Project Name:	Shelf-Stable Cold-Pressed Juice ('Chrisoda')	**Start Date:**	2025-01-01
Project Number:	2502	**Completion Date:**	2025-12-31

Project Details:

Scientific or Technological Objectives:

Manning Canning Kitchens Inc. (2024 TCC 159) developed a shelf-stable cold-pressed juice product named "Chrisoda" during its 2017 and 2018 taxation years [para. 11]. The project focused on creating a commercially viable, non-refrigerated juice using cold-pressing techniques to preserve nutrients and flavor, while ensuring microbial stability and extended shelf life without spoilage or preservatives [para. 11]. This involved formulation adjustments and processing innovations, such as novel applications of high-pressure processing (HPP) to achieve stability [para. 11].

The work was conducted by the company's R&D team, including food scientists and production staff, and resulted in a successful product launch [para. 11].

The appeal overturned CRA's denial for these years [para. 11].

Field of Science/Technology:

Food and beverages (2.11.01)

Project Details:

Intended Results:	Develop new materials, devices, or products
Work locations:	Research Facility
Key Employees:	
Evidence types:	Test protocols, test data, analysis of test results, conclusions; Records of resources allocated to the project, time sheets; Samples, prototypes, scrap or other artefacts; Design of experiments; Records of trial runs

Scientific or Technological Advancement:

Uncertainty #1: Technological uncertainty

UncertaintiesThe core uncertainty was whether a cold-pressed juice could achieve true shelf stability (e.g., no spoilage over extended periods) through formulation and processing, given the inherent vulnerability of raw, unpasteurized juices to microbial growth and oxidation [para. 11].

This stemmed from insufficient existing technological knowledge on balancing HPP parameters, ingredient interactions, and pH levels to prevent degradation without compromising taste or nutrition [para. 11]. Routine methods (e.g., standard pasteurization) were unsuitable, as they would alter the "fresh" profile, creating a non-obvious risk that could not be resolved by standard food engineering practices at the time [para. 11].

Technology or Knowledge Base Level:

Activity #1-1: Activity 1 (Fiscal Year 2025)

Methods of experimentation:

The team systematically investigated by defining the instability problem, formulating targeted hypotheses (e.g., "Adjusting pH to X via Y ingredient will enhance HPP efficacy for microbial control"), planning controlled experiments, and testing through iterative batches [para. 11].

Work included measuring key metrics like pH, microbial counts (e.g., yeast/mold levels), sensory attributes, and shelf-life simulations under varied conditions [para. 11].

Hypotheses were tested via observation and analysis: rejected if results showed spoilage (e.g., elevated colony counts), refined through modifications, and validated with repeatable outcomes [para. 11].

This adhered to the scientific method, generating logical conclusions and new data on formulation-HPP synergies [para. 11].

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Results:

Eligibility Criteria (Northwest Hydraulic Framework)

Technological Risk/Uncertainty: Yes – Genuine uncertainty in shelf stability resolvable only through non-routine investigation; not removable by routine methods or standard procedures [para. 11].

Hypothesis Formulation: Yes – Specific, testable hypotheses tied to observations and measurements [para. 11].

Scientific Method: Yes – Systematic procedures including trained observation, measurement, experimentation, hypothesis testing/modification, and analysis [para. 11].

Technological Advancement: Yes – Generated new knowledge in juice formulation and HPP application, beyond routine; work aimed at achieving product stability [para. 11].

Documentation: Yes – Detailed records of experiments, metrics (e.g., pH/microbial data), and results supported the claim [implied para. 11].

Conclusion:

ResolutionThe project advanced food preservation technology by demonstrating a viable HPP-based process for shelf-stable cold-pressed juice, yielding new knowledge on microbial inhibition through precise formulation (e.g., optimized pH and pressure cycles) [para. 11].

This resolved the uncertainty, enabling a stable product with a multi-month shelf life while retaining cold-pressed qualities [para. 11].

The advancements were not merely incremental but contributed to broader understanding in non-thermal processing, supporting commercial scalability and potential applications in other raw juices [para. 11].

Documentation:

- Offline Documents: docs

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