Travaglini

EQUIPMENT FOR **SALTING, DRYING AND SMOKING FISH PRODUCTS**

Travaglini S.p.A. leader in meat industry, also produce equipment for the salting, drying and smoking of fish products.

Through our professional experience in technological development over the course of time, with the help of our customers all around the world, we can satisfy any production need in the fish industry with our equipment. Specifically:

Salting room

In this phase the product is laid horizontally and completely covered with salt. The equipment is composed by ceiling mounted air exchangers and convectors made of ABS with conveyors that contain a hot water coil, installed in the centre or on the side walls of the room.

Drying and smoking room

The aim of this phase is to make the salt penetrate while drying the product at the same time. In this way, the salt enters inside the cell via osmosis, causing the water leaving, which must be removed quickly in order to avoid problems caused by bacteria. Equipment with round vertical ducts was also designed to satisfy customers who dry products via horizontal loading. The drying phase is very important and can be carried out at a range of different temperatures.

Less air pollution

Reduction of air pollution is guaranteed through a programmable smoke recycling system inside the room and through a special filter-trap that captures the tar content of smoke before it enters the smokehouse.
Our equipment have an optional by-pass device with dampers that prevents the passage of smoke through the smoking cabinet. This guarantees that the equipment are more efficient and the costs of coil cleaning are lower.
Moreover, it is possible to request specific filters/purifiers that can be installed on chimneys, in order to reduce air pollution.

Minimal risk of crust formation

The risk of crust formation is practically eliminated because the equipment is controlled by the moisture released by the product. Fish filets come into contact with air flow that allows to perfectly dehydrated with the desired shrinkage the surface. The processing phases during which the product's surface is dried are alternated automatically with resting phases that allow it to "wake up".

Computerized system

Our computerized control and management system, in addition to monitoring temperature and relative humidity, allows:

- to set predefined programmes;
- to control the fluid temperature, optimizing shrinkage;
- to record the graphical trending of different variables and display on a single screen (temperature, relative humidity, etc.);
- to verify the exact progression of the entire maturing process.

Furthermore, to allow for various functions to be centrally supervised, we have designed a software program for this purpose that allows to monitor and manage system alarms, to collect and graphically displayed the rooms' individual data, remote programming, remote support, and automatic centralised control for better management of energy consumption.

Uniform shrinkage

As a result of the technical experience that we have acquired over the course of time, we have designed different air distribution systems according to the loading systems used.
In the fish industry, for products that are loaded horizontally, air is distributed through vertical circular ducts, complete with proportionally-sized nozzles. The airflow within the room is continuously regulated in order to obtain a continuously moving precise airflow that moves from right to left and vice versa. In this way, every duct functions as both air supply and air return.

Energy savings

Our equipment are designed to create the best possible result for the product, optimizing the consumption of cold and heat, and sensibly decreasing energy costs. Among our solutions we mention:

Heat recovery:
our system allows to recover the total condensation heat transferred during the refrigeration cycle. Therefore, when the post-heating demand coincides with requirement for cold, there is hardly any need to use external heating sources (this does not apply to cold drying equipment).
Furthermore, hot water around 40–45°C can be produced with a desuperheater (optionally available) which can be used for other processing systems as well as other plant needs.

Enthalpy:
the enthalpy system utilizes the dehumidifying power of outside air for as long as possible. Our system is based on algorithms that allow to use outside air even when one of the specific values (temperature and relative humidity) seems far from the required values.

Economizer:
in systems with an independent refrigeration unit, there is a subcooling system that guarantees a refrigeration capacity that is 15–18% greater than the absorbed electrical potential.

High efficiency motors (IE2–IE3):
increase the system's output, reducing electrical consumption.

Inverter:
frequency regulators, installed on the motor of centrifugal fans and/or compressors, that increase or reduce their rpm in order to improve their efficiency if process and loading conditions change.

Direct coupling motor/fan:
this particular technical solution, combined with the use of an inverter, allows for a reduction in the system's electrical consumption, optimizing its regulation.

Modulation of cooling and heating valves:
to improve system performance in relation to the actual needs of the product during the various phases of maturation maturing.

Hot gas defrost system:
allows to defrost the cooling coil better and more quickly, which consequently saves energy.