

No. 20

The First Specialized Monthly Magazine of Tray Sealer, Thermoforming and Vacuum Chamber Packaging Machinery Industry

VORMEK

Vormek an Innovation-based Machinery Company, an Knowledge & Progress Center with Superior Technology and High Reputation in its Field

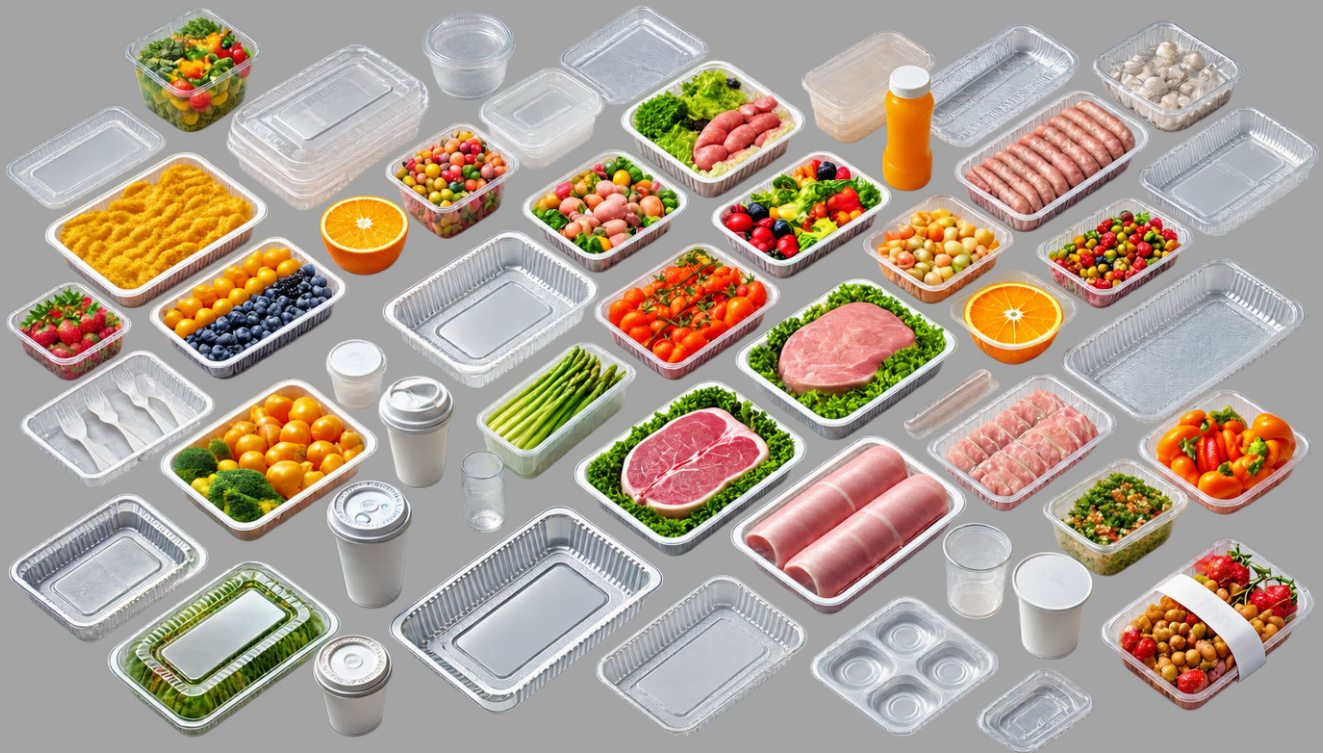
Editor-in-Chief: Mr. Simon Füllenbach – Designer of Vormek Packaging Machines and Founder of this Company
Editorialist: Dr. David Sterling (Faculty Member of University and Marketing and Sale Consultant)

Editor and Translator: Dr. Stefanie Kaiser
Editorial Board: Marketing and Sales Unit of Vormek

Monthly Newsletter No. 20 / September 2026



**MAP; The Winning Solution for Dried Fruit
Packaging Extended Shelf Life
Preserved Flavor, and Reduced Waste**



ISO 9001 Certificate in the Field of
Packaging Machines Manufacturing



Achieving CE Certificate from European
Country in the Field of Packaging
Machines Manufacturing



License Holder and Director-in-Charge:
Simon Füllenbach



Editor-in-Chief:
Dr. David Sterling
Faculty Member of University



Assistant Editor:
Yasmin Arden



Editor and Translator:
Dr. Stefanie Kaiser



Graphic Designer and Layout Artist:
Mr. Ben Stevens

Website: [Vormek.Com/ En-Ar-Ru-De](http://Vormek.Com/En-Ar-Ru-De)
Mobile Phone: +44 7552 732408
Email: info@vormek.co

VORMEK.COM
EN-AR-RU-DE



Content

Editor's Note	04
Accurate, consistent, and hygienic filling of high-viscosity products a capability delivered by Piston Cylinder Filler technology.	05
MAP Packaging for Dates	08
Date series packaging	09
The Impact of Improper Film Guide Roller Performance on Package Integrity	10
Jan Food Company's Experience in Packaging Different Date Varieties	11
Vacuum-Sealed Packaging: A Key to Expanding Date Export Markets	12
Safe Industrial Group: A Pioneer in Advancing Modern Nut-Processing Technologies	13
Reliable Packaging for Export Markets: Takarrum Food's Successful Experience in the Date Industry	14



VORMEK

Editor's Note



Dr. David Sterling

Warm greetings and respect,

This specialized electronic magazine, with a focus on developing technical knowledge, sharing industrial experience, and introducing modern packaging technologies, has always sought to provide a platform for improving productivity and enhancing the competitiveness of the food industry. In the twentieth issue of this publication, we focus on the date industry—a strategic product that, in addition to holding a special place in food culture, represents significant export potential and can play an important role in the development of international markets.

Although dates naturally have a relatively long shelf life, maintaining their visual quality, preventing contamination, controlling moisture, avoiding product stickiness, and providing packaging that meets the standards of both local and export markets are among the most important challenges faced by producers in this industry. Today, packaging is no longer merely a means of preserving a product; it has become one of the key factors in creating added value, increasing consumer trust, and strengthening a brand's position in competitive markets.

In this issue, we have taken a specialized approach to examining the role of tray sealers, vacuum chamber machines, Modified Atmosphere Packaging (MAP) technology, and other modern solutions in improving date packaging quality. By analyzing global trends and the requirements of export markets, we also demonstrate how selecting the right packaging technology can extend product shelf life, reduce waste, and create new opportunities for market development and exports.

If your organization aims to improve packaging quality, increase the commercial value of its products, establish a stronger presence in global markets, and create a sustainable competitive advantage, we hope the content of this issue will serve as a practical guide for your technical decisions and future investments.

It is a privilege to continue receiving the trust and support of managers, specialists, and producers throughout the food industry.

Together, toward a prosperous and developed future.

Filling High-Viscosity Products

with Precision, Consistency, and High Hygiene Standards

Made Possible by a Piston Cylinder Filler

Mr. Simon Füllenbach
(CEO of Vormek)



In many food production lines, the filling stage may initially appear to be a simple process. However, when the product has high viscosity, a semi-solid structure, or contains solid particles suspended in a thick liquid, this stage can become one of the most challenging parts of the production line.

Products such as Olivier salad, sauces containing vegetable pieces, hummus, tahini, jam, chocolate spread, and many other food products do not exhibit the same flow behavior as water or low-viscosity liquids. Moving these materials through the transfer path, controlling the output quantity, and preserving the product's natural structure require a different solution based on precise engineering principles.

Under such conditions, conventional filling methods may cause several problems, ranging from variations in package weight and reduced product consistency to damage to food texture, increased waste, and more difficult cleaning operations.

In fact, the issue is not simply transferring the product from a tank to a container; the main challenge is the precise, hygienic, and controlled transfer of a material with complex physical characteristics.

The solution to this challenge is the use of specialized filling technologies—equipment whose operating structure is designed according to the actual behavior of the product. One such solution is the Piston Cylinder Filler, which uses a precise cylinder-and-piston mechanism to fill high-viscosity and semi-solid products with high accuracy.



Challenges in Filling High-Viscosity Products

Food products differ significantly in terms of their flow behavior. Some products have high viscosity, meaning they strongly resist flow. Others have a semi-solid structure and may contain solid pieces or particles of different sizes.

These characteristics mean that general-purpose filling machines may not always meet manufacturers' production requirements.

For high-viscosity products, several factors must be controlled simultaneously:

- Precise filling volume in each package
- Prevention of deformation or damage to the product structure
- Prevention of product residue in transfer paths
- Maintenance of hygienic processing conditions
- Fast cleaning and machine preparation

For example, with a product such as Olivier salad, simply increasing transfer pressure is not an appropriate solution, as excessive pressure may alter the product structure and reduce its final quality.

For products such as mayonnaise-based sauces containing vegetable pieces, the flow path, nozzle diameter, and transfer mechanism must also be designed so that the particles in the product do not become blocked or damaged.

Therefore, the selection of filling equipment should be based on the actual characteristics of the product rather than solely on production capacity.



Piston Cylinder Filler:

Combining Mechanical Precision with Process Control

The ViscoFill – PFL-500 is a pneumatic Piston Cylinder Filler designed for filling high-viscosity, semi-solid, and temperature-sensitive products.

The operating principle of the machine is based on the reciprocating motion of a piston inside a cylinder.

In this mechanism, a specific quantity of product first enters the cylinder and is then directed toward the nozzle through the controlled movement of the piston. The output volume is directly related to the cylinder diameter and the piston stroke length. Therefore, by correctly selecting these parameters, the filling quantity of each package can be controlled with high accuracy.

The machine operates in two main stages:

1. Suction Phase

During this stage:

- The piston moves backward.
- The inlet path is opened by a 3-Way Valve.
- The product enters the cylinder from the tank or hopper.
- The incoming quantity is controlled according to the designed cylinder volume.

2. Discharge / Filling Phase

During this stage:

- The piston begins moving forward.
- The inlet path closes, and the outlet path toward the nozzle is activated.
- The product is transferred into the container under controlled pressure.

One of the important features of this design is the possibility of using an independent piston for each nozzle. This capability increases accuracy, reduces volume differences between outlets, and allows better adjustment of the filling process.

Hygienic Design: An Integral Part of Food Equipment Engineering

In the food industry, the mechanical design of a machine is not limited to its speed and performance. Every component that comes into contact with the product must be designed according to Hygienic Design principles.

Product particles remaining inside internal passages can create conditions for microorganism growth and Cross-Contamination. For this reason, the design of the product flow path, connection types, and cleanability are particularly important.

In the PFL-500, product-contact components are designed using Stainless Steel 304 / 316, providing suitable corrosion resistance and allowing frequent cleaning.

The ability to easily disassemble components also provides better access for cleaning and helps reduce production line downtime.

Features such as:

- Design without dead zones
 - Compatibility with CIP (Clean-in-Place) systems
 - Use of Anti-Drip Nozzles
 - Prevention of product residue in the transfer path
- play an important role in improving the safety of the final product.

Selecting the Right Filler: A Decision Beyond Production Capacity

Selecting the appropriate filling machine is not based solely on production speed. Several factors must be evaluated together:

Product Viscosity

High-viscosity products require cylinders, pistons, and transfer paths designed according to the product's resistance to flow.

Product Structure and Particle Size

Products containing solid pieces require suitable nozzles and flow paths designed to prevent blockages.

Container Type and Fill Volume

Container dimensions, filling quantity, and the space required by the product directly affect the selection of cylinder size and piston stroke.

Production Capacity

In high-capacity production lines, Multi-Nozzle designs can increase production speed.

Production Line Integration

An industrial Filling Machine must be mechanically, electrically, and functionally compatible with the other equipment in the production line.

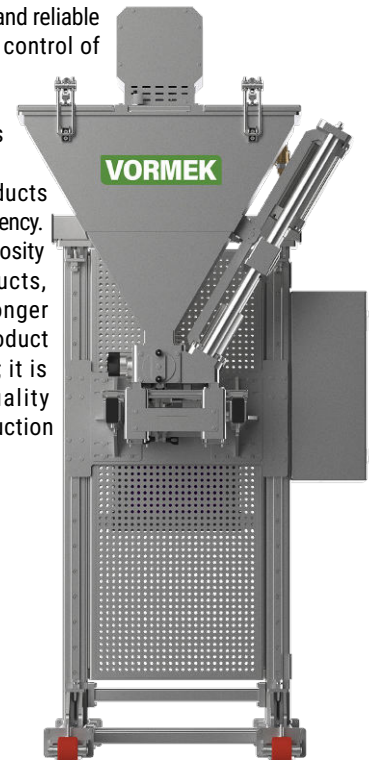
From Reducing Waste to Increasing Production Efficiency

Using an automatic filling machine is not simply about replacing one piece of equipment with another; it represents an effective change in the performance of the entire production process.

High volumetric accuracy reduces weight variation between packages and prevents product waste. Reducing dependence on operator performance also creates greater production consistency.

In manual systems, factors such as fatigue, working speed, and operator experience can affect the final quality of the packages. In contrast, automatic systems such as the PFL-500 provide more stable and reliable production through precise control of the operating cycle.

In addition, a design that facilitates cleaning reduces Downtime between the production of different products and increases overall line efficiency. In the production of high-viscosity and semi-solid food products, the filling process is no longer simply the transfer of a product from one point to another; it is an integral part of the quality control, hygiene, and production efficiency chain.



Precision Beyond Standards: How Accurate Is the Precise PTF-400 Soft-Film Thermoforming Machine?

When the Smallest Error Changes Packaging Quality

In food manufacturing facilities, the difference between ordinary packaging and professional packaging is sometimes hidden in details that are not immediately noticeable.

A film movement of just a few tenths of a millimeter, a slight change in mold temperature, fluctuations in vacuum pressure, or even a small vibration in the machine's motion mechanism can affect the appearance of the package, sealing quality, the final shape of the container, and ultimately consumer satisfaction.

This becomes even more important in Thermoforming Machines because, with this technology, the package is formed from an initial film, and all stages of container forming, product placement, sealing, and cutting are carried out in one continuous process.

For this reason, the final packaging quality depends on precise coordination among a range of mechanical, electrical, pneumatic, and control systems.

The Precise PTF-400 was designed specifically to meet this requirement. It can operate with flexible films, rigid films, and skin packaging. However, here we will focus on one specific capability: soft-film thermoforming, where engineering precision, industrial hygiene, and advanced automation work together to produce high-quality, consistent, and standardized packaging.

Soft-Film Thermoforming: A Machine Developed by Specialists

At first glance, the operating process of a thermoforming machine appears simple. The film roll enters the machine, passes through the pre-heating stage, is formed into a container at the Forming station, the product is placed inside the package, and then Vacuum, MAP (Modified Atmosphere Packaging), and Sealing processes are performed. Finally, the packages are separated from one another by the cutting system.

However, behind this apparently simple process lies a series of precise engineering calculations and coordinated operations.

The final quality of the package depends on factors such as:

- Precise film temperature during the forming stage
- Air and vacuum pressure used in the mold
- Film movement speed
- Precise positioning of the molds
- Quality of the sealing section
- Proper operation of the cutting system

Therefore, designing a Thermoforming Machine is not simply about building a mechanical assembly; it requires a detailed understanding of material behavior, thermal processes, motion control, and food industry requirements.

Motion Mechanism Engineering: The Foundation of Precision and Stability

One of the most important factors affecting the quality of thermoforming machines is the precision of their motion mechanisms.

In this equipment, every movement must be carried out with minimal vibration and maximum repeatability, because even the smallest instability can directly affect container forming quality, sealing consistency, and cutting accuracy.

In the design of the Precise PTF-400 soft-film thermoforming machine, the various sections are engineered so that component movement occurs with minimal friction and vibration.

- Pre-heating
- Forming
- Sealing
- Cutting

The use of corrosion-resistant shafts, phosphor bronze bushings with graphite, and precisely designed moving points helps reduce wear and increase machine stability during long operating cycles. One important detail of this design is the ability to adjust the mold position with an accuracy of one-tenth of a millimeter. This feature reduces setup time during mold changes or production adjustments and improves machine operating accuracy.

Temperature Control: A Key Factor in Forming and Sealing Quality

• In the thermoforming process, temperature is one of the most important quality-control parameters.

• During Forming, the film must become sufficiently flexible to properly take the shape of the mold. However, excessive temperature can alter the properties of the film or reduce packaging quality.

• The temperature of the pre-heating and sealing sections is controlled by a PID (Proportional-Integral-Derivative) system.

This system provides stable and precise temperature control and ensures that:

• Forming quality remains consistent throughout production.

• Changes in ambient temperature have less impact on the process.

• Sealing quality remains uniform across all packages.

• The mold cooling system, with a properly designed water circulation path, enables better mold temperature control and increases production process speed.

Film Control: Ensuring Alignment Between Packaging and Product Appearance

For many food products, packaging appearance forms an important part of the customer experience.

This becomes even more important when printed films are used, because even the smallest film displacement can cause the printed design to become misaligned with the container position. The movement system for the bottom and top films is designed using:

- Powder Brake
- Pneumatic Shaft
- Film Tension Control
- PLC Control

This system allows the film to move with uniform tension and maintains its position throughout the production process.

The result is packaging with more precise appearance, higher quality, and reduced waste.

Intelligent Control: Simplifying the Management of a Complex Process

As production lines become more complex, control systems play an increasingly important role in machine performance.

The thermoforming machine is equipped with a Siemens PLC system and a 14-inch HMI touchscreen, allowing precise control and adjustment of various machine processes.

The operator can manage different machine parameters and access the information required for maintenance and operation.

The availability of technical instructions and required diagrams within the machine also simplifies servicing and maintenance and reduces production line downtime.

Conclusion: True Precision Is the Result of Coordinating Thousands of Engineering Details

In advanced packaging machinery, precision is not merely a technical feature; it is the result of coordination among a series of engineering decisions.

From material selection and the design of motion mechanisms to temperature control, vacuum systems, automation, and compliance with hygienic principles, all components must operate within a coordinated structure.

The Precise PTF-400 is an example of an engineered Thermoforming solution designed to meet the needs of food manufacturers, with a focus on precision, stability, and expandability.

Ultimately, the quality of professional packaging does not begin when the product leaves the production line. It begins at the moment a machine with thousands of mechanical and control components is designed and built with engineered precision.



MAP Packaging for Dates: **A Modern Solution for Pest Control, Weight Retention,** **and Prevention of Sugar Spotting**

Dates are one of the most important horticultural products and hold a significant position in both export markets and domestic consumption. However, producers and exporters of this valuable product have faced numerous challenges for years during storage and distribution. Storage pests, weight loss caused by moisture evaporation, and Sugar Spotting are among the issues that affect the quality and economic value of dates. Traditional methods used to address these challenges have not always been effective and, in some cases, have faced environmental restrictions and limited international acceptance. In this context, Modified Atmosphere Packaging (MAP), using advanced tray-sealing machines, has emerged as a scientific, integrated, and proven solution for addressing these problems simultaneously.

Traditional date fumigation methods using methyl bromide have become obsolete due to environmental restrictions and limited international acceptance. Reliable scientific research shows that a carbon dioxide (CO₂)-rich atmosphere is a safe and highly effective alternative. Using a gas mixture with a high concentration of carbon dioxide, under specified temperature and time conditions, can eliminate pests present in dates without causing damage to the product's texture.

Sugar Spotting is one of the common visual defects found in packaged dates, appearing as white or brown spots and reducing the commercial value of the product. Studies have shown that increasing the carbon dioxide concentration in MAP packaging directly reduces this defect. Using an appropriate gas mixture with a high concentration of carbon dioxide, combined with storage at a suitable refrigeration temperature, has produced the best results in preventing Sugar Spotting. This method also helps prevent fermentation and the growth of yeasts that can affect the product's flavor.

Dates, particularly during the Khalal stage when they contain high levels of moisture, are susceptible to weight loss and shriveling, which can disrupt product weight tolerances. Scientific test results show that dates packaged using MAP experience significantly less weight loss compared with conventionally packaged dates. The humid and controlled atmosphere inside MAP packaging helps prevent moisture loss and maintain the product's standard weight. Retaining moisture means retaining weight and, consequently, maintaining standard weight tolerances at the point of sale.

A tray sealer equipped with Modified Atmosphere Packaging (MAP) capability provides an effective platform for implementing these solutions simultaneously. By removing the air from the package and injecting an optimized gas mixture with a high concentration of carbon dioxide, the machine creates a lethal environment for pests, helps prevent Sugar Spotting, and maintains the product's standard weight by preserving moisture. The final result is a significant increase in the shelf life of dates and the delivery of a high-quality product that complies with export standards.

Packaging

Series



This Section: Dates

1

The scientific name of the date fruit is *Phoenix dactylifera*. It grows in hot and dry climates and is considered one of the earliest fruits cultivated by humans. Today, dates are one of the most widely consumed dried fruits worldwide.



2

Factors That Cause Spoilage in Different Types of Dates

Semi-Dry Dates:

- Mold growth and contamination due to moderate moisture content
- Microbial contamination caused by weak packaging
- Insect infestation and pest activity
- Partial spoilage due to high temperatures
- Absorption of environmental odors

Dry Dates

- Microbial contamination (mold, fungi, bacteria)
- Dust, dirt and foreign particles
- Insects and larvae (such as date moth infestation)
- Heavy metals and toxic residues
- Contamination from improper packaging or poor hygiene conditions (unsuitable temperature and humidity)

Moisture-Containing (Soft) Dates:

- High probability of enzymatic and microbial spoilage
- Rapid growth of fungi and molds
- Contamination due to non-standard packaging conditions
- Absorption of environmental moisture and odors
- High sensitivity to storage temperature (risk of fermentation or sugar crystallization)

3



Challenges of Traditional Date Packaging in the Industry

Traditional packaging methods have significant disadvantages, including the inability to provide a proper barrier against air and moisture, which are two major factors contributing to microbial growth and rapid shelf-life reduction in dates. In addition, the limited variety of packaging designs and their unattractive appearance reduce market appeal and do not support long-term storage of dates.

4

Analysis of Date Shelf Life in Traditional Packaging and MAP Based on ScienceDirect Articles

Dry Dates

Dry dates, which usually have a moisture content below 20%, have a shelf life of approximately 1 to 3 months under ambient conditions (around 20°C).

MAP Packaging:

Using a combination of nitrogen and carbon dioxide gases along with multi-layer films, the shelf life can be extended to several months under temperatures between 0 and 4°C. This method is particularly effective at low temperatures.



5

Semi-Dry Dates

Traditional Packaging:

This type of dates has a higher moisture content (approximately 30-40%). Under ambient conditions, it has a shelf life of only 2 to 4 weeks and becomes susceptible to microbial spoilage.



MAP Packaging:

Under controlled conditions with suitable gases, the shelf life can be extended to 2 to 3 months at temperatures between 1 and 4°C. This technology is highly effective in preserving the colour and texture of dates.

6

Moisture-Containing Dates (Semi-Dry Dates)

Traditional Packaging:

Semi-dry dates have a shelf life of only 4 to 6 weeks even under cold storage conditions, and they become spoiled within 1 to 2 weeks at ambient temperature.



MAP Packaging:

If the carbon dioxide gas level is maintained at approximately 20-25%, the shelf life of these dates can be extended to up to 8 weeks.

7

Moisture Absorption of Dates

Conventional Packaging (such as paper, plastic or carton):

In this method, dates are exposed to air and moisture is absorbed from the surrounding environment. This leads to significant weight loss, especially under high temperature or dry environmental conditions. The moisture absorption rate can reach up to 5-10% during the storage period (3 to 6 months).

MAP Packaging (Modified Atmosphere Packaging):

In this method, the internal atmosphere of the package is controlled (for example, reducing oxygen and increasing carbon dioxide), which reduces metabolic activity and moisture exchange. As a result, the moisture absorption of dates is significantly reduced and usually remains within the range of 1-3% during the same storage period.

8

Conclusion:

MAP packaging has a significant advantage over conventional packaging because it reduces microbial growth by maintaining humidity and reducing physical and chemical spoilage. It preserves the product's original quality and weight during storage. This not only leads to economic savings but also improves the final product quality.



9





Mr. Alexander Hoffmann
(Deputy CEO of Vormek)

The Impact of Improper Film Guide Roller Performance on Package Integrity

In the packaging process, film guide rollers act as “lateral displacement controllers” and “surface tension regulators” for the film. The ultimate purpose of this section is to ensure that the film is positioned accurately, flat, and without unwanted tension over the tray edges before the sealing stage. Any deviation in roller performance can affect packaging quality.

If the rollers are misaligned or the edge-guiding system malfunctions, the film shifts laterally relative to the tray. This can cause the edges of the sealing jaws to contact the film surface or empty areas instead of the tray rim, creating permeable zones that can lead to product oxidation and reduced shelf life.



The rollers are responsible for guiding the film under a specific level of tension.

- Excessive tension can cause the film to become too thin in critical areas. This thinning reduces the film’s mechanical resistance to sealing-jaw pressure and may result in tearing or the formation of micro-wrinkles along the edges.

- Insufficient tension causes the film to become slack. In this condition, the film may vibrate or settle unevenly over the tray.

- Quality result: Surface wrinkles may form, creating air pockets beneath the film in the sealing area and preventing the formation of a strong and uniform seal.



Jan Food Company's Experience in Packaging Different Date Varieties

According to Jan Food Company, experience in date packaging shows that each variety has different packaging requirements depending on its texture, moisture content, and storage conditions. Within the company, several date varieties have been evaluated and packaged using different formats, including tray packaging, cup packaging, and conventional packaging.

One of the most important challenges associated with these products is maintaining the integrity of the dates and preventing quality deterioration during packaging and storage. Pest infestation and sugar spotting are among the issues that can reduce the product's visual quality and marketability. Therefore, quality control before packaging, as well as maintaining appropriate storage conditions, is highly important.

From the perspective of Jan Food Company, suitable packaging should not only provide an attractive appearance but also protect the product against environmental factors and secondary contamination. For this reason, the use of a tray sealer and the creation of a uniform and reliable seal play an important role in maintaining package hygiene and quality. The correct selection of the container, packaging film, and sealing temperature must also be adapted to the type of date.

In date packaging, the objective is not merely to increase production speed. Maintaining product integrity, preventing damage during transportation, preserving visual quality, and delivering a consistent and hygienic product to the consumer are equally important. The experience of Jan Food Company shows that combining a high-quality product, proper preparation, and the appropriate packaging method and equipment can have a significant impact on the final quality of packaged dates.

VORMEK



Dr. David Sterling
(Editor-in-Chief)

Vacuum-Sealed Packaging: A Key to Expanding Date Export Markets

PhD in Marketing Management

A B2B Marketing Management Perspective

In international markets, product quality is not the only factor determining success; the **quality of product presentation** is equally important. Many date producers believe that having a high-quality product is sufficient to enter export markets, while experience in European, Gulf, East Asian, and North American markets shows that purchasing decisions by wholesale buyers are increasingly influenced by packaging type, hygiene standards, and the product's logistical suitability.

From a B2B marketing perspective, packaging is no longer the end of the production process; it is the beginning of the sales process.

Packaging: The First Negotiation Tool with International Buyers

In export negotiations, buyers often evaluate the quality of the packaging before assessing the quality of the dates themselves. This is because packaging reflects the producer's level of maturity, quality-control capabilities, and readiness to compete in global markets.

Dates offered in standardized vacuum-sealed packaging communicate several important messages to the buyer:

- The producer complies with international standards.
- Product quality is maintained throughout the supply chain.
- The risk of spoilage, contamination, and product damage is reduced.
- The brand values the end consumer's experience.

For this reason, professional packaging can shorten commercial negotiations and increase the likelihood of reaching an agreement.

Risk Reduction: The Primary Concern of B2B Buyers

In B2B sales, buyers do not simply purchase products; they purchase lower risk.

An importer ordering a container of dates may be concerned about:

- Quality deterioration during sea transportation
- Changes in product appearance
- Secondary contamination
- Moisture leakage
- Packages opening
- Increased warehouse waste

Vacuum-sealed packaging, by creating a secure and hygienic seal, addresses a significant portion of these concerns. The result is reduced risk for the buyer and increased trust in the exporting brand.

In conclusion, in the global date market, competitive advantage does not depend solely on product quality. It also depends on the producer's ability to offer a product that is safe, standardized, attractive, and aligned with the needs of international buyers. Vacuum-sealed packaging using tray-sealing machines creates a bridge between production quality and commercial success—a bridge that can increase the confidence of international buyers, enhance brand value, and facilitate the expansion of export markets.

In the world of B2B trade, **dates are not sold; trust is sold**. And the first place where that trust is built is the product's packaging.





Safe Industrial Group:

A Pioneer in Advancing Modern Nut-Processing Technologies

Introduction: A Legacy of Innovation and Expertise

In today's world, the agriculture and food-processing industries depend more than ever on precision, speed, and waste reduction. As the dried fruit and nut industry continues to expand globally, there is a growing need for technologies capable of preserving and increasing the added value of these strategic products. Safe Industrial Group, recognizing this critical need, began its operations in 2009 with the goal of transforming the industrial infrastructure used for dried fruit and nut processing.

Under the management of **Andrew Safe, CEO**, and the technical supervision of **Adrian Safe, Technical Director**, the company has successfully combined technical expertise with current international standards to introduce a new generation of machinery that not only increases production speed but also ensures output quality in line with export standards.

Mission and Vision: More Than a Machinery Manufacturer

Safe Industrial Group is not simply a machinery manufacturer; we are a technology partner for growers and exporters. Our mission is to replace traditional and costly processing methods with intelligent systems that minimize kernel waste and maximize profitability. We believe that every dried fruit and nut product is a valuable asset, and proper processing is the key to building a strong presence in global markets.

Product Portfolio: Technology in the Service of Quality

Engineering precision and quality are common characteristics across all our products. Below are the three main product categories developed by **Safe Industrial Group**:

1. Roller Sorting Machine

The first step in professional processing is achieving product uniformity. The roller sorting machine developed by our technical team can accurately size a wide range of dried fruits and nuts, including walnuts, pistachios, almonds, hazelnuts, peanuts, and even delicate products such as dried mulberries.

Competitive Advantage: Eliminating human error and providing precise millimeter-based classification, which is a key prerequisite for successful cracking processes and premium export packaging.

2. Hard-Shell Cracking Machine

The greatest challenge in nut processing is breaking the hard shell while minimizing damage to the kernel. **Safe Industrial Group's** hard-shell cracking machines are optimized for products such as pistachios, almonds, walnuts, and hazelnuts.

Fast and Easy Adjustment for Different Products: The precise engineering of this machine allows it to be adjusted and prepared for different products and sizes in the shortest possible time.

3. Shell and Kernel Separation Machine

After cracking, effective separation of the shell from the kernel is highly important. With the **Safe** air separation machine, different products can be processed into four size categories, with kernels separated from shells and waste.

Vibratory Technology: The key advantage of this machine compared with other systems is its use of vibratory technology. This technology replaces the eccentric mechanism, resulting in faster and more accurate separation.

Conclusion

With **17 years of experience**, **Safe Industrial Group** has become a recognized name in the dried fruit and nut processing machinery industry. We proudly stand alongside growers and distributors, providing a new generation of processing machinery designed to strengthen product quality and competitiveness in global markets.



Reliable Packaging for Export Markets: Takarrom Food's Successful Experience in the Date Industry

As part of the ongoing discussions conducted by the after-sales service department, this time we spoke with **Michael Morgan, CEO of Takarrom Food**, a company active in date production and packaging. By using our semi-automatic rotary machines, the company has been able to establish professional and standardized packaging for both domestic and export markets.

The company packages its products using a tray sealer with a vacuum system combined with nitrogen gas flushing. This process has extended the shelf life of its dates by more than four months compared with conventional conditions, while fully preserving product quality during storage. According to Mr. Morgan, this type of packaging has played an important role in maintaining the freshness, appearance, and quality of the dates, particularly during export transportation.

Takarrom Food currently uses two different molds:

One is a 50-gram mold for bite-sized dates, with a daily production of approximately 8,000 packages, while the second is a 250-gram mold used to package between 3,500 and 4,000 units per day. This entire production volume is completed within approximately 6 to 7 working hours, and the whole process is managed by a single operator, demonstrating the machine's high efficiency and ease of operation.

The company's vacuum-sealed products are mainly exported to Russia, Turkey, the UAE, China, and Malaysia. According to Mr. Morgan, they have not experienced a single case of seal opening or packaging damage during transportation. This represents a significant advantage for export products that must travel long distances.

Mr. Morgan also noted that customer response to this type of packaging has been highly positive and that the professional appearance and high packaging quality have had a direct impact on market satisfaction. He added that during peak sales periods, particularly during Ramadan, the company's order volume increases several times over, and the machine is able to handle the increased production without difficulty.

He further explained that, due to growing order volumes and the expansion of export markets, **Takarrom Food** is currently considering the use of higher-level equipment such as thermoforming machines, as well as ordering new molds to expand the variety of its product packaging. This reflects the company's plans to increase production capacity and strengthen its presence in international markets.

In conclusion, he emphasized:

"Seal quality and strength, as well as shelf life, were extremely important to us in export operations, and fortunately, we have experienced completely reliable performance across all shipments. Product shelf life has increased, and the more professional packaging has also resulted in very positive customer feedback."



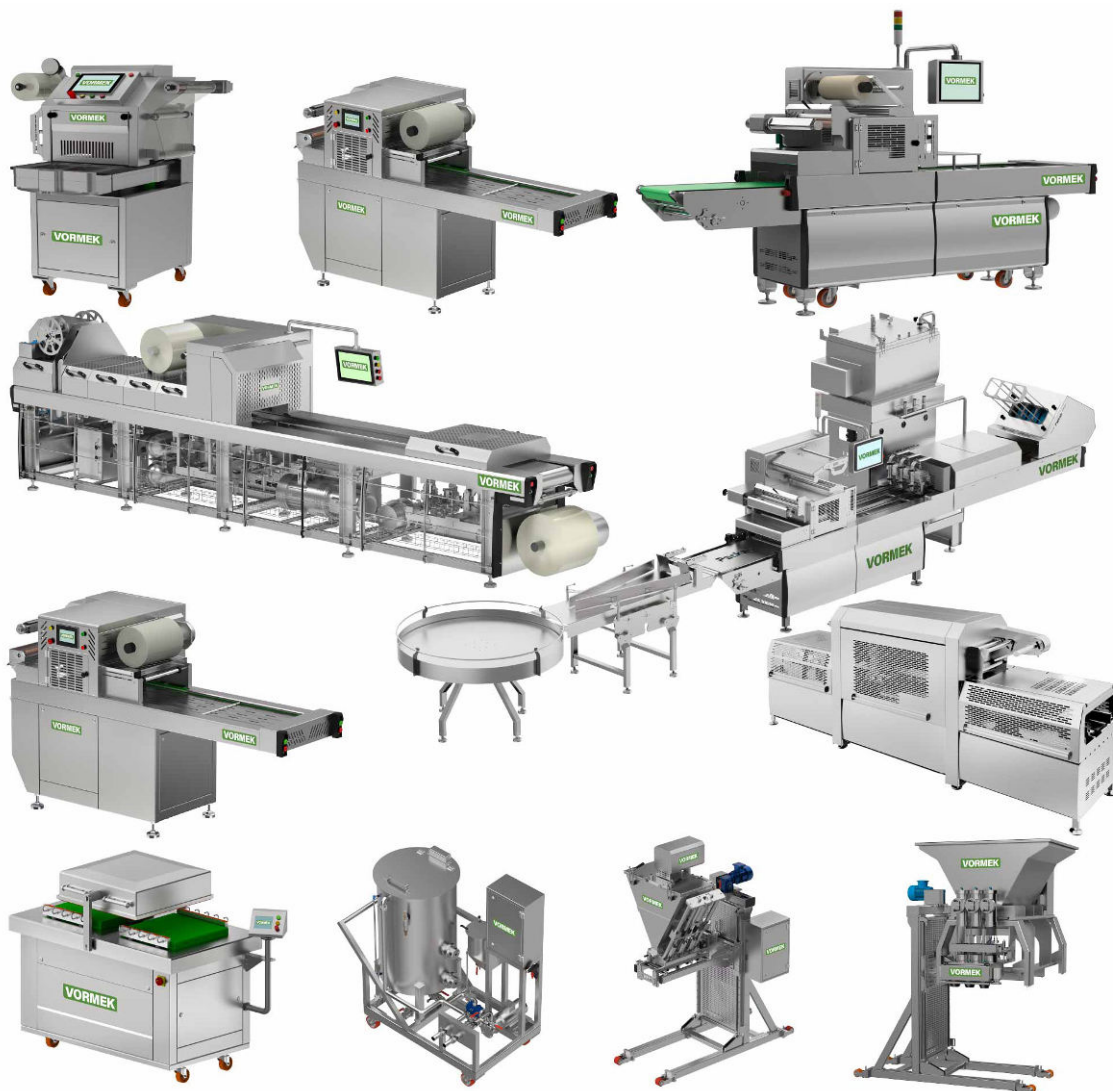
The Importance of Using Tray Sealer, Thermoforming, and Vacuum Chamber Machines in Today's Packaging Industries

Not too long ago, food packaging was simple and inefficient. Products were placed in a container, covered with a layer of film, and it was hoped they would remain safe until consumption. Reality, however, was different: short shelf life, inconsistent quality, an unprofessional appearance, and contamination risks that often went unnoticed by operators.

Today, expectations have changed. Consumers no longer buy food based solely on taste and freshness; they also value attractive packaging, hygiene, and extended shelf life. Manufacturers who still rely on traditional packaging methods find themselves at a disadvantage when competing with industries that embrace modern technologies.

Fortunately, today's innovations have addressed these challenges. Tray sealers offer easy operation and simple maintenance while enabling the packaging of a wide range of food products. They help extend shelf life and give products a professional, appealing appearance. Thermoforming machines go a step further by forming containers, filling, and packaging products within a single integrated process. Vacuum chamber systems remove air completely, preserving freshness, enhancing food safety, and significantly extending product shelf life. In addition, packaging lines equipped with these machines and a variety of optional features make the packaging process more efficient, hygienic, and faster.

This technological integration elevates product packaging, modernizes production processes, and positions your brand as a trustworthy and forward thinking business in the minds of customers. Packaging is not merely the final step in production; it is a



We warmly invite you, our dear audience, to share your topics of interest with us. Your opinions and suggestions not only help enrich our content but also guide us in providing more practical material to meet your needs.

Would you like to read a report about a specific industry or a special technology in the field of packaging?

Share your thoughts with us so we can cover them in upcoming editions.