

Nosh Detox Long Life Fresh Juices: Case Study And Packaging Innovation Award



Presented by

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An introduction to NOSH...

- NOSH = natural, organic, safe and healthy
 - Our vision is for NOSH to become synonymous with raw and healthy living
- Nosh was established due to our unerring belief in nutritious healthy food and supplements as an essential means of keeping healthy and we are now trend setters in innovative health products
- We make a range of delicious smoothies and juices that are the closest thing to juicing and making smoothies yourself, to buy for people on the go
 - ✓ Superfoods
 - ✓ No additives or preservatives
 - ✓ High vitamin content
 - ✓ Wonderful natural flavours
 - ✓ Not heat treated



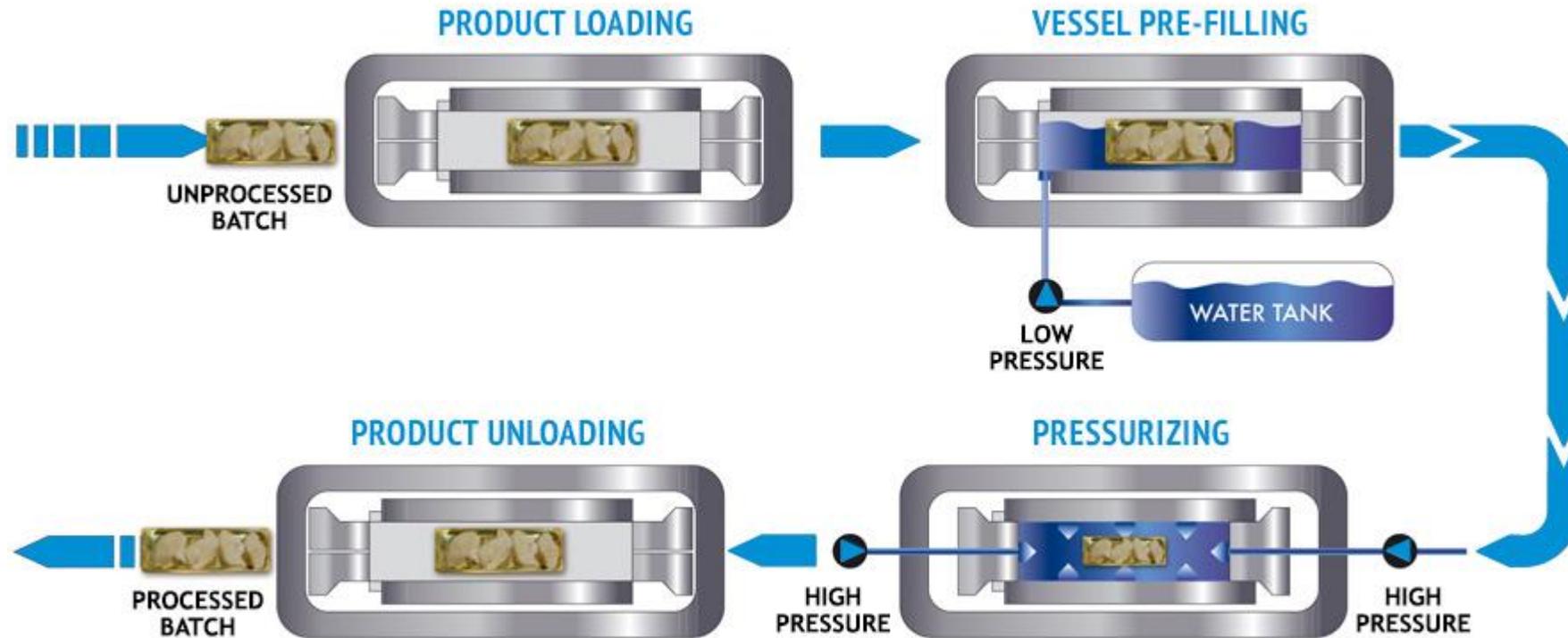
The conundrum: How to keep the goodness in?

- It was key for us that we didn't lose the vital naturally occurring vitamins, minerals, anti oxidants and enzymes within our juices & smoothies
- But traditional heat treatment means that these benefits are compromised severely and adding artificial additives compromised our desire for a natural, healthy product
- We went back to the drawing board and after much research into various types of food preserving methods we came across HPP (High Pressure Processing) – the perfect solution for NOSH
- We linked up with a food bioscience group in Belfast N.I. (Agri-Food and Biosciences Institute), where we were able to learn more about the technology. There we were able to conduct tests on what effect HPP would have on the nutrient content, flavour, colour and shelf-life of our products.
- The results of these tests showed that with HPP we could maintain the high levels of all the good stuff in the fruit and veg meaning that the consumer truly benefits from a genuinely nutritious drink

What is HPP?

- HPP is a cold pasteurization technique by which products, already sealed in their final packs, are introduced into a vessel and subjected to a high level of isostatic pressure (300–600MPa/43,500-87,000psi) transmitted by water
- The pressure exerted on the product the equivalent of 3 elephants on one penny and treatment temperatures are as cold as 20 miles under the sea
- HPP was found after conducting research into various types of food preserving methods. We were not happy with traditional heat-treated or artificial additives as a method for preserving foods. We then came across HPP as a technology which is quite prevalent in the USA, then we linked up with a food bioscience group in Belfast N.I. (Agri-Food and Biosciences Institute), where we were able to learn more about the technology. There we were able to conduct tests on what effect HPP would have on the nutrient content, flavour, colour and shelf-life of our products.

How does HPP work?



Source: <http://www.hiperbaric.com>

The benefits of HPP...

- Key to us is that HPP hardly changes the fresh properties of foods such as taste, appearance, texture and nutrition because the product isn't heat treated
- Microbial and bacterial growth is suspended for up to 40 days:
 - Ensures food safety
 - Extends the shelf life
 - Means no food preservatives are needed
- Environmentally friendly as the process only involves water (which is recycled) and electricity
- This means that our products have a retail friendly chilled shelf life and are also convenient for the consumer to keep chilled at home

The Benefits contd.

- Effects of HPP on Vitamin C, Folic acid and Niacin in **Fresh orange juice**:

Pressure (MPa)	Vitamin C mg/100 ml
0	45
400	41
480	43
540	47

Pressure (MPa)	Folic Acid ug/100ml
0	14
400	14
480	14
540	14

Pressure (MPa)	Niacin mg/100ml
0	0.55
400	0.54
480	0.55
540	0.55

*figures copied from graphs provided by Avure Technologies studies

How adopting HPP influenced our packaging

- Due to the pressures exerted on the product during HPP treatment, our packaging couldn't be rigid.
- The packaging couldn't be glass.
- The bottles needed to be above a certain thickness or they buckle under the pressure.

Problems:

- Difficult to provide a luxury feel without glass
- Difficult to display the 'green' 'eco' feel of the product in plastic
- Expensive to mass produce
- A lot of manual labour
- Packaging has to survive immersion for over 20 minutes at huge pressure.



A method that many are now following suit with...

- NOSH were the first juice company in the UK to use HPP treat juice products
- Many others have now woken up to the benefits of this treatment process and have followed our lead
- Being first to market with an HPP treated juice doesn't make us complacent though:
 - Constant refining
 - NPD
 - Responsive and seasonal production kitchen
- We are honoured to be being awarded a FDIN Packaging Innovation Award



Thank you



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