ProXES
your processing partner

EN

IDEAS FOR HUMMUS & MORE

FrymaKoruma Stephan Terlet

HUMMUS
TAHINI
DRESSINGS
SPREADS
DIPS
MAYO

THE WORLD DEVELOPS A TASTE FOR HUMMUS.

From a traditional Middle Eastern dish to an international trend food – as a healthy and versatile food item, hummus is becoming increasingly popular around the globe. Benefit from its growth potential with ProXES processing machines and systems!

Whether as a spread, dip or snack, hummus is benefiting from the trend toward healthier, protein-rich and plant-based diets. Industry analyses project that the global hummus market will continue to see considerable growth in the coming years, even in the double-digit percentage range.

DIFFERENT FLAVORS FROM OLIVE TO DILL PICKLES

While the classic version made from pureed chickpeas, tahini, olive oil, lemon juice, garlic and spices is still the world's favorite hummus flavor, new varieties are on the rise and offer room for business growth. From olives to limes, pine nuts to dill pickles or even chocolate – there are hardly any limits to innovation.

INGREDIENT OPTIONS: THINKING BEYOND CHICKPEAS

While new flavors are shaking up the hummus market, ingredients are also opening up new possibilities. Going beyond the classic chickpea recipe, savory spreads can also be made from white beans, peas, carrots, zucchinis and many more. But no matter the flavor or ingredient: Careful processing is key to excellent product quality, taste and shelf life.

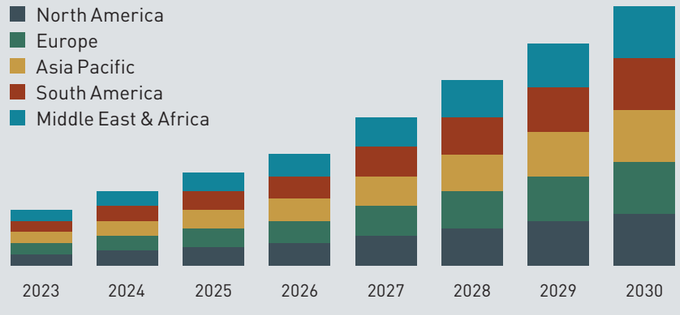
KNOWING THE CHALLENGES OF THE PRODUCTION PROCESS

To guarantee a first-class taste experience, hummus production requires extensive expertise. First, the chickpeas must be soaked for around 12 hours to significantly reduce the cooking time and obtain a fine, chunk-free product. While the normal cooking time can be up to 90 minutes, it can be drastically reduced to just around 20 minutes at temperatures above 120°C.

COLD OR HOT PRODUCTION? WE'LL HANDLE IT!

What's your recipe for success – cold or hot production? We'll support you with systems for either approach. For cold processing, you could cook your chickpeas in our Stephan Cook-IT® first, before mixing them with the other ingredients when chilled. If you prefer an all-in-one solution, you could pressure-cook the chickpeas, cool them to below 90 degrees, finely chop all the ingredients and let them cool down to below 7°C. In this case, our Combitherm® in combination with Vacutherm would be an ideal system. But there are many more – let's talk about the right solution for your application!

GLOBAL HUMMUS MARKET BY REGION



The global hummus market is expected to account for USD 9,571.42 million by 2030. Source: Data Bridge Market Research Analysis Study 2023.

FUTURE-PROOF YOUR FOOD PRODUCTION.

Hummus producers know: Food trends like vegan, clean eating or gluten-free diets are on the rise, creating both new opportunities and challenges for the food industry. ProXES helps you capitalize on changing nutrition patterns and stay ahead of the competition.

Whether for health reasons, as part of a lifestyle or out of concern for animal welfare, more and more consumers are substituting meat and dairy for plant-based proteins.

ADJUSTING PROCESSES AND RECIPES

While food trends can initiate innovation and create opportunity for growth, they also confront food manufacturers with challenges. How can recipes be modified to be 'cleaner and greener' without compromising on product quality, taste and shelf life? How can hummus output be maximized and production be streamlined?

CO-CREATION FOR CUSTOMIZED SOLUTIONS

At ProXES, we're your partner in making your business future-proof – with our Co-Creation approach. With a total of five Technology Centers, customers have the opportunity to test, try and adapt processes to their requirements before investing.

SYSTEMS TO COVER EVERY PROCESS STEP.

Cutting, grinding, cooking, mixing, deaerating: ProXES offers a wide range of systems for the production of hummus and other savory spreads. Do you want to process small batches or large capacities? Do you prefer hot or cold processing? Let's talk about your options!

While we offer stand-alone machines for fast and efficient serial production, we also combine our FrymaKoruma, Stephan and Terlet machines into state-of-the-art continuous and semi-continuous production lines. From in-line homogenizers to scraped surface heat exchangers and downstream and upstream equipment, we will find a turnkey solution for your business.

A PERFECT SYSTEM FOR ANY PRODUCTION VOLUME

For smaller and medium capacities in hummus production, Stephan Universal Machines with usable volumes of between 2.5 and 170 liters are the machines of choice. Depending on the size of the Universal machine, such batches can be produced in two to five hours. If larger capacities are required, the Vacutherm® with a usable volume of 400 to 1,200 liters or the Combitherm® with a usable volume of 800 to 1,200 liters are flexible and efficient processing systems.

INTELLIGENT DESIGN FOR A SMART PRODUCTION

Our compact vacuum processing machines have a fixed, inclined, cylindrical and optionally double-walled container with a dished bottom. Highly efficient dispersing and cutting tools as well as an agitator with wall scraper are installed in the container base or in the circulation. Special blade geometries ensure the highest product quality and particle fineness. The container has an automatically operated, full-size lid.

Universal Machine 24 to 74
Perfect for small batches

Universal Machine 130 and 200
Perfect for medium batches

Combitherm 800 and 1200
Perfect for large batches

DOSING SOLID OR LIQUID INGREDIENTS

The dosing of liquid as well as powdery recipe components can be carried out with the aid of the vacuum system and corresponding hoppers. For external direct-dosing, you can alternatively load large-volume liquid components directly into the container or the Micro-cut®, our multifunctional fine cutting and dispersing system.

DIRECT AND INDIRECT HEATING AND COOLING

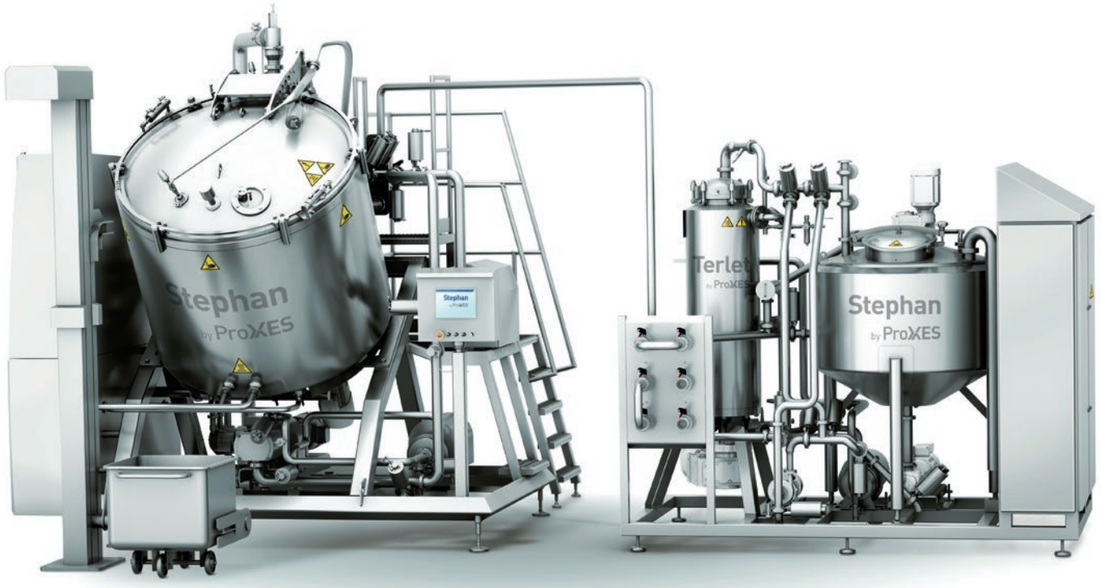
For fast, efficient and gentle heating, the Vacutherm®, Combitherm and Universal Machine offerproven direct steam injection with culinary steam. Or would you prefer using the double jacket? It's highly flexible, and can be used for cooking with indirect heat as well as for cooling.

BENEFITS FOR YOUR HUMMUS PRODUCTION

- **High quality:** Gentle processing for optimum texture and taste
- **Efficiency:** Reduced production times and high throughput
- **Flexibility:** Adaptable to different recipes and production volumes
- **Sustainability:** Energy-efficient processes and reduced operating costs
- **Shelf life:** Up to 21 days

Illustrative purposes only. The configuration of the machines varies according to requirements.

BEST CASE: LARGE-SCALE PRODUCTION WITH PROXES.

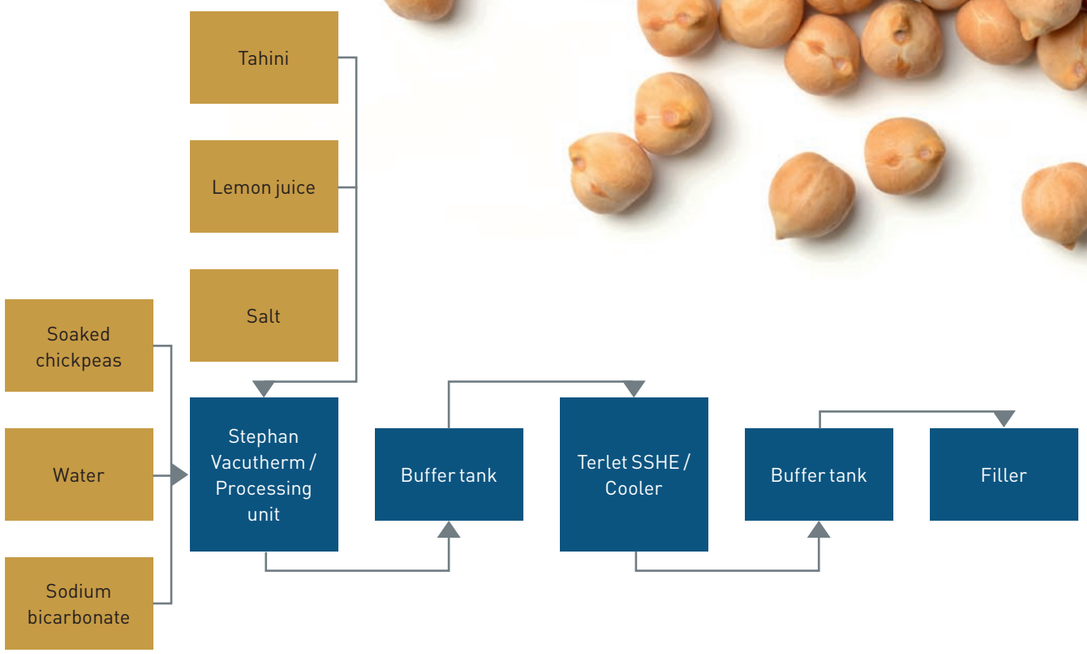


ProXES has already installed a variety of machines and systems for hummus production in all key markets worldwide, including the USA, Canada, the Middle East and Europe. Approximately 20% of the world's B2B hummus production volume is made with ProXES systems – using Stephan, FrymaKoruma and Terlet machines.

Just one example: ProXES supplied two systems with an impressive total capacity of 2.3 tons of hummus per hour to a well-known food manufacturer in Saudi Arabia. First, the soaked chickpeas are cooked at 110°C in a Stephan Vacutherm®. After cooling and adding the other ingredients, the product is finely chopped using the integrated Microcut® system.

In the next step, the product is then conveyed into a buffer tank, where the hummus is continuously cooled to below 10°C in a Terlet Therlotherm® scraped surface heat exchanger and then transferred to a final buffer tank, from where it is conveyed to the filling line. At a storage temperature of 4°C, the hummus has a shelf life of more than 21 days.

PROCESS LAYOUT HUMMUS PROCESSING



Illustrative purposes only. The configuration of the machine varies according to requirements.

BEHIND EVERY GOOD HUMMUS IS A GREAT TAHINI.

Are you planning on extending your hummus production? Adding a tahini line to your machinery can be a very attractive option.

Not only is a high-quality tahini the base of every great hummus, it's also a versatile product in itself – as Halva, mixed with sugar or chocolate, as the mayo-mix Tahinaise, or as a savory appetizer, mixed with lemon juice, olive oil and spices.

From pre-grinding to fine grinding to finest grinding: Our ProXES tahini line processes the sesame seeds carefully into a very fine, excellent tahini paste.

CHALLENGES OF TAHINI PRODUCTION

Sesame moisture and roasting temperature have a major influence on the overall quality of the end product. After roasting, the product should have a residual moisture content of <2%, which results in a smoother surface, lower viscosity, homogeneous texture, and excellent shelf life.
In addition, roasting the sesame seeds at temperatures below 90°C avoids unwanted changes in taste and color.

HIGH QUALITY, LOW OPERATING COST

Our CoBall Mill guarantees low operating and maintenance costs. While the efficient cleaning process saves energy and water, the small grinding chamber minimizes product loss and wear of grinding beads.

BENEFITS FOR YOUR TAHINI PRODUCTION

- **Gentle processing** due to temperature control of entire line
- Dedicated and **efficient milling energy**
- Space-efficient, **small footprint**
- Modular structure and large variety of options for **maximum flexibility**
- **Low operating** and maintenance **costs**

Illustrative purposes only. The configuration of the machine varies according to requirements.

ProXES
your processing partner

1 **ProXES Headquarters, Germany**
info@proxes.com

1 **Stephan Machinery GmbH, Germany**
info@stephan-machinery.com

2 **FrymaKoruma AG, Switzerland**
info@frymakoruma.com

3 **ProXES Technology GmbH, Germany**
info.prt@proxes.com

4 **ProXES Benelux, Belgium**
info.benelux@proxes.com

5 **ProXES Benelux B.V., The Netherlands**
info.benelux@proxes.com

6 **ProXES France SARL**
info.fr@proxes.com

7 **ProXES Polska Sp. z o.o.**
info.pl@proxes.com

8 **ProXES UK & Ireland Ltd.**
ukireland@proxes.com

9 **ProXES Inc. IL, USA**
salesnorthamerica@proxes.com

10 **ProXES Inc. NJ, USA**
salesnorthamerica@proxes.com

11 **ProXES (Shanghai) Machinery Co. Ltd.**
info.cn@proxes.com

12 **ProXES Asia Pacific Pte Ltd., Singapore**
info.sg@proxes.com

EXCELLENCE IS A TEAM EFFORT

With three leading brands FrymaKoruma, Stephan and Terlet under one roof, ProXES combines long-standing expertise with a challenger mindset. As an agile partner, we support our customers from first product concept to the implementation of a successful production process.

At ProXES, we believe in the power of co-creation: We're here to listen, learn and advise. In close collaboration with our customers, we merge their ideas and our technologies into innovative processes and tailor-made solutions that help them align the quality, energy efficiency and profit of their production.

With standalone machines, modern process lines, advanced automation and service concepts, ProXES drives the business of customers in the food, pharmaceutical, cosmetics and advanced materials industries. What about you? Let's create value together – sustainably!

FROM INSPIRATION TO FEASIBILITY

Our process technology and training centre is a space to try out new ideas. Here you can develop or improve formulas in a professionally equipped laboratory, test any kind of machine, perform scale-ups and produce test batches. You will receive expert advice and support on all the capabilities of the technical equipment and modifications.

GET IN TOUCH WITH OUR EXPERTS

For a full list of our global subsidiaries and their contact details, please visit:
www.proxes.com

Headquarters
ProXES GmbH
Stephanplatz 2, 31789 Hameln
Germany

T. +49 5151 583-0
E. info@proxes.com

Follow us on:

FrymaKoruma Stephan Terlet