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CREAM EXTRACTION PROCESSES

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Procesos Alimentarios, S.L.

APPLICATIONS

Cream extraction processes from a wide variety of fruit and vegetables, either using hot extraction or cold extraction processes.

TYPES OF PRODUCT

Products ground and heated at high temperatures from:	Resulting products:	Final use of resulting product:
■ Tomatoes	■ Tomato purée	■ Tomato paste
■ Apples, and pears	■ Fruit purée	■ Tomato juice
■ Pitted apricots	■ Vegetable purée	■ Concentrates
■ Grapes		■ Baby food
■ Red fruits, berries		■ Nectars
■ Tropical fruits, banana		
■ Other fruit varieties		
■ Vegetables		

DESIGN

The extraction process is the next step after pitting. Once the fruit is pitted and clean, the cream extraction process begins.

For this purpose, there are two distinct methods: hot extraction process and cold extraction process.

In the hot extraction process, fruit is ground and pumped into the heat exchangers where rising temperatures cause enzymatic deactivation to take place. Then, the product is sent to the turbo extractors, usually two, where the first one is used to filter larger particles (passer), and the second one is used to refine the product (refiner). For this purpose, the turbo extractors are equipped with different meshes. Please, refer to our turbo extractor catalogue.

In the hot process, the turbo-extractors are fed with steam, which creates an inert environment that displaces the air content residing inside the machine, thus preventing product oxidation.

In the cold extraction process, fruit is ground with a hammer mill, and then sent directly to a turbo extractor for filtering and removal of impurities and contaminating agents. In this extraction phase, the product must not be at more than 20oC. The next stage is to send the product to a heat exchanger to apply the required thermal treatment. At the last stage, the product enters a refining process in another turbo extractor with a finer mesh filter.

Because there is less enzymatic reaction in the cold extraction process, the product does not lose its viscosity. Furthermore, to avoid product oxidation, the extraction process is realised in an inert Nitrogen filled environment.

DIFFERENCES IN THE PRODUCT

In the hot extraction process, the pigments contained in fruit peel, or chlorophyll in the leaves, will colour the cream so that, for instance, in the case of the cream of nectarine – a yellow fruit with red skin – we obtain a reddish cream. With the cold extraction process, we obtain the same cream but of a yellowish colour.

The same can happen, for instance, with strawberries, where the green colour produced by the chlorophyll of calyx of the strawberry can be passed to the product or not, depending on the type of extraction used.

Strawberry creams

Strawberry residues

Onion creams

Onion residues

CONFIGURATION OPTIONS

- There is the option of acquiring a mixed version of the machine, which allows for the production of creams with either cold or hot extraction processes.
- Two machine specifications: manual or automatic model, both adjustable to the needs of clients.

ADVANTAGES

- We can adapt the extraction process to the type of product and the required quantities.

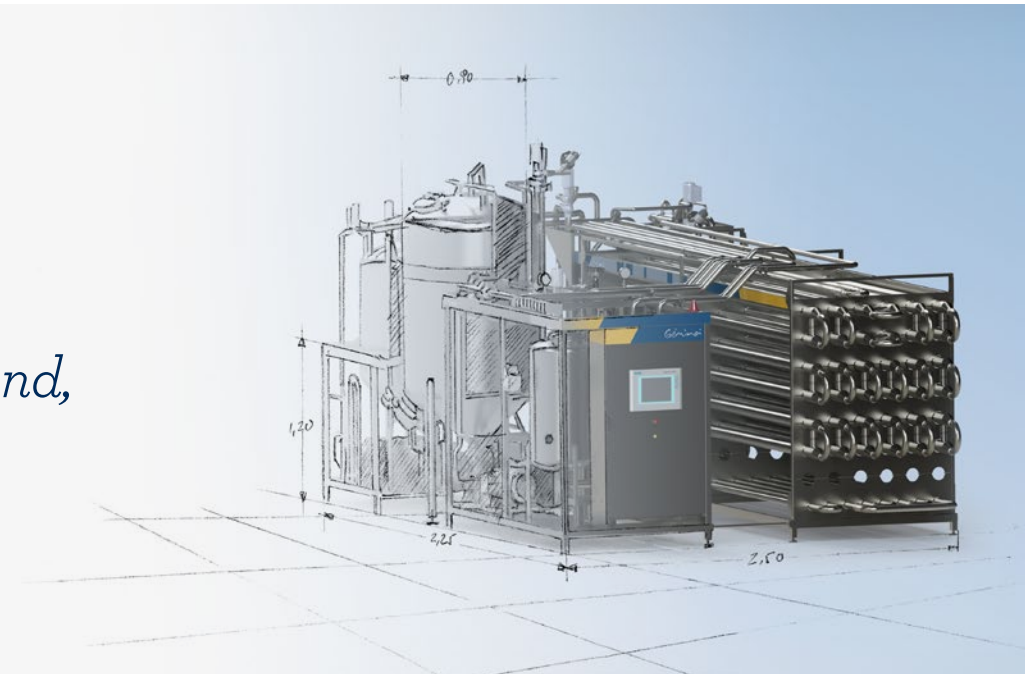
Our company

Gémina©
Procesos Alimentarios, S.L.

GÉMINA Procesos Alimentarios, S.L. is located in Jumilla, Murcia, a spanish autonomous region which is a model in food production.

GÉMINA has 25 years of experience in designing, making and integration of systems which offer innovative solutions for the food sector industry.

You imagine and,
we do it.



BUSINESS LINES

Design and manufacture of machinery

- Design, manufacturing and integration of process equipment and food aseptic packing.
- The Manufacture is completely carried out in our installations.
- All our machinery has CE safety certificate and complies with the most exigent standards.
- I+D+i: We bet on technology innovation.

Engineering and design of processes: Projects management

In Gémina, we love our work and, therefore, our engineering department includes from the design, the calculation, the manufacture, the assembly, the automation and the start up of machines and installations. Therefore, we include a global and integral management of all our projects.

We care of every detail of the process and we advise our clients to optimize their product elaboration procedure. Gémina designs every process adapting it to the customers' requirements and standing out our customers' products among their competitors.

- Versatility and flexibility: we can plan from a plant, a simple line expansion to the installation of an equipment in a process.
- Ability of adaptation to different places and circumstances.
- Our engineering department has a big technical capacity and a long experience in this area.
- Gémina guarantees your success because we manage the whole project, reducing risks, costs and deadlines

Services Provided

1 - Technical assistance service: Alfa-Laval official technical and distributor service

- Maintenance service.
- Installation service.
- Calibrations.
- Replacement parts services.
- "Training" service.
- Online monitoring of production process and breakdown resolution.

2 - Automation and Robotics

- Automation of custom-made processes: integral solutions.
- Total Control of the process: SCADA systems, record and control of data.
- Custom-made robotics applications: different solutions for different necessities.

3 - Food Quality

- Optimization, development and validation of processing and packing equipment, besides of food elaboration processes.
- Consultancy for implantation of standards such as: BRC, IFS: ISO 22.000, FSSC...
- Product development [process + formula].

Customer Service

Gémina is characterized by its exclusive and permanent customer service. Our vocation is to become part in an operational way of the companies which we work.

Our closeness, technical competence, wide experience and self-confident are some of the main features why our costumers place their trust into our equipments and services.

Industries

Industrial sectors where GEMINA develops its projects:

- **Dairy industry**
- **Tomato industry**
- **Juice and drink industry**
- **Vegetables and fruits industry**
- **Citrus fruits industry**

Products catalogue

Aseptic fillings

Aseptic machine which fills metal drums with pre-sterilised bags which have pressurised cap. Besides, it also fills carton containers

Bag in box

Aseptic filling automatic feeding of pre-sterilized bags which have pressurized cap and a low volume (1-20 liters)

Extractors

Processing of a wide variety of products to get a puree free of seeds and peels.

Different methods of using: extractor or refiner

Heat exchanger

We offer all kind of models and designs, from single-tube to partial ones or rough surface exchangers.

Forced circulation evaporators

Concentrators which have great capacity and performance for products having great viscosity and a high content in solid matter. Multiple stages which are adapted to the process and needs.

Hot/cold break units

These units process tomato puree and tomato paste guaranteeing the total or partial deactivation of the pectolitic enzymes and allowing the preservation of the pectine.

Laboratory pilot plants

Pasteurization and aseptic packing in the laboratory of small product samples, such as juices, soda drinks, vegetable creams, soups, etc.

Tubular pasteurizer

Project and constructive development of pasteurization plants adapted to different needs.

UHT

Low-acid liquid products (pH>4.5 for milk pH>6.5) are treated at 135-150°C for a few seconds with indirect heating or direct steam injection.

Heaters and coolers

Heating of products before getting through treatments such as refining or mixing. Cooling previous pasteurization treatments.

Cream extraction plants

Cream extractions of all types of fruits and vegetables, in both cold and hot extraction processes.

Aseptic Monoblock

Integration of an aseptic filling in a pasteurization plant, creating a compact, functional and versatile machine which is adaptable to a wide range of products.

Crusher

Defrosting of stored products such as fruit juices, fruit and vegetables pastes, creams, sauces and so on.

Piston Pump

It is conceived to pump viscous products, big particles of products (fruit in cubes or in pieces) or product which are sensible to shear stress.

Inverse osmosis equipment

Reduction of salinity of salty waters and sea waters.

Blending room / blending

Blending by recipes from database and transference of process parameters to pasteurizers.

Emptying of cans by aspiration

Unloading of metal cans and aseptic bags in blending rooms through emptying techniques in very few seconds.

CIP systems

Cip systems are used to carry out the chemical cleaning of food installations in a completely automatic way.

Processing tanks

Storage in aseptic packing tanks for high and low ph products, in liquid or viscous products.

Blending tanks

We have a wide range of vertical and horizontal tanks with different types of shaking and volumes. They are adapted to process needs.

Storage tanks

Storage rooms in stainless steel tanks having standard volumes or custom-made volumes.

Finisher or pulping machine

It refines crushed product to remove peels, stems and seeds.

Hammer mill

It is a grinder of pitted food (vegetables among others) for processing raw material.

Robotics

Robotic applications in proportion to palletized/ depalletized for the start and the end of proccesing and packing lines.

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