

HIGH-PRESSURE PROCESSING

MEAT PRODUCTS



Fresher Under Pressure[®] Provides the Safest RTE Meats with Extended Shelf Life

Fresher Under Pressure Provides What Consumers Want and Producers Need

Consumers expect ready-to-eat (RTE) meats to be safe and also have fresh, just prepared characteristics without additives or preservatives.

Fresher Under Pressure high-pressure processing (HPP) makes increased distribution of RTE meats possible. *Fresher Under Pressure* satisfies the quality and safety requirements of consumers and the preparation and distribution requirements of the food industry.

RTE meat products, including cold cuts and hams, are subjected to very high pressures for less than a few minutes, resulting in the inactivation of spoilage organisms and harmful pathogens, as well as the reduction of enzymatic activity. RTE meats retain the original sensory qualities, texture, color and nutritional content, which adds great consumer value.

HPP extends refrigerated shelf life, making the development and distribution of RTE meats highly profitable. Consumers readily accept products pressurized with *Fresher Under Pressure*.

Batch Processing Benefits

Products are processed in the final consumer package, eliminating the potential for recontamination. Most plastic food packages are suitable, including vacuum and gas-packed.

The load/unload process can be fully automated, integrating with conventional equipment and allowing for rapid changeover between product line variations in food type, package size and format.

***Fresher Under Pressure* Advantages**

No change in appearance, flavor, texture or nutrition compared with unpressurized products.

Increases food safety without the use of heat, chemicals or irradiation, and creates no by-products. Pressure transmission is instantaneous and uniform.

Extended shelf life increases distribution opportunities, reduces returns and sensitivity to cool chain abuse, and allows more efficient production scheduling.

***“Fresher
under
Pressure”***

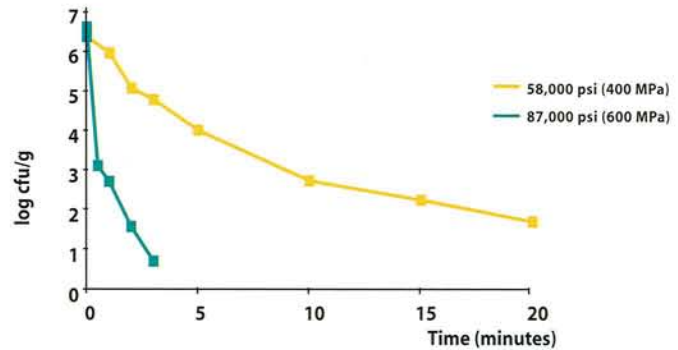
READY-TO-EAT MEATS

Pressure Inactivation of *Listeria monocytogenes* in RTE Meats at 87,000 psi [600 MPa]

HPP time (minutes)	<i>L. monocytogenes</i> (CFU/g)				
	Storage at 4°C				
	1 Day	6 Days	27 Days	59 Days	79 Days
Inoculation: <i>L. monocytogenes</i> (Scott A) at 3.6×10^4 CFU/g					
Roast Beef					
Not Treated	8.0×10^4	4.8×10^4	3.6×10^6	5.0×10^3	3.6×10^4
2	<100.0	<100.0	<100.0	<10.0	<10.0
3	<100.0	<100.0	<100.0	<10.0	<10.0
Turkey Meat					
Not Treated	4.2×10^5	1.6×10^5	8.1×10^4	2.3×10^4	4.7×10^4
2	<100.0	<100.0	<100.0	<10.0	<10.0
3	<100.0	<100.0	<100.0	<10.0	<10.0
Chicken Meat					
Not Treated	4.9×10^6	1.9×10^6	2.4×10^6	4.2×10^6	4.5×10^5
2	<100.0	<100.0	<100.0	<10.0	<10.0
3	<100.0	<100.0	<100.0	<10.0	<10.0

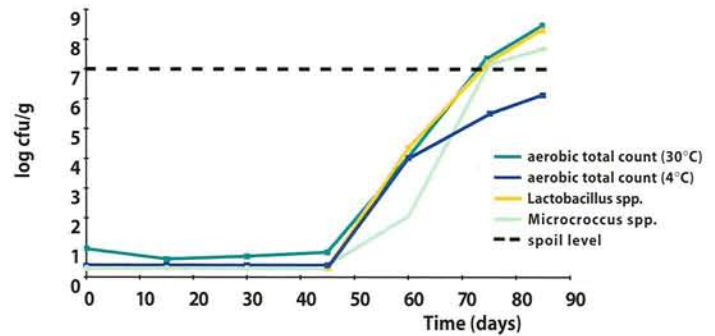
Higher Pressure Results in Better and Faster Microbial Reduction

Inactivation of *Listeria monocytogenes* in high-pressure-treated minced chicken meat as a function of pressure and time.*



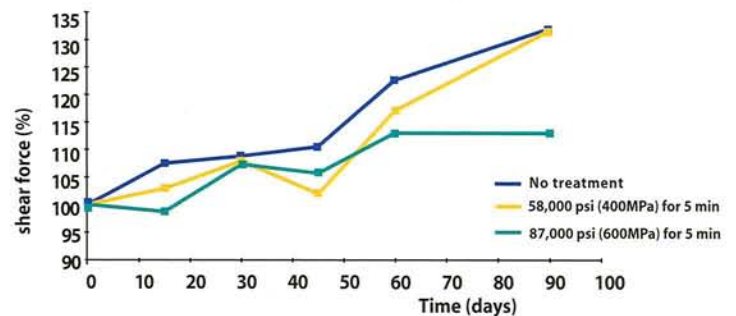
Extension of Shelf Life

Results of microbiological analysis on Italian type cooked ham samples treated at 87,000 psi (600 MPa) as a function of storage time.*



Maintained Meat Quality

Results of texture analysis of sliced cooked ham. The Italian type ham treated at 87,000 psi (600 MPa) maintains quality throughout the refrigerated shelf life.*



* Data source: S.S.I.C.A. Parma, Italy / Avure Technologies, Västerås, Sweden



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