



**HPP Tolling**



**HPP Tolling**

**Commercial Applications of High Pressure  
Processing**

**Wednesday 23<sup>rd</sup> November 2016**

**Teagasc, Ashtown.**

**Liam Murphy- HPP Tolling**



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**HPP Tolling began in October  
2012 with the goal been to  
Opening the first commercial  
HPP Tolling Station in Ireland.  
This was achieved in  
November 2014.**



**HPP Tolling**



Department of  
**Agriculture,  
Food and the Marine**

An Roinn  
**Talmhaíochta,  
Bia agus Mara**

**HPP Tolling is currently registered under Article 6 of 852/2004 and has been allocated an EU registration number MH1-14 and has been entered in the Department's Register of businesses authorised to carry out High Pressure Processing of products of animal and non-animal origin. This number allows for HPP Tolling to trade within the EU.**



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# HPP Tolling Ltd

Food Central, St Margaret's, Dublin, Co. Dublin, Ireland

**BRC Site Code: 8274820**

has been audited by SAI Global and found to meet the requirements of

**Global Standard for Storage and Distribution (Issue 2: September 2010)**

**Scope: The storage of chilled goods to include contracted services (Chilling, High Pressure Processing - HPP).**

Product Categories: 01 - Chilled and Frozen Food

Exclusions: None.

**Auditor Number: 123004**

Initial Audit Date: 02-December-2015

Issue Date: 22-December-2015

Date of Audit: 02-December-2015

Expiry Date: 13-January-2017

Re-audit Due Date: 02-December-2016





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# Irish Organic Farmers & Growers Association

Organic Certification at its best





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## What is a HPP Tolling Station?

- An independent processor.
- Available to all producers.
- No exclusivity arrangements.
- Centrally located.
- Each Station having the capacity to process up to 380Tonne/week.
- Centre of knowledge and learning in a partnership approach with many other organisations.



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## Partners/Advisors.



**UCC**

Coláiste na hOllscoile Corcaigh, Éire  
University College Cork, Ireland



AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY







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# FOODCENTRAL

Ireland's National Food Park







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## The Pressure involved.

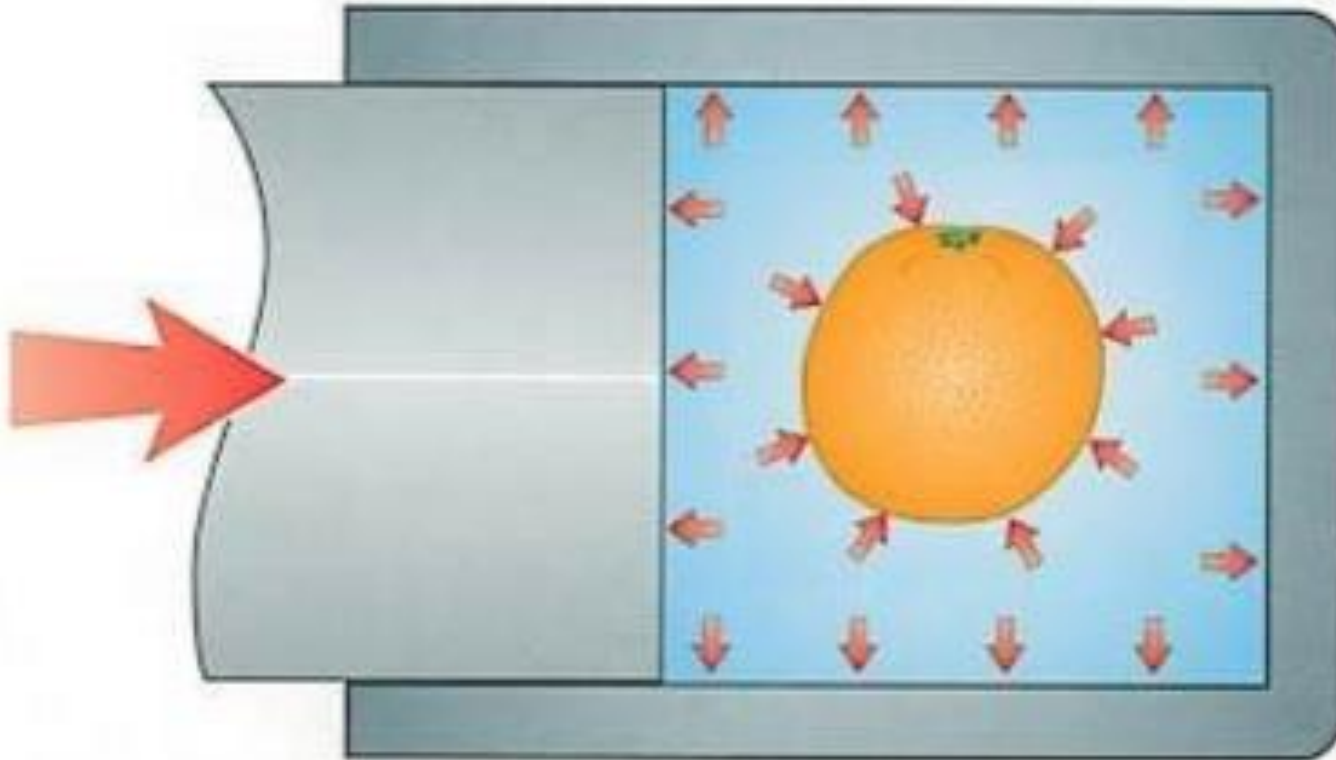
***“HPP involves subjecting food to 300 to 600 MPa of pressure or 87,000psi”***

- ***Car Tyre has 30psi.***
- ***The Mariana Trench is 6.85 miles deep and the pressure at the bottom is 15,750psi.***
- ***600MPa is equivalent to been 60Km deep in water, the distance from Dublin Airport to Newbridge Co. Kildare.***
- ***Water laser cuts steel at 50,000psi.***



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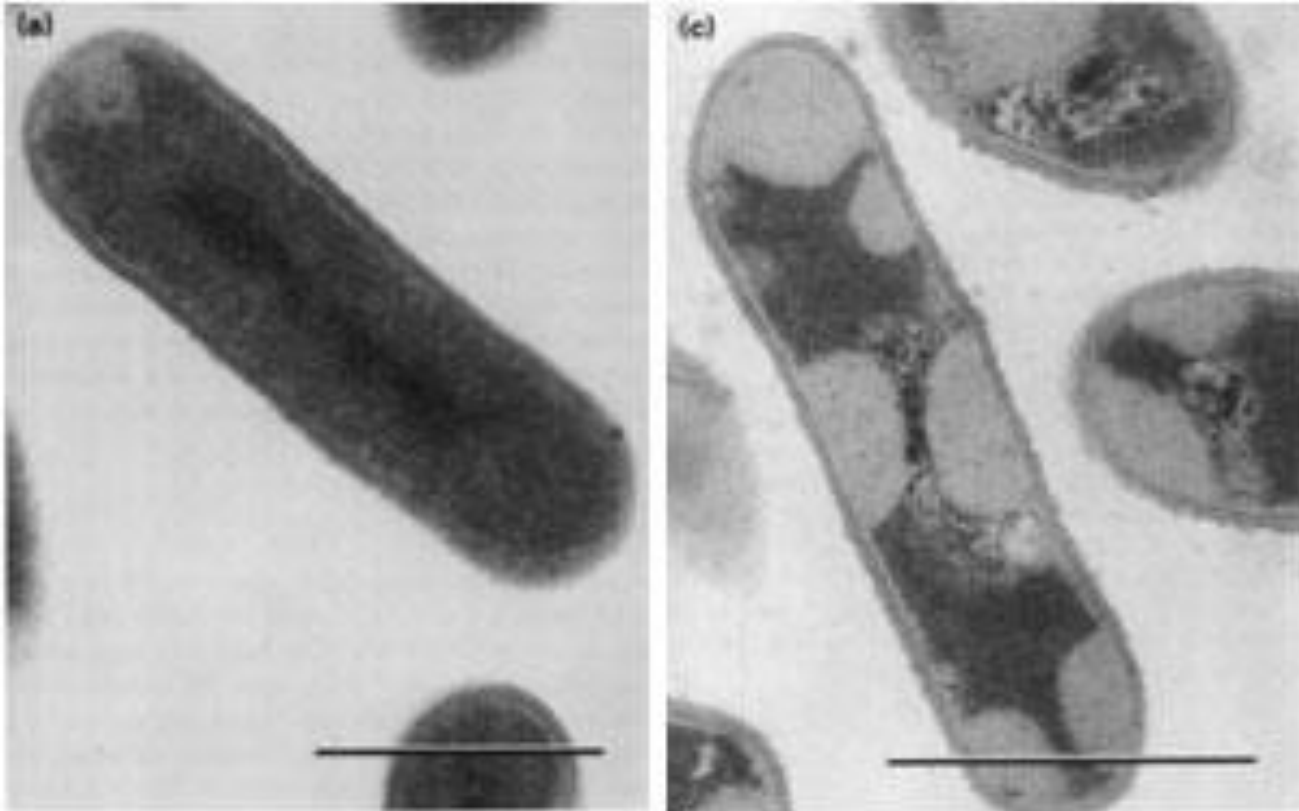
Pressure is applied uniformly by surrounding the packaged products in water which acts as the medium to **transfer** the pressure to the product, it's the moisture in the product itself that treats the product, unlike heat pasteurisation where heat variants can occur throughout the product HPP is a completely uniform treatment.





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# LISTERIA.



***Listeria monocytogenes.* Before (left) and after (right) HPP**



## HPP Tolling

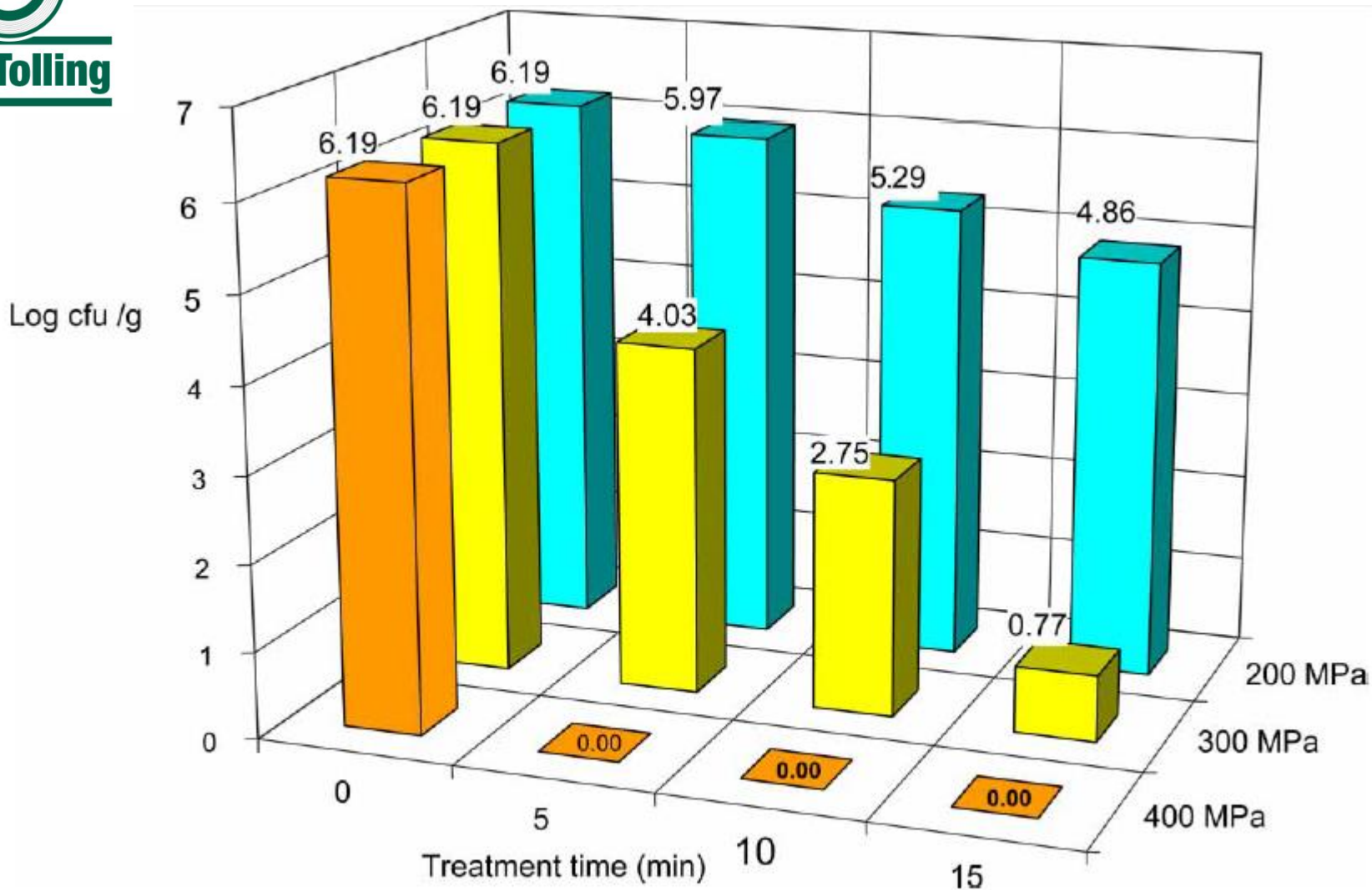
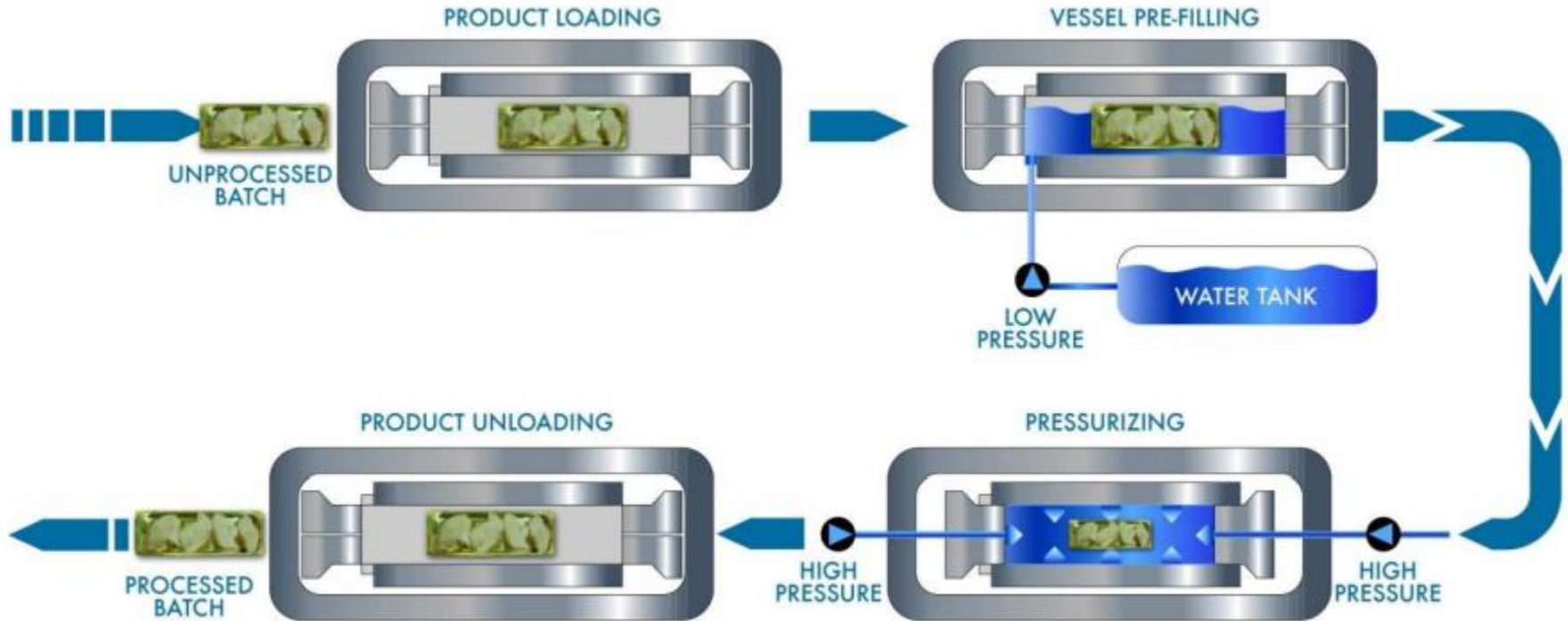


Figure 1. Effect of high-pressure treatment on survival of *C. jejuni* in cold-smoked salmon.



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# How the System works.







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# Hiperbaric 420



Guacamole



# Advantages of HPP

- **Increased product shelf life** – even for food that is sensitive to heat.
- **Reduces product returns/food waste** due to date code expiry.
- **Low-temperature preservation method**: no loss in product quality compared to heat pasteurisation.
- **Eliminating the cost of expensive recalls.**
- **Brand protection.**
- **Eliminates harmful bacteria** such as salmonella, Listeria and e coli allowing the production of safer food.
- **Allows companies to expand into export markets.**
- **Enhanced food safety** due to inactivation of spoilage organisms and relevant food borne pathogens.
- **Processing in final consumer packaging** is possible (no recontamination)



## **HPP Tolling**

- **Additive-free preservation** of food by using only pressure.
- **Salt level** in food can be reduced substantially.
- **Cost reduction** in product formulations.
- **Increased production efficiency** due to larger more cost effective production runs.
- **Production of “natural/clean label”**, safe value-added food with a superior quality.
- **Homogenous effect of HPP**: Results are independent of product size and geometry.
- **Further benefits** like large yield increase compared to traditional processes (e.g. extraction of lobster meat from the shell, meat tenderising)
- **Waste-free and environmentally friendly**, sustainable technology – only water and electricity are needed.



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# Suitable Products for HPP.



Meat products



Avocado Products



Ready To Eat Meals



Seafood products



Juices



Fruit products





# HPP Tolling



Dips and salsas



Wet salads and sandwich fillings



Dairy



Pharma-Cosmetic





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# HIRO BY ROISIN



# Perfect Fit Meals Texas



Shelf-life went from 5 to 30 days with HPP



<http://www.packworld.com/package-type/thermoformed-packaging/map-vs-phpp-and-linerless-labels-along-way>





## Layered Selections: Simply Stir & Serve!



Black Eyed Pea Salad with Couscous & Corn  
Grilled White Chicken Pasta Alfredo  
Southern Style Three Bean Salad

Cheesy Mac & Cheese  
Mediterranean Style Pasta Salad  
Spaghetti with Mea

ctions Products.



Made by Cow will now make and sell '*cold-pressed* raw milk' as an alternative to the conventional heat pasteurised kind, after it was given approval by the NSW Food Authority



MADE BY  
**cow**™



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# Fresh Cheese.

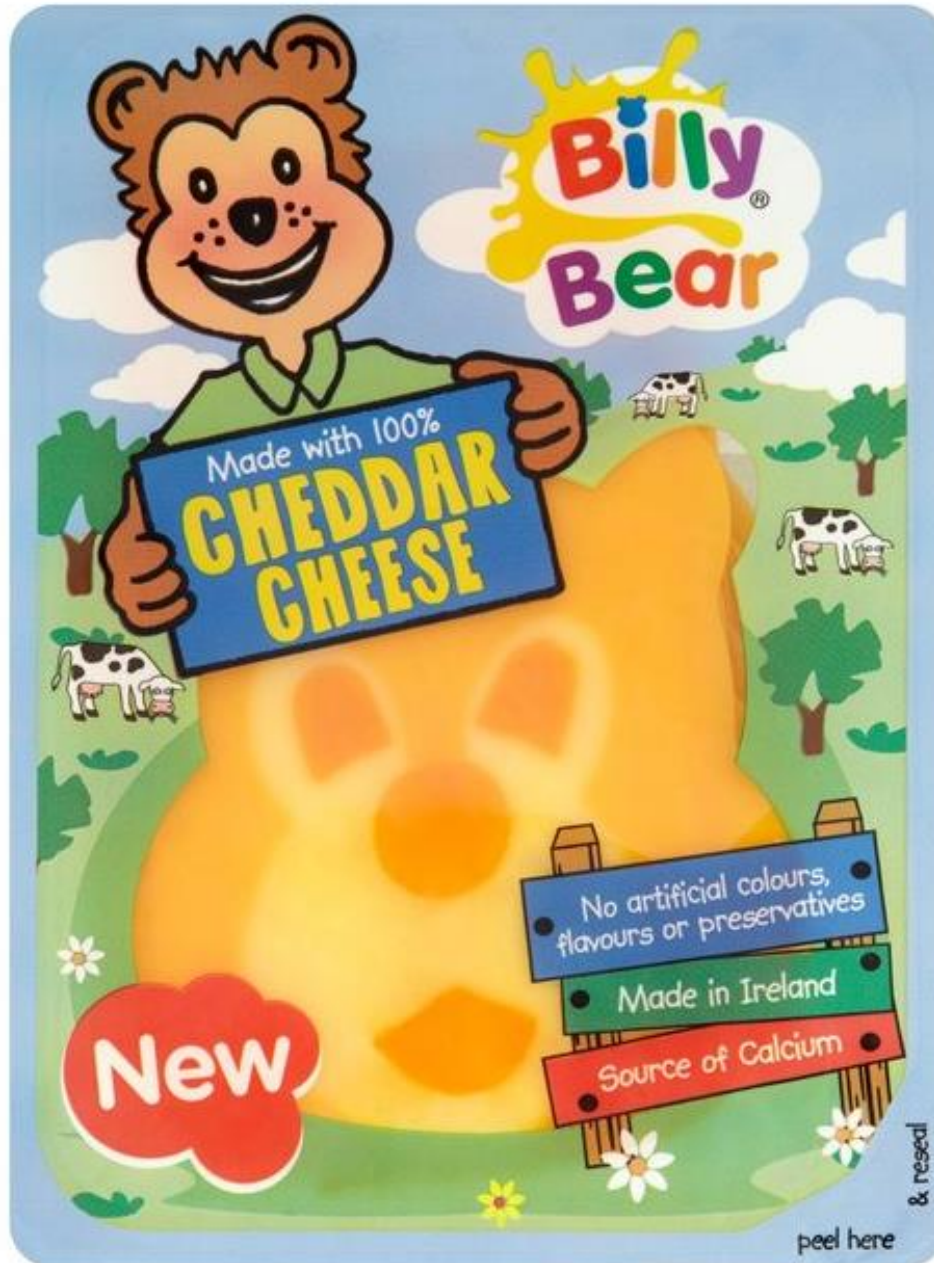
El Pastoret (Spain)







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## KICK START YOUR DAY WITH A NOURISHING BREAKFAST IN A BOTTLE



- MADE WITH REAL FRUIT
- PACKED WITH OATS AND QUINOA
- SOURCE OF FIBRE AND PROTEIN
- ONE OF YOUR FIVE A DAY
- LOW FAT



# Once upon a Farm



10 Recipes to Grow With



Our Promise: Healthy Ever After







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## Cucina Fresca™ Pasta Sauce



**Product's shelf life is 120 days from date of manufacture.**

**100% natural - NO additives and NO preservatives!**

**Enjoying the great flavours of traditional Italian pasta sauce is as simple as opening a bowl of Cucina Fresca Tomato & Basil, Garlic Robusto, or Garden Marinara Pasta Sauce.**





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**FRESH GUACAMOLE**

*Ready To Eat  
100% Fresh  
Hass Avocados  
& All Natural  
Ingredients  
No Additives  
or Preservatives*

**CLASSIC MILD GUACAMOLE**

**Mr. Avocado**

MADE WITH 5 FRESH HASS AVOCADOS

**Mr. Avocado**

# HOPE. HUMMUS



**SPICY AVOCADO HUMMUS**

**ORIGINAL RECIPE  
HUMMUS**

**THAI COCONUT CURRY  
HUMMUS**



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# Hormel's Natural Choice.



The first use of HPP for nationally available prepackaged lunchmeat, Hormel's Natural Choice line was introduced in 2005.





## HPP Tolling

While some retailers didn't know quite what to make of his 'chilled soup in a bottle' when he first started pitching the concept last year, around 75% *"just got it immediately"*, says Tio Gazpacho founder Austin Allan. *"And then they would say: How come no one has done this before?"*



While the price tag - \$8.99 for a 12oz bottle with a 60-day shelf-life (thanks to high pressure processing) - is high, it's consistent with what people are paying for a bottle of premium cold-pressed juice, says Allan, who is now exploring whether the shelf-life could be raised to 90 days or more.





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# The Little Pharma.





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# HAPPY COCO.





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# Cornucopia Juices







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# Skinny Malinkys.





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# 4 SOME HEALTH







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# Delpierre (France)

## SEAFOOD EXCELLENCE GLOBAL AWARDS WINNERS

BARBET CINNABARE



MAQUEREAUX



### Seafood Product Line

Delpierre Filets preserved by high pressure pasteurization, Delpierre



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# HPP FISH: DESALTED RTE COD



- Sanitisation and shelf life increase.
- More than 1 month shelf-life in HPP desalted, RTE cod
- Know how for prevention of texture changes





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*Pelican Lake*  
BRAND OYSTERS



Gold Band Oysters  
Preshucked, Easy  
Open, Better  
Flavour, Better Shelf  
Life- Fresh



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**In 2001, the US FDA evaluated some strategies for microbial inactivation and stated: “Ground beef can be pasteurized by HPP to eliminate E. coli O157:H7, Listeria spp., Salmonella spp., or Staphylococcus spp.”**



**HPP raw meat has intact the quality parameters throughout their shelf-life. According to M. Martin, 2011, HPP burgers maintain the quality parameters up to 42 days meanwhile control (no HPP) burger quality start to decrease on day 7.**





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# Rare HPP'ed Burger.



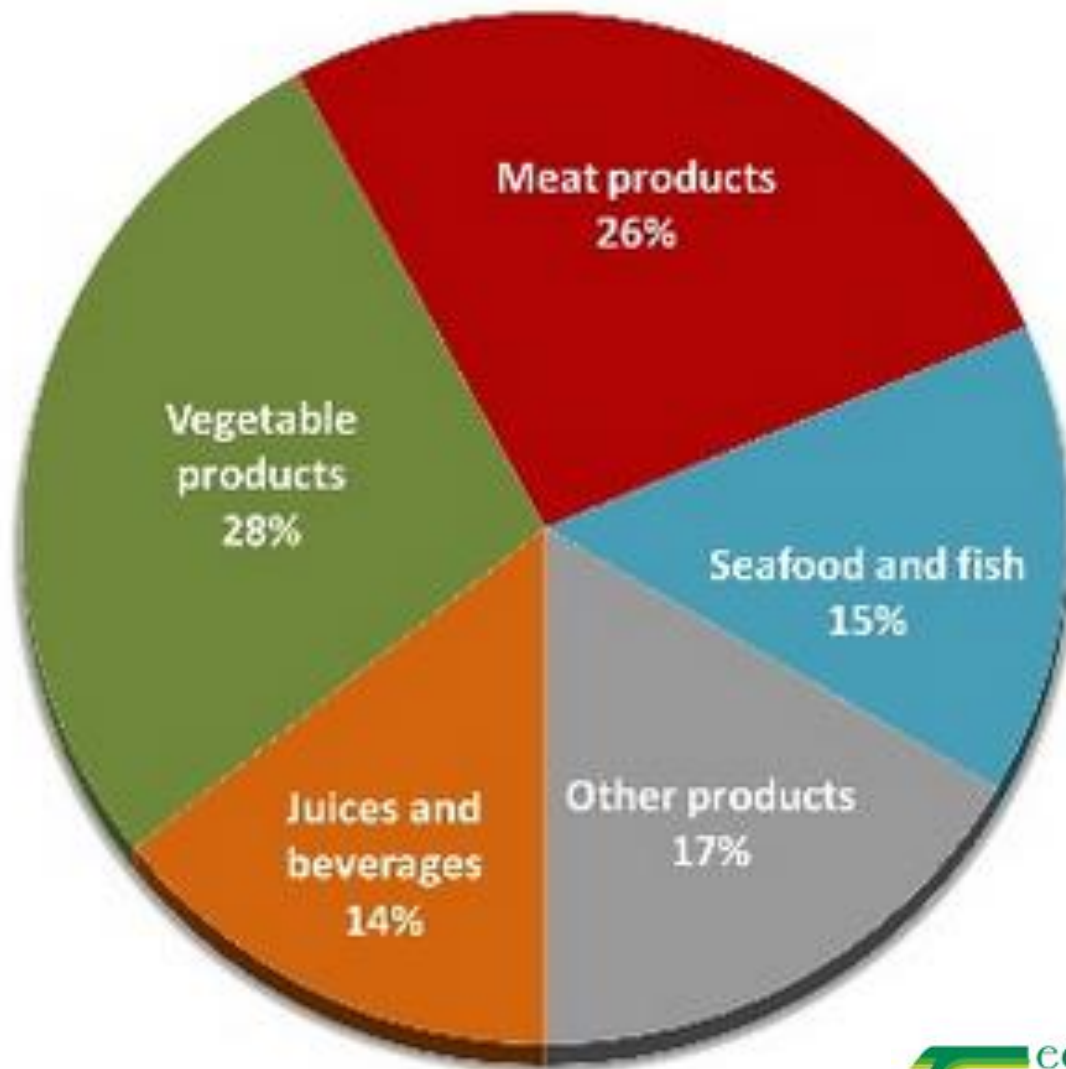
Clean label HPP'ed raw marinated chicken breasts in oven ready packaging, no mess no waste and 100% safe with 4-6 weeks shelflife.





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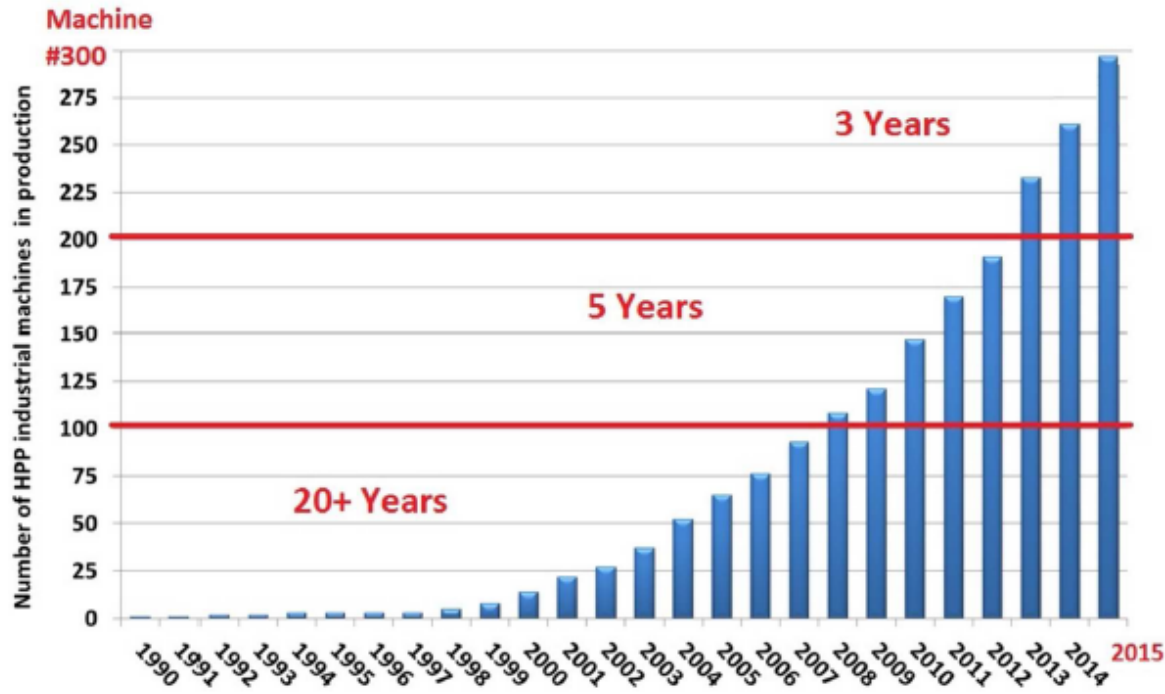
# HPP Global Production 2014 + 700,000,00 Kg





# Number of commercial machines in operation.

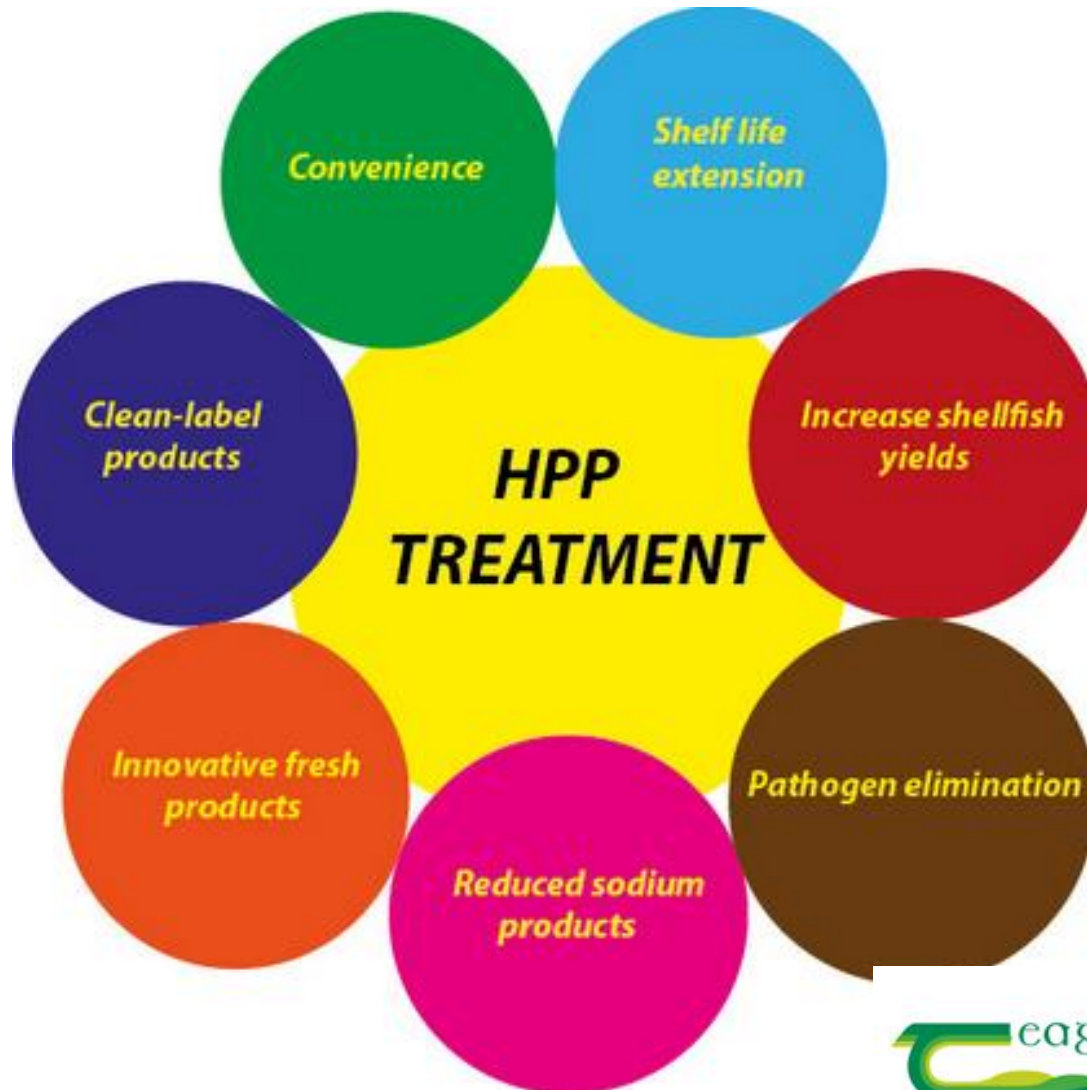
## EVOLUTION OF THE TECHNOLOGY







# SUMMARY





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Q&A