product Marketing Manager, Fluid Control and Pneumatics, Europe at Emerson

With the explosion of craft beers, demand for new wine blends and rise of international distilleries, the alcohol business is booming. This proliferation has given consumers more choices than ever and expanded the alcoholic beverage market both regionally and around the world.

Whether you're a small-town brewer, boutique winemaker or multimillion-dollar global brand, it's essential that your products maintain the same high levels of quality and taste to keep up with demand, despite such variability.

The secret to meeting customer expectation every time lies in your fermentation process.

To ensure quality, consistency and taste across various beverage styles and flavors, the fermentation process requires exact temperature control. To precisely control heating and/or cooling parameters, control tanks must be equipped with the right valve system.

Too often, valves experience short service lives and other performance issues that can cause temperature fluctuations — compromising beverage quality and costing precious time and money.



The fermentation process in the beverage industry requires precise temperature control

Common Obstacles Make Tank System Upgrades Difficult

Alcoholic beverage producers typically control tank temperatures, and therefore the fermentation process, using glycol or ammonia systems.

Depending on your system, it's also important to select valves that are rated to handle the appropriate me-

dium. In propylene glycol systems, for example, this nontoxic liquid medium flows through thermal jackets surrounding the fermentation tanks. In a

closed circuit, the glycol is pumped through and cooled in a chiller before it flows back down through the jackets. The chilled glycol then cools the tanks and their contents.

Because fermentation is such a vital process, it's no surprise beverage makers look for opportunities to install or upgrade their tank cooling and heating systems.

But these modifications aren't without their challenges. Many facilities, particularly smaller operations, have limited physical space.

As a result, tank systems need to be positioned as close as possible to each other to maximize floor space and remain accessible during maintenance — making innovative yet costly tank designs a necessity.

Other challenges include:

- **High energy costs.** Energy is one of the largest overhead costs in the food and beverage industry — including alcoholic beverage production. Because fermentation is considered a wet environment, beverage makers also need to have additional electrical safety features in place.
- **Extensive installation and maintenance.** Depending on the size and number of tanks, the labor required for piping and wiring can be costly and time-consuming. In addition, maintenance and upkeep become all the more complex — increasing potential downtime.



- **Possible product loss.** For wineries, in particular, any issues that compromise batches during extended fermentation periods equate to several years' worth of lost time, materials and cost.

In addition to ensuring precise temperature control, proper valve selection can address the challenges associated with installing, maintaining and upgrading fermentation heating and cooling systems.

By choosing the right valves, you can save equipment space, conserve energy and optimize productivity.

How To Select Valves That Overcome Fermentation Challenges

Whether you're spending too much time on piping or you're a startup operation with limited resources and space, Emerson can help you select the right fluid automation product to meet your unique needs. In addition to their reliability and durability, our products provide the industry's longest expected service life — maximizing your uptime during every precious minute of the beverage-making process.

Choose from the following valve solutions, all of which are suitable for systems using glycol or ammonia:

Two-Way Valves. Two-way valves are a traditional, tried-and-true valve type for fermentation heating and cooling systems.

These high-flow solenoid valves come in a range of pressure ratings, sizes and resilient materials like brass or stainless steel — providing long service life and low internal leakage. Many feature low electrical consumption and are mountable in any position — boosting their installation flexibility in tight or limited configurations. Look for an IP65 rating for use in fermentation and other wet environments.



IP washdown solutions eliminate contamination and protect components from corrosion that may cause downtime



High-flow solenoid valves, such as the ASCO Series 8210, provide long service life and low internal leakage in heating and cooling systems

Solenoid Valves. Solenoid valves include several electrical enhancements that achieve even greater energy savings and longer service life.

Look for valves that incorporate power management circuits, as well as electrical surge suppression to both the solenoid and electronic controls. These features result in energy savings that can lower your total cost of ownership by 14 percent.

In addition, these valves accept both AC and DC voltages without sacrificing flow or pressure specifications, increasing DC performance up to 500 percent by today's industry standards.

Because the valve's DC characteristics now rival AC pressure and flow values, you can eliminate AC output cards to simplify control, reduce wiring costs and provide safer working environments for DC users.

Solenoid valves also eliminate the hum associated with AC voltage and have expanded AC and DC operating temperatures. They also extend product life through low solenoid temperature rise, and they meet UL, CSA and CE approvals and RoHS 2 compliance.

Angle Seat Body Valves. Air-operated, direct-acting angle body seat valves are ideal for aggressive and high-viscosity fluids. Many models feature a straight-through design and wide range of advanced options, including a signaling box, compact positioner for proportional control and stroke limiter.

These valves are the preferred alternative to diaphragm and ball valves. They allow tight shutoff in both directions and contain no bleed holes, eliminating the chance of glycol plugging and the possibility of related tank temperature fluctuations.

They are also one-third the cost of ball

valves and last up to 10 times longer. Many angle seat body valves are designed to handle back pressure, eliminating the need for check valves, and feature a rugged, stainless steel body that resists sulphur vapor in processes like winemaking.


Automation Further Improves Temperature Control

In addition to proper valve selection, it's important to consider automating your fermentation heating and cooling systems to achieve even greater thermal precision.

For example, the G3 Electronic Fieldbus Platform makes this process quick, simple and painless. G3 integrates communication interfaces and input/output (I/O) capabilities into your pneumatic valve manifolds, which enables your PLC to more efficiently turn valves on and off, as well as channel temperature data from resistance temperature detector (RTD) sensors. Compact and modular, G3 includes

a range of innovative features to enhance your fermentation operation, including a graphics display for easy commissioning and fault diagnosis, as well as compatibility with a range of industrial communication protocols, including Ethernet, PROFINET, DeviceNet and many others.

The right valves in combination with the G3 automation platform provide a single solution that overcomes many of the challenges preventing alcoholic beverage makers from installing, expanding or upgrading their fermentation systems.

In addition to saving space, conserving energy and improving critical uptime, this combination delivers the peace of mind that comes with knowing your beverages — no matter the style, flavor or blend — are achieving only the highest levels of quality, consistency and taste. 

www.emerson.com



The ASCO Series 290 is a pressure-operated, direct-acting, angle seat-body valve built for demanding applications such as fermentation

Pressed stock cubes: IN-LINE EFFICIENCY

A brief interview with the IMA team behind the highest speed line with the smallest footprint available on the market

The manufacturing of pressed stock cubes is a market niche where a higher level of efficiency is often required: all the machines in the line have to work together in synergy to ensure maximum productivity. Today IMA is the

only supplier on the market that can single-handedly offer a complete line. We had a brief conversation with IMA experts regarding the latest development in this field: a complete line with an output of 2,000 tablets/minute.

**Let's start with Fabriano Ferri-
ni, Product Manager for Tablet
Presses at IMA Active. Since
we are talking about pressed
stock cubes, I suppose
everything starts with a tablet
press. Is that right?**

Yes, that's right: the first machine in the line is a tablet press. Prexima is designed to guarantee high efficiency in production, mainly pursuing two factors: high output and consistent processing.

Prexima features several technical solutions for high-speed tableting of bouillon powder.

A new die feeder has been designed specifically for high efficiency feeding of wet masses with low flowability. This has proven to ensure low deviation in weight, even with tablets of 10 grams or more.

Compaction and dwell time are also important factors when high speed needs to be reached.

They allow more time for the ejection of the air contained in the powder blend and for the bonds to be made between the particles.

Here, the 250 mm pre and main compression rollers mounted on Prexima really make all the difference, as well as the IMA 32T tooling, which features a larger punch head.

In addition, the Prexima high-yield motorisation minimises heat production in the lower compartment, being the



ideal solution for low melting or heat sensitive products. Low temperature tableting maintains blend flowability at die feeding, prevents product sticking to punches, and dies and preserves tablet quality.



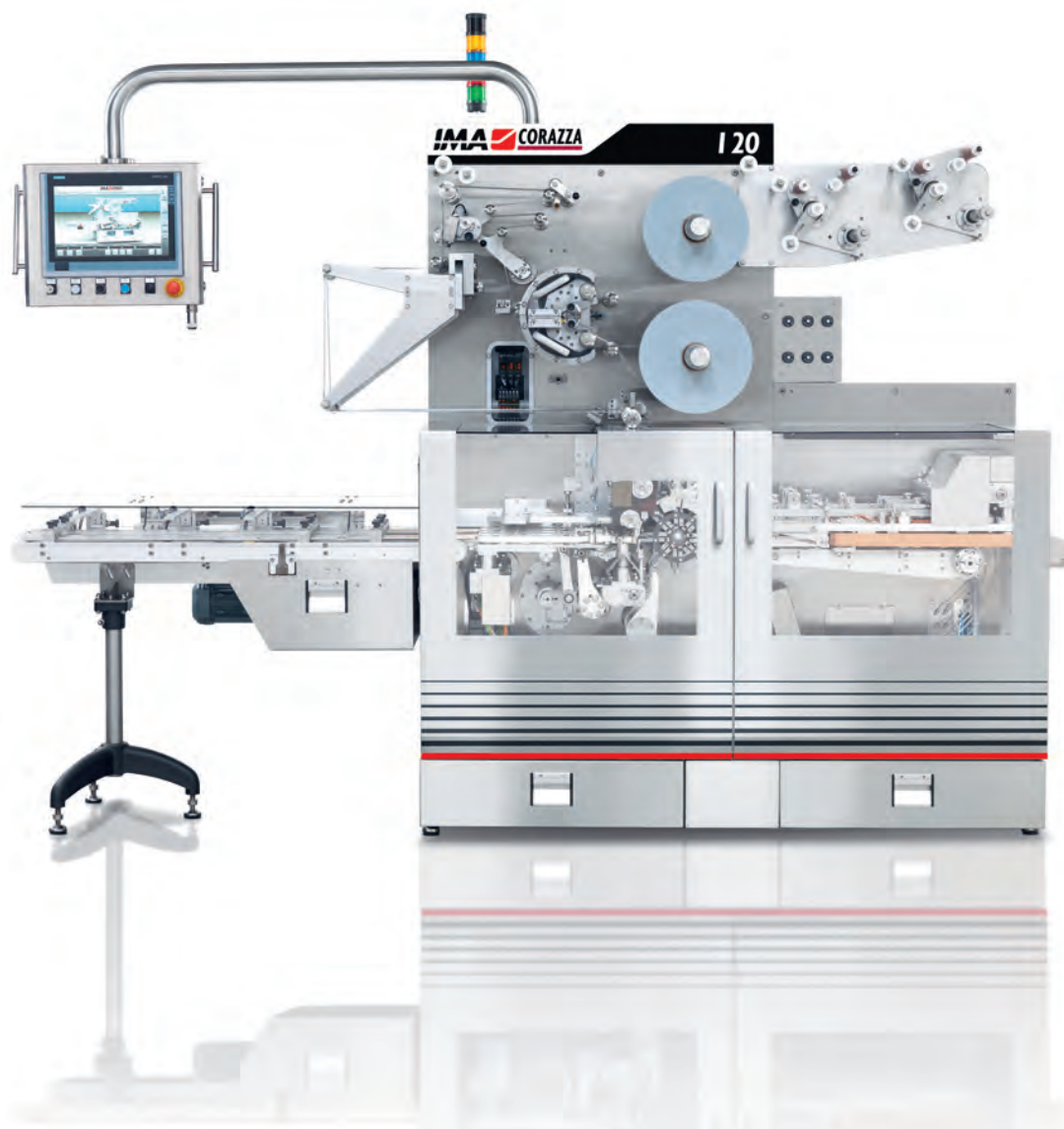
So, Prexima can run fast. But to achieve efficiency you must ensure a consistent process as well.

Correct: an optimal OEE is based on a robust operation, which minimises unexpected line stop, reduces cleaning times and maintenance work. From this perspective, Prexima ensures complete separation between processing and mechanical areas thanks to the use of purposely designed seals and protections. The absence of products in the mechanical area makes

for extended duration of cams, tooling and compression rollers, leading to reduced cleaning time. In addition, a powder-free mechanical area allows for a totally automated and recirculated lubrication system: the control system automatically takes care of lubrication frequency, without any need for operator intervention. In that way, the best parameters do not depend on the operator's skills. The only required action is to check the oil level and refill it, if necessary.

Now the tablets have to be wrapped. Let's turn to Davide Giordano, Sales Manager at IMA Corazza.

That is correct. Stock cubes are wrapped by the I20 wrapping machine, in side-folding execution, with its fully electronic operations. The machine can be equipped with the "easy-opening unit" which enables an easier consumer-oriented opening of the stock cube wrap. The I20 is also able to handle paper-based packaging



materials, which is certainly a plus for Corazza solutions in a world where recyclability and sustainability have become a must.

What are the I20's main hallmarks?

The I20 has been engineered with a very compact footprint, delivering a space-saving solution. What's more, its modular design means it is easy to access and maintain.

Its two-lane execution, equipped with a unique wrapping reel without any aligning unit, ensures gentle operations and high efficiency. The dedi-

cated feeding system allows for a compact design to be delivered for both the press and the wrapper: products coming out of the pressing unit accumulate on the two-lane conveyor, distanced thanks to the acceleration wheels and then driven towards the folding wheel by a pusher.

The new welding system, installed in the outfeed grouping unit, ensures excellent sealing quality of the final product. Compared to other wrapping equipment available on the market today, the I20 machine concept and operations allow for very fragile products to be handled.

What about maintenance and cleaning?

Since the I20 has been developed to meet customer expectations in terms of maintenance, the plug-in design of the main groups greatly facilitates activities such as reel change, foil feeding set-up as well as infeed and outfeed group cleaning.

The I20 shows its customer-oriented approach through the HMI control panel, which reports machine performances to monitor production, has alarms to tackle downtimes and enables remote machine assistance.



The high number of tablets released by the I20 means an automated solution is necessary to place them into a tray. Let's listen to Michele Nomi, Area Sales Manager at IMA GIMA, who can give us some more details on the FTB569 tray packer.

Over the last few years we have seen increasingly faster wrapping machines and, at the same time, a general growth in labour costs.

These factors have led many customers to look for automatised solutions also in the end-of-line sector, replacing what was normally done by semi-automatic equipment or even manually by operators.

It has been almost ten years since we began collaborating with IMA Corazza, supplying a downstream wrap-around tray packer for wrapping machines, and I can definitely say it is highly appreciated on the market for its many features.

First, its compactness – a total length of approximately 2 metres, including infeed and outfeed conveyors – and its accessibility.

Then, product handling and flexibility: thanks to the servo driven movements and other tailored devices, we can guarantee the smoothest product handling without any damage. Lastly, the machine is designed to provide a quick size change, switching from one format to another by replacing just a few parts, allowing our customers to be reactive to market changes and trends, while maintaining high efficiency levels.

You mentioned the wrap-around tray packer. What are the advantages of this technology?

The fully automatic technologies used to place the tablet in trays are usually top loader and wrap-around. Although

we have both of them in our portfolio, for this specific application we have decided to use the wrap-around solution because of several advantages.

Firstly, as we have just mentioned, the compactness of the machine.

Secondly, optimised tray dimensions: by forming the tray directly around the bundle, we can design it with zero tolerance between product and tray, which means a reduction in the used material, while achieving significant annual savings in logistic and shipping costs.

Last but not least, the quality: a tray that perfectly fits around the product looks better on the shelf and facilitates its wrapping.

Now we should wrap the tray... Let's ask Enrico Pazzi, Food Sales Manager at IMA BFB, which has a long tradition of designing and manufacturing end-of-line machines, ranging from overwrapping and stretch wrapping to case packing, palletizing and handling solutions. If you had to choose the best machine to end this line, which one would you propose?

The A50: it is a very compact machine. Its reduced footprint also makes it the ideal end-of-line solution when it comes to wrapping because it can easily adapt to any space constraint. Being the final equipment in the line means that it has to be flexible in size if you want it to fit into any space.

The machine is also extremely easy to operate. Operators do not have to be trained or particularly skilled to use it. We can say that it is designed with the operator in mind because it is easily accessible thanks to its balcony structure: it is very easy to reach the product-flow areas for cleaning.

The A50 guarantees maximum protection both for the operator and the product.

How is overwrapping carried out on the machine? How is the final quality of the wrap guaranteed?

The machine has specific film unwinding, cutting and sealing systems to ensure that the film is always cut with a very precise fold and sealed without wrinkles, air bubbles or other imperfections. The product is treated with care, lifted by the elevator, gently wrapped and pushed to the sealing area, where it is securely sealed and closed as it goes through the sealing plates. Thanks to this system, the machine can handle very thin films, like 16 micron films, considering the standard thickness is 22-24 micron. The option of handling thinner films brings significant advantages because, on the one hand, you can reduce the cost of the packaging material and on the other, you have a greater film reel autonomy which means less operator intervention. 🏢

www.ima.it

Make the most – The IMA Virtual event dedicated to Confectionery and Snack market

The Sensing Future Days cycle continues: a new virtual event completely dedicated to the processing & packaging solutions for the Confectionery market will take place on May 27th, the agenda will be available in the next days. Join the Sensing Future Days community to receive updates on the agenda. March edition: the last virtual event entirely dedicated to complete lines for stock cubes, processed cheese, butter & margarine, yoghurt, beverages & baby food and of process technologies for gums, candies & coated sweets is now available on-demand on the IMA Sensing Future Days Platform. Sign-up now at sensingfuture.ima.it to re-watch these sessions, as well as any other session from past editions.

SYNTEGON LAUNCHES new pick-and-place platform

- *New robotic pick-and-place platform for product handling, feeding and loading*
- *Strong combination of industrial expertise, control and robotics technology*
- *Syntegon RPP: modular, individually configurable and scalable*

The Covid-19 pandemic has further fueled the automation megatrend. Manufacturers of different products, especially food, increasingly rely on robotic solutions to automate critical process steps or to fully automate entire systems. Syntegon Technology has been offering robotic solutions for process and packaging technology for many years. With its newly developed robotic pick-and-place platform, Syntegon RPP, the company sets a new standard in the automation of packaging lines. "We are more than ready for the requirements for the factory of the future. Automation and robotics are important strategic focus areas for Syntegon," says Dr. Silke Blumer, Vice President Strategy and Product Management for the business unit Food at Syntegon.

The core functions of the newly developed RPP platform include quality assurance, user-friendliness and efficient production processes. "Thanks to our proven expertise in robotics combined with industrial know-how, we can offer our customers automated turnkey solutions from a single source," Blumer confirms. "We understand the food industry's requirements for machines and lines better than any other manufacturer – from

process technology to primary, secondary and transport packaging."

Maximum flexibility thanks to individual configuration

The Syntegon RPP platform automates process steps such as handling, feeding and loading. The new robotics platform is designed as a modular system. This allows individual configuration of the robotic cells. "Each customer project is different. Thanks to the modular RPP platform, we can

handle a wide variety of products. The Delta robots can be flexibly connected and, together with transport modules, seamlessly integrated into an overall system," explains Andreas Schildknecht, Product Manager Robotics at Syntegon. "Together with our customers, we can automate single process steps consecutively and in line with their needs or budgets, following the principle 'build as you grow'. Moreover, the platform can be scaled to suit different production



Each robotic cell of the RPP platform can be configured individually to automate processes such as feeding, handling and loading.



The new robotics platform is designed as a modular system and can be incorporated seamlessly into existing production lines.

capacities, while multiple cells can be connected."

The open control software ensures the seamless integration of the Delta robots into the line. "The comprehensive integration of controls and hardware is essential for all components within the line to communicate with each other through a single control platform – and to function perfectly together," says Schildknecht. The platform, which was designed according to the latest UX aspects, ensures user-friendly operation. New features support the operators in making their daily work with the line easy and effective. The RPP cells provide excellent visibility, easy access and efficient cleaning. The stainless steel robotic cells meet the IP65 protection class. This minimizes the risk of

contamination for both current and future hygiene requirements in the food industry. Last but not least, the tool-free format changeover reduces downtime, allowing manufacturers to process different products on the same line and to respond quickly to changing market demands.

Automation is the future

"The growing need for more flexibility and efficiency will be increasingly realized by integrated robotics solutions. Automation is the future," Blumer is convinced. "With the Syntegon RPP platform, we are paving the way for future manufacturing. However, we have by no means reached the end of the road. Our unique combination of mechanical engineering, robotics and industry expertise makes

the Syntegon RPP platform one step of many, albeit a very important one." In parallel, Syntegon will continue to develop further innovative automation technologies – and will soon introduce new developments to the market

Syntegon Technology is a leading global process and packaging technology provider. Formerly the packaging division of the Bosch Group, the company, headquartered in Waiblingen (Germany), has been offering complete solutions for the pharmaceutical and food industries for over 50 years. About 6,000 employees at 30 locations in more than 15 countries generated a total revenue of 1.3 billion euros in 2020. The portfolio of intelligent and sustainable technologies includes stand-alone machines, as well as complete systems and services. Fields of application in the pharmaceutical industry are the production, processing, filling, inspection and packaging of liquid and solid pharmaceuticals (e.g. syringes and capsules). In the food industry, the portfolio includes process technology for confectionery as well as packaging solutions for dry foods (e.g. bars, bakery products and coffee), frozen foods and dairy products.



Andreas Schildknecht, Product Manager Robotics at Syntegon

www.syntegon.com

CIBUS TEC FORUM 2022, the new exhibition-conference loudly called for by the Food Industry

Now more than ever, food and beverage challenges are extraordinary. Food manufacturers are focused on adapting to changing consumer demands while suppliers become partners able to understand the future needs and offer technological innovations. Cibus Tec Forum, the new Exhibition & Conference on Food & Beverage Technologies Trends that will run in Parma (Italy) on October 25/26, 2022, acts as enhancement element of the current situation.

The survey conducted on Cibus Tec 2019 visitors showed that 76% considers the organization of Cibus Tec Forum as a useful networking and business chance, in view of Cibus Tec exhibition, postponed from October 2022 to 24/27 October 2023.

Cibus Tec Forum will offer, in just two days, the discovery of the most innovative solutions and the most influential trends that will impact the way of producing, packaging and distributing. The event will take place in an all-in-one hall with an innovative exhibition area, a plenary hall with

four top level conferences and five thematic rooms with highly specialized seminars.

9 future food & beverage trends

Cibus Tec Forum, in collaboration with its partners and sector leading experts, will offer cutting edge contents and insights about nine trends that will influence food and beverage sector: Food safety, Digitalisation, Sustainability, Innovations, Circular economy, Supply chain, Carbon Footprint, Alternative Foods, Ingredients.

Cibus Tec Forum plenary hall will host four top level conferences: Processing and packaging between digitalization and sustainability (October 25 / 10.00-13.00), Future trends in Food Safety (October 25 / 14.30-16.30), Supply chain and sustainability: from farm to fork (October 26 / 10.00-13.00), Innovative materials for a circular economy (October 26 / 14.30-16.30).

Five Vertical Showcase Sessions rooms will host highly specialized workshops dedicated to specific food sectors and future trends.

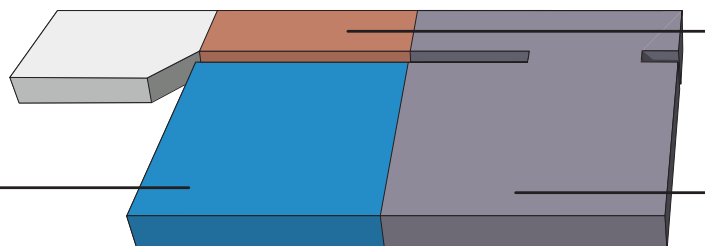


Cibus Tec Forum will offer an **ALL-IN-ONE HALL** with:

A **Plenary Hall** with four main conferences:

October 25, 2022
 • 10 AM - 1 PM - Processing and Packaging between digitalization and sustainability
 • 2.30 PM - 4.30 PM - Future trends in Food Safety

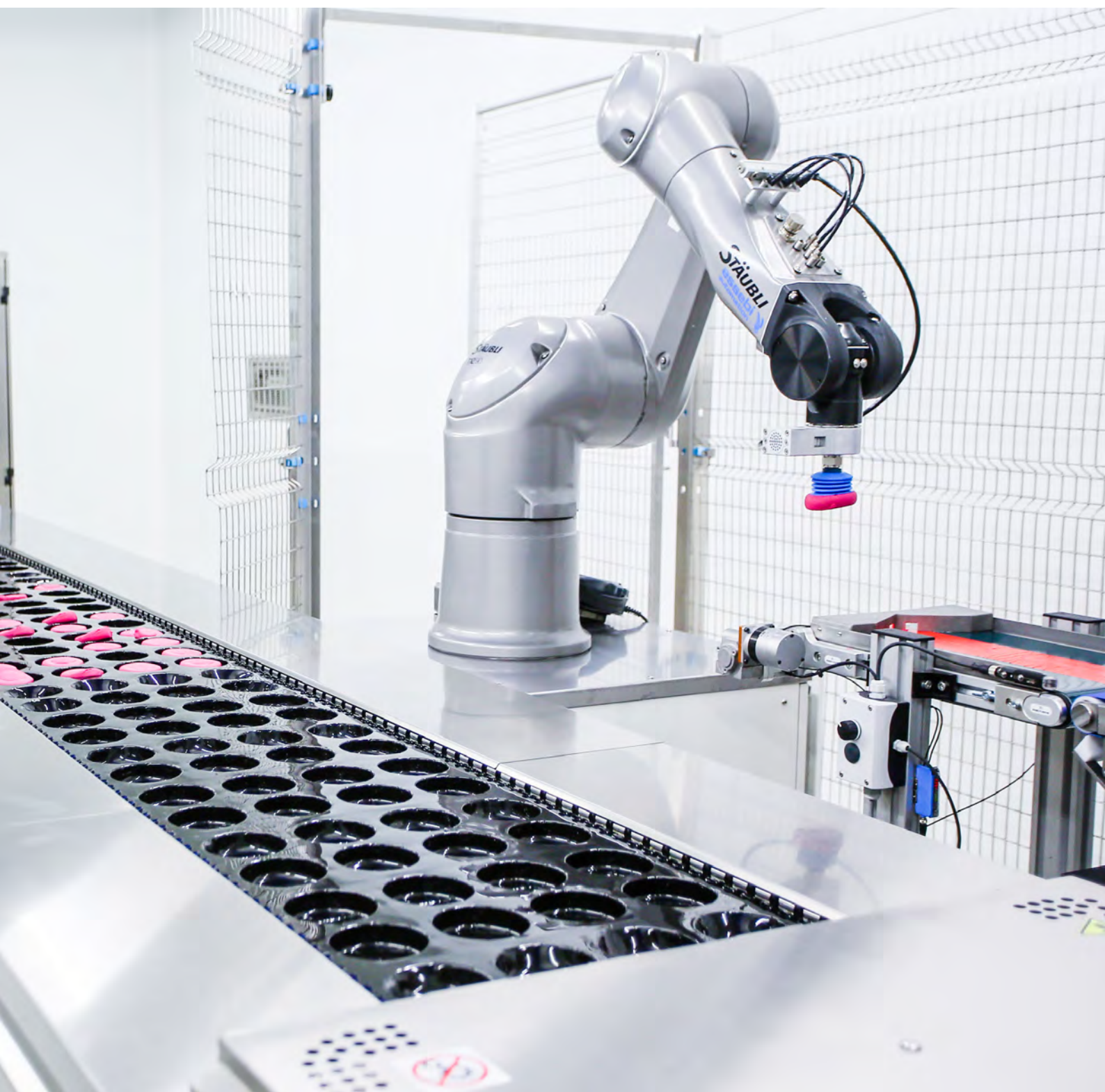
October 26, 2022
 • 10 AM - 1 PM - Supply chain and sustainability: from farm to fork
 • 2.30 PM - 4.30 PM - Innovative materials for a circular economy



Five Vertical Showcase Sessions Rooms with highly specialized workshops dedicated to specific food sectors and future trends

Exhibition Area with pioneering technologies, innovations, startups and live demos zones

*How do pioneering technologies
influence food & beverage future?*





innovations, to various real working production lines and pioneering start-ups that will take us directly to the smart factory of the future.

Cibus Tec Forum, with its perfect mix of the most progressive technology companies, key players in the food industry and most authoritative speakers from the national and international scene, will be a unique moment of sharing, business and networking for building a new global food and beverage strategy. 🏛️

www.cibustecforum.com

Business and networking opportunity

Cibus Tec Forum layout and our four turnkey booth options will allow food and beverage technology suppliers to show their solutions and innovations with an affordable investment.

Cibus Tec Forum exhibition area will be enriched by zones dedicated to



CIBUSTEC
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25|26 OCT. 2022 | PARMA | ITALY



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EXHIBITION & CONFERENCE

ON FOOD & BEVERAGE TECHNOLOGIES TRENDS

Cibus Tec Forum will
offer an **ALL-IN-ONE HALL** with:

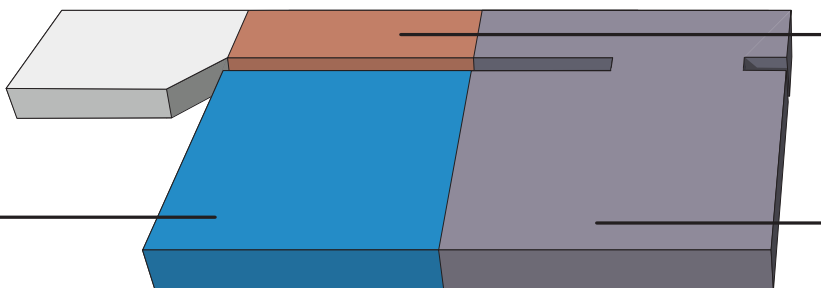
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October 26, 2022

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- **2.30 PM - 4.30 PM** - Innovative materials for a circular economy



**Five Vertical Showcase
Sessions Rooms**

with highly specialized
workshops dedicated
to specific food sectors
and future trends

Exhibition Area

with pioneering
technologies,
innovations, startups
and live demos zones

9 FUTURE FOOD&BEVERAGE TRENDS
25 TOP LEVEL CONFERENCES
500 FOOD TEC INNOVATORS
ENDLESS INSPIRATIONS

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PROCESS TECHNOLOGY and ingredients: IFFA shows how the production of food from alternative proteins succeeds

Whether from plants, insects or cultivated meat alternatives are increasing in importance. Alternative proteins are therefore one of the top themes at IFFA from 14 to 19 May 2022 in Frankfurt am Main. At least 200 of the around 900 exhibitors will present products for this sector.

The market for plant-based meat alternatives is experiencing high growth rates. In a recently published study, the Good Food Institute estimates that plant-based meat sales will comprise roughly 6% of the global meat market in 2030¹. In addition to soy or rice, other raw materials such as lupines, peas, wheat, sunflowers, hemp or even algae are used in the manufacture of these products. Research into new protein sources is also in full swing. For consumers, the added health value as well as the similarity to meat in terms of mouthfeel, taste and appearance play an important role. According to an analysis by the Boston Consulting Group², plant-based proteins could catch up with their animal counterparts in terms of price, taste and texture by around 2023.

A number of manufacturers who offer the raw material -protein flours or protein texturates -for further processing into meat alternatives present themselves at IFFA. Among the ingredients and casings manufacturers for plant-based products are ADM, Biospringer, Euroduna Food Ingredients, Givaudan, Hydrosol/Planteneers, Loryma, Soy Austria or Viscofan. "A delicious taste is



Innovative ingredients for the production of tasty meat alternatives. Source: Messe Frankfurt

the main criterion for consumers when purchasing plant-based products. It is important to take a holistic approach when developing new products; ingredients, technology, market trends, and culinary influences are all important factors to consider", knows Lucas Huber, Marketing Manager Plant Attitude Europe, Taste & Wellbeing at Givaudan. "Our expertise in taste, texture, colours, proteins, and ingredients enables us to co-create outstanding products with our customers as well as accelerate NPD." For Norbert Klein, Head of Research and Development at Loryma, texture is the key word to make plant-based alternatives catch on. "For perfect end products, we offer a wide variety of innovative extrudates, binding and stabilising systems as well as panades and coatings. Special attention is paid to a short ingredient list and attractive nutritional values -functional ingredients made from wheat can score here and

offer technological advantages at the same time." In order to reduce time and costs in product innovations, digital configurators, which allow manufacturers to put together their desired product within a very short time, play an important role. "Digitalisation is advancing in leaps and bounds in the B2B sector as well," explains Dr. Dorotea Pein, Head of Product

Management at Planteneers. "In this respect, it seemed only logical to us to offer a tool that makes digital product development enormously easier for our customers."

Processing technologies - amazingly similar to meat

Extrusion processes are often used to obtain a meat-like texture. Depending on the process, dry granulates can be produced that are further processed into minced-meat-like products or, through

¹ <https://gfi.org/resource/anticipating-plant-based-meat-production-requirements-2030/>

² <https://www.bcg.com/de-de/publications/2021/the-benefits-of-plant-based-meats>

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wet extrusion, fibrous protein structures for vegetarian escalopes, for example. Important suppliers at IFFA 2022 include Bühler and Coperion. The importance of extrusion for the production of meat alternatives is summarised by Stefan Gebhardt, General Manager Sales and Strategy, Business Unit Food & Pharma at Coperion: "With extrusion technology, all users, e.g. start-ups as well as larger manufacturers of meat alternatives, are provided with the appropriate core technology to meet the increasing market demand and to drive further product developments in this area. The flexibility of the twin-screw extruder enables the production of TVP (dry texturisation) and HMMA (wet texturisation) as well as numerous other extrudates on one machine. In addition, our technologies also enable the use of new protein alternatives such as hemp protein and microalgae."

Further processing into patties, cutlets or sausages is carried out using classic food processing machines such as cutters, mincers, fillers or forming machines, which are also used in meat processing. Numerous technology suppliers at IFFA will therefore offer not only their production lines for meat processing but also those for the production of meat alternatives and will be available to trade fair visitors to answer any questions they may have on the subject of processing alternative proteins. These include, for example, Albert Handtmann Maschinenfabrik, Gea Food Solutions, Marel, Marlen International, Maschinenfabrik Seydelmann, Metalquimia, Middleby, Provisur and Vemag Maschinenbau. "With plant-based products, it is first and foremost about offering consumers alternative options. To make the decision as easy as possible, shape and appearance play a crucial role in being able to classify the alternatives. In addition to classic applications such as burger patties, minced meat or sausages, we offer room for creative ideas, new shapes and individual solutions," knows Jens Thörnich, Product

Manager Plant Based Protein at Vemag Maschinenbau. "From semi-automatic filling to highly automated processes, we present a wide range for the production of various applications with alternative protein sources."

Cultured meat and insect proteins are in the starting blocks

Cultured meat is launching entirely new players. Start-ups in biotechnology from all over the world are working on the meat of the future from the laboratory. The principle is the same everywhere: Stem cells are taken from an animal via biopsy, both from muscle and fat tissue, in order to reproduce meat. The cells are then multiplied in large bioreactors and the cell masses can then be formed into patties, for example. The use of 3D printers or edible carriers creates clean meat products with texture. To increase acceptance and lower the price, companies are researching plant-based nutrient solutions to replace the animal serum that was previously necessary. What still needs to be done before cultured meat will be more widely available is summarised by Stephanie Jaczniakowska-McGirr, International Head of Food Industry & Retail at ProVeg International: "Although cultured meat shows promising possibilities, we identify three pressing challenges: More publicly-funded, open-source research is required to address some technical challenges. Further development of the regulatory framework is needed to create a supportive environment for producers and consumers. More widespread information is required in order to pave the way for the fair and objective reception of cultured meat in society."

Insect-based foods also have the potential to make a significant contribution to the protein supply of the future. At IFFA, the Fraunhofer Institute for Process Engineering and Packaging is placing a special focus on automated insect breeding and processing within the entire value chain for alternative proteins at the stand of the VDMA Food

Processing and Packaging Machinery Association. Max Hesse, group leader for machine and process development at the Fraunhofer IVV, explains: "Insect breeding and processing in Asia still largely takes place using manual labour. In order to be competitive, the industry, which is currently characterised by SMEs and start-ups in Europe and Germany, must achieve a high degree of automation. We at the Fraunhofer IVV are therefore researching, among other things, topics related to automated, industrial cultivation in order to make insect proteins available on a large scale."

As living organisms with different sizes/shapes and vitality parameters, insects pose great challenges for automation. With the help of sensor technology and AI-based analysis software, we want to sort insects with certain characteristics (e.g. fat/chitin content), for example, and unlock them for targeted use in secondary or profit-generating material streams." Further processing of the insect protein is then carried out via extrusion processes and processing machines, as with plant-based proteins.

IFFA 2022 will be the hub for discussions on alternative proteins. An attractive supporting programme with numerous lectures will provide further information. At least 200 of the total of around 900 exhibitors at IFFA offer products for the production of meat alternatives. Visitors can search for these companies in the IFFA Contactor, the exhibitor and product search for the fair, via the Special Interest "Plant-Based & Alternative Proteins".

With six trade fairs on four continents, Messe Frankfurt is accompanying the dynamic growth of the global food industry. Further information on the events in the "Food Technologies" portfolio can be found at the site. 🏠

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19-22/02/2022 
MADRID

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SIGEP

12-16/03/2022 
RIMINI

Fair for bakery, pastry, ice cream, coffee.

BEER&FOOD ATTRACTION

27-30/03/2022 
RIMINI

Fair for beers, drinks, food and trends.

mcT ALIMENTARE

31/03/2022 
VERONA

Fair on technology for the food&bev industry.

FRUIT LOGISTICA

05-07/04/2022 
BERLIN

Fair for fruit and vegetables.

VINITALY

10-13/04/2022 
VERONA

International wine & spirits exhibition.

ANUGA FOODTEC

26-29/04/2022 
COLOGNE

Fair on food and beverage technology.

PROWEIN

15-17/05/2022 
DUSSELDORF

International wine & spirits exhibition.

COSMOPROF

28/04/02/05/2022 
BOLOGNA

Fair for the cosmetic production chain.

CIBUS

03-06/05/2022 
PARMA

Fair of food product.

IPACK-IMA

03-06/05/2022 
MILAN

Exhibition for the packaging industry.

MACFRUT

04-06/05/2022 
RIMINI

Fair of machinery and equipment for
the fruit and vegetable processing.

MIDDLE EAST 2022/23

GULFOOD

13-17/02/2022 
DUBAI

Fair for food and hospitality.

GASTROPAN

03-05/04/2022 
ARAD


Fair for the bakery and confectionery.

HOSPITALITY QATAR

21-23/06//2022 
DOHA

Fair of Hospitality and HORECA.

DJAZAGRO

30/05-02/06/2022 
ALGERS

Fair for companies
of the agro-food sector.

IRAN FOOD BEV TEC

07-10/06/2022 
TEHRAN

Fair for food,
beverage&packaging technology.

PROPAK ASIA

15-18/06/2022 
BANGKOK


Fair for packaging, bakery, pastry.

ANUTEC

14-16/09/2022 
MUMBAI

Fair for the food&beverage industry.

PACPROCESS FOOD PEX

23-25/11/2022 
MUMBAI


Fair for product from packaging.

WOP DUBAI

22-24/11/2022 
DUBAI


Fair for for fruits and vegetables.

PROPAK VIETNAM

09-11/11/2022 
SAIGON

Fair for packaging, bakery, pastry.

GULFOOD MANUFACTURING

08-10/11/2022 
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Fair for packaging and plants.

GULFHOST

08-10/11/2022 
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GULFOOD

20-24/02/2023 
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Fair for food and hospitality.

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SPS/IPC DRIVES/ITALIA

24-26/05/2022 

PARMA

Fair for industrial automation sector.

HISPACK

24-27/05/2022 

BARCELONA

Technology fair for packaging.

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09-11/06/2022 

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Fair for the manufacturing industry.

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29-30/06/2022 

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International packaging trade fair.

FISPAL

21-24/06/2022 

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Fair for product from packaging.

DRINKTEC

12-16/09/2022 

MONACO

Fair for the beverage, liquid food industry.

FACHPACK

27-29/09/2022 

NUREMBERG

International packaging trade fair.

POWTECH

27-29/-09/2022 

NUREMBERG

The trade fair for powder processing.

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26-27/10/2022 

VERONA

Fair for automation, instrumentation, sensors.

MCT COGENERAZIONE

26/10/2022 

MILAN

Exhibition for cogeneration.

SIAL

15-19/10/2022 

PARIS

Fair on food products.

SUDBACK

22-25/10/2022

STUTTGART

Fair for bakery and confectionery.

CIBUS TEC FORUM

25-26/10/2022 

PARMA

Exhibition & Conference on Food & Beverage Technologies Trends.

SIMEI

15-18/11/2022 

MILAN

Fair for vine-growing, wine-producing and bottling industry.

ALL4PACK

21-24/11/2022 

PARIS

Exhibition about packaging technology.

INTERPACK

04-10/03/2023 

DÜSSELDORF

Technology focused on packaging, bakery, pastry technology.

TUTTOFOOD

08-11/05/2023 

MILAN

Fair B2B show to food & beverage.

HOST

13-17/10/2023 

MILAN

Fair for bakery production and for the hospitality.

IBA

22-26/10/2023 

MONACO

Fair for the bakery and confectionery industry.

CIBUS TEC

24-27/10/2023 

PARMA

Exhibition & Conference on Food & Beverage Technologies Trends.

BRAU BEVIALE

14-16/11/2023 

NUREMBERG

Fair of production of beer and soft drinks.

EAST MARKETS 2022/23

BEVIALE MOSCOW

29-31/03/2022 

MOSCOW

International trade fair for the beverage industry..

UPAKOVKA

24-27/01/2023 

MOSCOW

International packaging machinery exhibition.

INPRODMASH

13-15/09/2022 

KIEV

International packaging machinery exhibition.

MODERN BAKERY

2023 

MOSCOW

Fair for bakery equipment and food ingredients.

AGROPRODASH

10-14/10/2022 

MOSCOW

Fair of machinery and equipment for agroindustrial industry.

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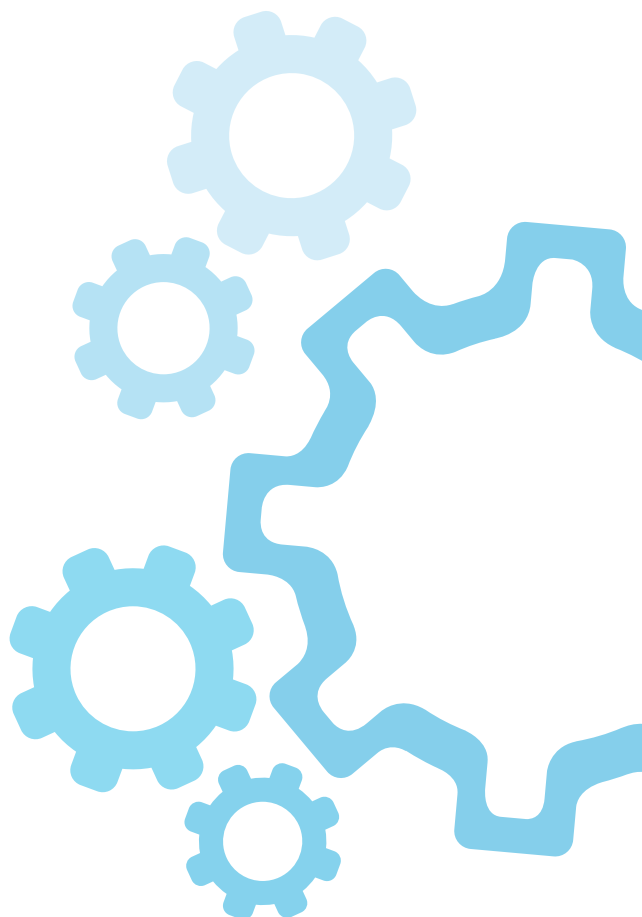
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