



IMPACT CASE STUDY  
May 2018



# Innovative technology for processing food

High Pressure Processing is a non-thermal technology that can produce high quality foods that maintain the freshness and nutritional attributes for an extended chilled shelf life, without compromising their microbiological safety.

## The challenge

Consumer's demand for high quality products with natural and fresh appearance, flavour, texture, taste and nutritional value has been growing over the last decade. Product safety is imperative, and natural products without additives such as preservatives are desirable. To satisfy these demands of 'fresh like' food products, without compromising the safety of the products and at the same time improve shelf life, High Pressure Processing (HPP) has been identified as an alternative to thermal processing decades ago, and is now becoming an established technology in the food industry. Australia is accepted by many international markets and domestic customers as a producer of "good quality", "natural", "clean and green" raw materials and food products; therefore many opportunities exist for Australia to exploit the increasing demand for these "natural" foods.

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In commercial HPP systems the vessel contents is pressurized to up to 600 MPa (87,000 psi)

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## The response

HPP processing was established at CSIRO in 2001 with support of the Victorian Government Strategic Technology Infrastructure grant developing emerging technology applications for the food and beverage industry. CSIRO's HPP research aims to improve the understanding of HPP technology use on a commercial scale.

CSIRO's research, through improving the use of HPP technology in commercial food and beverage production, has led to the introduction of various products treated by HPP onto the market. CSIRO are world leaders in the development and implementation of HPP technology across a range of food products such as meat, poultry, seafood, fruit and vegetable products, meal solutions, dips and sauces. CSIRO has demonstrated that carefully and rigorously tested HPP products can have an increased shelf life of up to five fold with minimal adverse effects on quality, taste and nutrition.

## The impact

CSIRO's contribution to HPP food and beverage production has been significant. CSIRO has incubated companies from their own world leading pilot plant, also aiding them in establishing operator owned HPP facilities for commercial production. CSIRO has enabled the growth of many SMEs, assisting them establish their position in the market. Benefits of HPP include a competitive advantage for products in terms of shelf-life, packaging optimisation and food safety. The result is improved food quality attributes, such as flavour, texture, nutrient content and colour.

Based on conservative valuations, the net present value of benefits of the HPP project is \$356.4 million (2017-18 dollars) with a benefit-cost ratio of 2.3<sup>1</sup>.

<sup>1</sup>. CSIRO, 2018. Research Impact Evaluation: High Pressure Processing. CSIRO, Canberra.

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## FOR FURTHER INFORMATION

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