Final report

Rabobank Foodbytes! Corporate Accelerator FY22/23

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Abstract

Meat and Livestock Australia ("MLA") participated in FoodBytes! Pilot program that brings together experts, decision-makers and innovators across the entire food & agribusiness value chain to identify major breakthroughs and create scalable solutions in a pilot-driven engagement.

Through the Pilot program, MLA partnered with three startups to develop new products, gain market and consumer insights, and to experiment with new technologies and practices. The three startups are:

- True essence foods (Processing technology for improved flavour, nutrition and colour)
- Cruz Foam (Ambient supply chain)
- Dissolves (Nutritional needs of the Ageing population)

The program was conducted in a methodical approach. Milestone 1 included an Internal Review to build alignment with the MLA strategy and an external review to determine focus areas using industry trends, commercial viability, and investment insights. Milestone 2 and 3 involved sourcing and reviewing high-quality 14 startups and onboarding 3 startups for the projects.

In the Milestone 4 and 5 the pilot project execution commenced with two selected startups, the project plans, budgets, and project logistics were discussed, the technical support teams were identified and regular meetings with the startups commenced.

This report provides an overview of the structured pilot process and the successful pilot outcomes from the projects.

Executive summary

Background

The MLA Strategic Plan 2025 highlights MLA's contribution towards the industry's 10-year plan - *Red Meat 2030* - within the context of the red meat and livestock producers the organization serves and its purpose as a Rural Research and Development Corporation.

The FoodBytes! by Rabobank and Tomorrow Studio Ventures team are working together to scout and identify innovative technologies, asses them for commercial adoption and executing pilot validation projects.

MLA has an opportunity to collaborate with ground-breaking startups through pilot sprints to develop new products, learn novel technologies and adapt to new markets.

Objectives

The objectives of the projects included:

- Innovation immersion exercise for MLA to select innovation focus areas after an internal strategy review and an external review of global trends, industry data, market research and commercial research analysis
- Review of selected global startups addressing nutritional needs of an ageing population, processing technology for improved flavor, nutrition and color, ambient supply chain technologies and premium pet food. Gain insights into the global trends and novel technologies to develop long term strategies for MLA value chain partners
- Conduct a pilot exercise with three selected startups to understand the startup technologies, changing consumer requirements and create premium red meat products.

Methodology

The project was project managed in five phases with regular review meetings with the participants. The first milestone was an internal and external review to study the industry landscape and select innovation focus areas. The milestone 2 and 3 was focused on scouting, reviewing, interviewing and selection of 14 startups and shortlisting three startups for further research.

In the Milestone 4 and 5 the pilot project execution commenced with the three selected startups, the project plans, budgets and project logistics were discussed, the technical support teams were identified and regular meetings with the startups commenced.

The methodology was designed to provide MLA an opportunity to study emerging innovative areas, interview leading startups and the technologies, and pilot novel technologies to benefit the Australian red meat industry.

Results, key findings, and benefits

The project provided valuable commercial and technological insights into the innovation focus areas of MLA through the external review that was conducted. The insights included global trends,

industry data & market research, and commercial research analysis. The review also allowed the project team to develop key innovation focus areas for startup technology search.

The individual technical analysis was conducted on 17 startups addressing the nutritional needs of an ageing population, processing technology for improved flavour, nutrition and colour, ambient supply chain technologies and premium pet food. The evaluation resulted in selecting three pilots with True Essence foods, Cruz Foam and Dissolves.

The continued focus of MLA in the latest disruptive innovations is crucial to develop new products, gain market and consumer insights, and conduct accelerated experimentation of new technologies in a low-risk format. The learnings and insights gained will further help the development of growth strategies and business development for the red meat industry.

Future research and recommendations

The learnings and technical findings from researching into innovative startups should be adopted when developing future MLA research opportunities and commercialisation plans. The pilot projects completed will benefit with introductions to MLA value chain partners to further develop the technologies.

The pilot projects conducted research into selected use cases, and there are opportunities to apply the same technology into other applications in red meat value chain.

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1. Background

1.1 Foodbytes! Pilot, The leading Food & Agriculture Accelerator

1.1.1 Introduction

The FoodBytes! Pilot brings together experts, corporates, and industry associations with leading innovators across the entire food & agribusiness value chain to establish connections and innovate products that can catapult into scalable solutions.

FoodBytes! Pilot collaborators cover a range of innovation areas, including packaging, supply chain, novel ingredients, waste valorisation, sustainability, nutraceuticals and modern food products catering to evolving consumer preferences. FoodBytes! Pilot has brought to life tangible successes for both corporates and start-ups to stimulate potential growth beyond the program. Many pilot projects have outlasted the duration of the program and resulted in commercial relationships, venture capital investments and co-creation of products.

1.1.2 About Rabobank group

Rabobank is a leading global food and agriculture bank providing sector expertise, strategic counsel and tailored financial solutions to clients across the entire food value chain. Rabobank believes sustainability and innovation are critical in promoting a thriving food and agricultural industry that will feed the growing global populations for years to come, which is a key focus for Rabobank's Banking for Food vision, which aims to feed the world more sustainably by 2050.

1.1.3 About Tomorrow Studio Ventures

Tomorrow Studio Ventures is an innovation studio based in Australia, who have partnered with Rabobank FoodBytes! program to manage and execute the Foodbytes! program in the region. Working with innovative corporates and industry, Tomorrow Studio Ventures is focused on sourcing leading global innovations in Agrifood sector and creating valuable partnerships to benefit the Australian Agrifood industry.

1.1.4 MLA's Purpose

MLA's purpose is to foster the long-term prosperity of the Australian red meat and livestock industry by investing in research and marketing activities.

MLA's overarching ambition with the Foodbytes! pilot program is to work with start-ups to build and test assumptions to expand Australian red meat applications for the consumer. The insights gained and developed concept products, serve as valuable intelligence to the Australian red meat value chain partners to further define long term strategy around innovation and business development.

2. Objectives

MLA invests in new product and process development, food safety research and development (R&D) projects across the value chain to support market access for the Australian red meat industry by enhancing product integrity and traceability through research. In addition, MLA seeks to support industry grow higher value demand for the whole carcass.

The Australian red meat industry has a global reputation as a supplier of clean, safe and natural products, underpinned by its disease-free status and advanced food safety and integrity systems. Maintaining and enhancing this position remains essential for the industry to uphold its competitive advantage.

For this purpose, the project seeks to establish innovation focus areas, identify innovators globally that meets the MLA innovation focus areas, interview and conduct due diligences on the selected companies prior to establishing research projects.

2.1 Selection of Innovation focus areas

The project milestones consisted of an internal review of MLA strategic plans, previous research projects and interviews to build a latest understanding of the opportunities identified from MLA perspective. This was followed with an external review of global trends, industry data & market research, commercial research analysis that was conducted by Rabobank research analysts and Tomorrow Studio Ventures. The internal review and external review results were presented in an innovation workshop and following four innovation focus areas were selected for the project:

- Nutritional needs of an ageing population
- Processing technology for improved flavour, nutrition and colour
- Ambient supply chain
- Premium pet food

2.1.1 Nutritional needs of an ageing population

The goal of a pilot in this sector is to explore penetration into the growing population and community segment that has typically reduced red meat consumption due to health decline and minimal convenience in meal preparation. Exploration of subsectors include supplements and collagen, functional ingredients and technology.

After extensive global research, the startups selected are providing MLA a unique opportunity in:

- High quality, locally available, functional ingredients that enhance the texture, bite dexterity and dietary needs of ageing populations
- Food technologies that allow delivery of red meat into resource constrained aged care facilities
- Partnership with emerging new food technologies to co-create new products and new occasions to consume red meat
- Supply of Nutraceuticals into larger export markets currently experiencing supply constraints
- Novel ingredients that supplement the nutrient composition of red meat with ingredients that improve microbiome health

2.1.2 Processing technology for improved flavour, nutrition and colour

The goal of a pilot in this sector is to introduce new technologies that are enhancing flavour, nutrition attenuation or colour along the supply chain. This includes technology to mitigate waste and denote quality, processing technology to lengthen shelf life and additives to improve texture.

The startups put forward are providing a unique opportunity for MLA in:

- Automation solutions for improved meat classification in the supply chain
- Optimization technologies that produce a more nutritious product via improved processing
- Emerging food technologies that can be replicated for the meat industry for improving retention of flavour, nutrition, and colour.

2.1.3 Ambient supply chain

The goal of a pilot in this sector is to trial breakthrough technologies to enhance red meat shelf life. Exploration in piloting technologies that are implemented across other food tech categories as well as packaging solutions along the supply chain. The startups presented are a cross section of deployable solutions that offer commercially ready products as well as viable IP stemming from years of industry specific R&D.

The startups we found are providing a unique opportunity for MLA in:

- New packing solutions that can extend the shelf life of fresh and cooked meat products
- New bio-polymers that can improve the sustainability of red meat packaging
- Labelling technology that tracks refrigeration related food spoilage events in supermarkets, QSRs and meal providers.

2.1.4 Premium pet food

The commercial opportunity to penetrate the pet food category is significant. The pet food companies provide business models that represent a straight line to commercialisation and with a proven historical upward trajectory. There is an opportunity for nutrition-focused marketing strategies to highlight the many health benefits within animal nutrition.

The startups we found are providing a unique opportunity for MLA in:

- Opportunities for Australia to seize part of the USD 124 billion global pet food market
- Position Australian red meat as a premium pet food supplier in markets where pets are humanised
- A use cases to test the cold chain where, low processed products and primal cuts can be sold at a premium.

2.2 Overview of the startups selected

The Foodbytes! and Tomorrow Studio Ventures team analysed 45 global startups across the four innovation areas. Following a detailed analysis and interviews, shortlist of 17 startups were presented and introduced to MLA.

MLA followed a structured scoring process, interviews, and selected the following 3 startups for pilot projects:

- True essence foods (Processing technology for improved flavour, nutrition and colour)
- Cruz Foam (Ambient supply chain)
- Dissolves (Ageing population)

3. Methodology

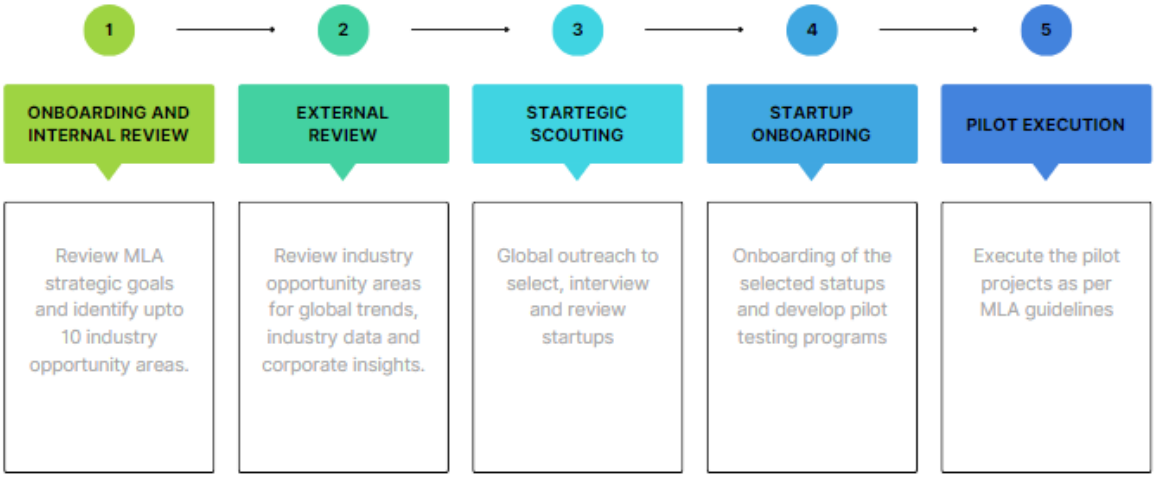
The Pilot Program is a tailored, collaboration program that pairs industry and corporates with emerging companies through structured pilots. Together, they tackle a specific goal or an industry challenge.

The Pilot Program is based on four key principles:

- Access to an expansive network of innovators across the food and ag industry
- Experimentation in a low-risk format to validate technologies, products, and ideas
- Results realized in an accelerated timeline
- Build reputation as forward-thinking leaders in the industry.

The program is characterized by a multi-step process that starts with focusing on target briefs to identify ideal start-up matches for each specific challenge or innovation goal.

The program phases are given below:



3.1 Onboarding and Internal review

During the onboarding and internal review, the Foodbytes! and Tomorrow Studio Ventures team will lead collaborative meetings to review MLA internal strategies, goals and past projects. The review will focus on:

- Review of the MLA 2025 strategic goals and Red Meat 2030 strategic plan
- Review a selected catalogue of past projects

- Discuss 10 identified industry opportunity areas for strategic alignment and submit for analysis by Foodbytes! and Tomorrow Studio Ventures team
- Identify core objectives, limitations and short-term objectives for the projects.

3.2 External review

The external review involves review of 10 identified industry opportunity areas for global trends, industry data & market research, corporate insights and commercial analysis by the Rabobank research analysts, Foodbytes! team and Tomorrow Studio Ventures teams.

A one-day workshop was held to present the review and approve up to 5 innovation focus areas to select startups. Rabobank research analysts provided industry and corporate insights on the focus areas. The workshop also focused on the competition to red meat industry including synthetic biology, plant based substitutes and their industry trends.

3.3 Strategic scouting

The strategic scouting phase initially involves of a global outreach by the Foodbytes! and Tomorrow Studio Ventures teams to identify, interview and shortlist suitable innovative startups for review by MLA. The startup selection process involves assessing the startup for MLA specifications as well following 5 criteria:

- Robust and diverse team with domain expertise
- Validated business model
- Focus on people, profit, and planet
- Collaborative mindset
- Growth stage business or product.

The second phase involve MLA reviewing, interviewing and scoring the startups in a structured guided process, and selecting two innovative companies for pilot projects.

3.4 Startups onboarding

Tomorrow Studio Ventures together with the Rabobank team will commence outreach to the identified startups and pitch the opportunity to work with MLA in the pilot program. The outreach will be conducted in a phased approach to ensure that the startups fully understand the MLA program objectives, project management rigour and results driven approach.

- First engagement
    - Educate the startups via virtual meetings on the Australian red meat sector, mandate of the MLA and MLA research & development capabilities
    - Explain the MLA guidelines and project management approach in conducting pilot projects.
- Startup acceptance
    - Discuss with the startups the reasons to be part of the pilot, understand the MLA value proposition and ability to work within the provided timeline
    - Provide clarifications to any questions on MLA, Australian red meat industry.
- NDA and planning meetings

    - Provide the NDA to the startups and plan the pitch to the MLA team
    - Support the logistics for delivery of samples and props for the pitch
    - Pitch the startup to the MLA team in a formal presentation.
- Startup selection
    - Support the selection of the startups for the pilot program and commence the commercial and project management discussions
    - Understand and validate with the MLA team the genuine reasons from the startup to work with MLA
    - Work with the MLA legal and procurement team setting up the pilot projects.
- Pilot project governance
    - Establish the project steering committee meetings, project team membership, payment milestones, stage gated deliverables and project schedules
    - Establish project governance with the MLA team for pilot project success
    - Identify potential risks and mitigations for the selected pilot projects and startups.
- Pilot project logistics and infrastructure planning
    - Plan the pilot project site infrastructure at the labs, sites and locations with the MLA team and the startups
    - Plan the shipping logistics for equipment, ingredients, supplies, and products required for the pilot
    - Set up project milestones, payment milestones and deliverable milestones to ensure success.

3.5 Pilot execution

The pilot execution is done in two phases with initial pilot kick-off followed with pilot execution.

3.5.1 Pilot Kick-Off

The MLA team and the startups will kick-off the pilot project, with the completion of following project initiation tasks:

- Execution of the Umbrella Research Agreement and Statement of Work for Umbrella Research Agreement
- Agreement on the project governance including project schedule, tasks and deliverables, meeting schedules, commercials, payment milestones and risks
- Agreement on the logistics of sample products, testing methods, laboratories used and results interpretation
- Review the previous projects in the MLA research and development public library for education purposes
- Adoption of MLA stage gated project management approach.

3.5.2 Pilot Execution

The pilot execution phase will focus on:

A. Commence the pilot project governance

- Commence execution of the project steering committee meetings, stage gated deliverables and project schedules

- Identify potential risks and mitigations for the selected pilot projects and startups.

B. Commence execution of the pilot project logistics and infrastructure

- Commence the use of the pilot project site infrastructure at the labs, sites and locations with the MLA team and the startups
- Organise the shipping logistics for equipment, ingredients, supplies, and products required for the pilot
- Organise the travel arrangements (if required) for startup employees and experts.

C. Reporting and project updates

- Commence the project reporting in the agreed timeframes and agree on the final research report contents
- Formalise the monthly meetings and the reporting regime.

D. Payment management and deliverables

- Commence the milestone-based payments, deliverables tracking and accounts payable tasks.

E. Project learnings and tracking the results

- Results oriented project engagement with a constant focus on improving the red meat eco system in Australia
- Rigorous documentation of the experiments and archival of laboratory results
- Sharing the project information widely within MLA for learning and capability improvement.

4. Results

4.1 Startup selection

The engagement with FoodBytes! Pilot began by accessing their global network of over 3,000 start-ups and technologies. The FoodBytes! team and Tomorrow Studio Ventures prepared and analysed a shortlist 45 start-ups that fit the MLA objectives, detailed in the three innovation briefs. From this shortlist 17 startups were presented to the MLA team.

During the start-up selection phase, MLA reviewed the pitches and materials from the start-ups that align with MLA's target briefs, innovation objectives and broader strategic goals. MLA interviewed and selected 3 start-ups for pilot projects.

The selected startups are True Essence Foods, Cruz Foam and Dissolves, whose solutions ranged from ageing population, ambient temperature supply chain, to novel processing technologies.

4.2 True essence foods

True Essence Foods is a high growth Food-Tech company that developed two core technology platforms Flavour Symmetry and Flavour Balancing for fresh produce. The Flavour Symmetry technology is a proprietary drying system that separates moisture from food and beverages without the use of heat or sublimation, preserving their fresh flavours and aroma. The Flavour Balancing technology modifies the ratios of aromatic molecules in products to remove off-flavours and achieve an optimal balance of flavour and freshness.

The pilot project will focus on testing the impact of 'Flavour Symmetry' technology from True Essence on Australian red meat. The products will be tested for taste, shelf life, visual studies and nutrient values after undergoing the processing.

True Essence Foods have not tested the technology on red meat products, and it will be a novel pilot project for the teams. The key product markets for True Essence Foods includes spirits, coffee, cannabis, tree syrups, spices, and fruits & vegetables.

4.2.1 Opportunity for MLA

The Flavour Symmetry technology from True Essence Foods is a proprietary drying system that separates moisture from food and beverages without the use of heat or sublimation, preserving their fresh flavours and aroma. Flavour Symmetry also enables accelerated dehydration at low temperatures to preserve fresh flavours, as well as dehydration under nitrogen to prevent oxidation that may result in browning of the food product. TEF Technology has been demonstrated to reduce water content of foods to less than 1% without impacting its organoleptic profile.

The pilot project will focus on testing the technology on Australian red meat. The products will be tested for taste, shelf life, visual studies, and nutrient values after undergoing the processing.

The True Essence technology can help Australian red meat industry as dehydrated meat products commands a premium price, provides shelf-life extension to reach a global consumer base and creates snacking opportunities to consume more red meat.

4.2.2 Pilot progress

Flavour Symmetry utilizes controlled-temperature, molecularly selective dehydration that operates under a closed, recirculating stream of air to protect food essence during dehydration, resulting in food with a fresh organoleptic profile and preserved volatile flavour compounds.

Under the present study, TEF will dehydrate raw beef, as specified by MLA, to a shelf-stable state with water activity of between 0.20 and 0.60. A range of predetermined Flavour Symmetry process conditions will be tested to produce optimal conditions for rapid mass reduction and organoleptic profile retention in the identified sample material. A quantitative and qualitative assessment will be conducted by TEF upon each sample throughout the tests. The tests will be carried out for cubed, whole cuts and minced beef.

The assessment include:

- Change of Mass
- Condition of Product Samples (cracks, surface degradation, case hardening with photographic documentation)
- Qualitative properties (color and texture with photographic documentation)

The project work is conducted in TEF labs in Indianapolis under the MLA guidelines. True Essence Foods team completed system upgrades to support the MLA project with an extra focus on stopping the loss of flavours during the dehydration.

The first batch of testing included samples of minced, cubed, and whole cuts to:

- Water activity between 0.60 and 0.40 tested at 23 °C measured temperature
- Water activity less than 0.25 tested at 23 °C measured temperature

Figure 1: Processed materials after undergoing True Essence first batch of testing

Samples will be evaluated for microbial counts before consumption testing, and stability tests on the samples during the duration of the trial. True Essence Foods will use reference point temperatures relevant to Australian supply chain conditions for the stability testing.

Next steps

- Round 2 and 3 of the pilot testing will test meat at from different sizes, at different temperatures and durations.
- Testing for microbial counts and stability tests will be conducted before conducting the sensory testing.

4.3 Cruz foam

Cruz Foam is a compostable foam packaging product manufactured using Chitin found abundantly in crustaceans and fungi, which is the second most common biopolymer in the world.

The pilot research project will focus on understanding the use of Cruz Foam solutions including Cruz Cool, Cruz Chill, Cruz Pack, Cruz Wrap in the red meat supply chain.

Cruz Foam is expanding its operations in USA, working in cold chains of fish and consumer food delivery.

Compostability - Cruz Foam has passed ASTM D6400 and D5338 compostability testing at Environmental Research and Innovation Center at the University of Wisconsin Oshkosh , Napa recycling and waste services and Juneau Composts. The ASTM D6400 and D5338 tests proved Cruz Foam biodegrades in approximately 100 days. The figure below shows the biodegradation percentage of Cruz Foam over a two-month period compared to a control substance of microcrystalline cellulose and compost.

Figure 2: Cruz Foam before and after industrial composting. Top: Napa Recycling & Waste Services, Bottom: Juneau Composts

Anaerobic digestion - Cruz Foam has also undergone a biomethane potential (BMP) test at the Oshkosh lab at the University of Wisconsin, which yielded 68.2% methane content indicating an excellent biogas quality rating.

Water solubility - The study found that the optimal conditions for dispersing first generation Cruz Foam in water is 60°C (140°F) with a concentration of 50g/L. The resulting slurry from Cruz Foam dispersal in water was tested against general acceptable levels in wastewater treatment plants:

Lomi™ Approved (Waste to Dirt Testing)- The Lomi is a countertop appliance that turns food waste and other compostable products into dirt in as little as 4 hours. Cruz Foam is the first product to score a perfect 100 on the Lomi-approved test. This means Cruz Foam product broke down in the Lomi within 1 cycle whereas most compostable products take 2 cycles.

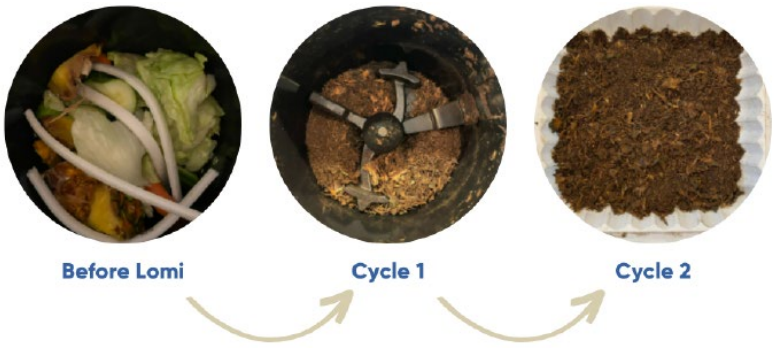


Figure 3-Lomi™ waste to dirt test. From left to right: Before Lomi™ testing, After cycle 1 and 2

It's encouraging to note that Cruz Foam continuing to obtain industry recognition and was included in the TIME magazines best inventions of 2023.

4.3.1 Opportunity for MLA

The research will explore what needs to be done to get the optimum temperature control for retail ready meat packs using Cruz Foam in a lab environment. The intention is to ultimately use in bigger cool rooms and truck refrigeration for shelf-life extension and energy savings.

The thermal calculation test results and data conducted in a smaller Cruz Foam solution can be extrapolated up for larger environments. The thermal property analysis conducted will include testing for colour, smell, and product change of red meat.

The samples and product specifications were received by the MLA team and preliminary testing plans were documented. Its estimated that close to 30% of cost of a meat product is refrigerated shipping.

Cruz Foam team was completely focusing on commissioning their first large scale production facility in late 2023 – early 2024 period and had difficulty in allocating dedicated resources for the MLA pilot.

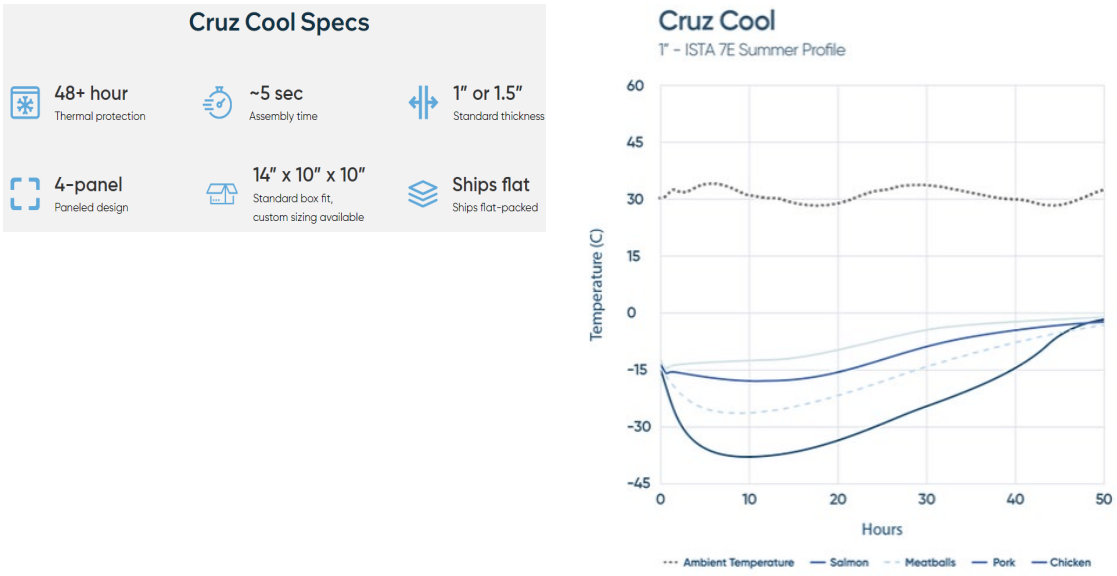


Figure 4- The specifications of CruzCool product and test results in storing fish, pork and chicken in low temperature

4.3.2 Next steps

The next steps

- The tests will explore what needs to be done to get the best temperature control for fresh, refrigerated (not frozen) meat packs using Cruz Cool boxes. The thermal calculation test results conducted in a smaller Cruz Foam solution can be extrapolated up for larger

environments. The thermal property analysis will include testing for colour, smell, and product change of fresh, refrigerated meat

- The results will include carbon emission analysis and will be guided by the MLA developed cold chain cost calculator from myenergy.tech
- The results will explore whether the use of Cruz Foam material for packaging meat products, has the thermodynamic properties to enable the product to maintain the desired temperature range in a shipping environment, where the meat transport providers can increase the ambient temperature (i.e. save on energy costs).

4.4 Dissolves

DisSolves makes an edible, water-soluble packaging for powdered food products. The packaging is made from natural ingredients and use it to make food products more convenient and sustainable by packaging individual servings of these products in dissolvable pods. The end-user simply drops the full pod in water, mixes, and enjoys. The packaging dissolves into the beverage, leaving behind no flavour or waste. These materials dissolve easily in water, milk, and juice.

Since the packaging makes products easier to use, Dissolves can compete with traditional packaging based on creating new features and environmental friendliness. Dissolves can be sold to food and beverage brands as a means to create premium versions of their existing products, similar to how podded detergent is sold at roughly twice the price of traditional detergent. By partnering with the only contract pod packager in the United States registered with the FDA for food production, Disssolves provide customers everything they need to go from bulk powder to store ready pods, removing as much friction from the process as possible.

DisSolves is based in Pennsylvania, USA and currently conducting number of commercial pilot projects.

4.4.1 Opportunity for MLA

Progress meeting with the DisSolves team have commenced to understand the technical specifications, food safety specifications, current trial experiences, learnings with the USA nutraceuticals industry and the pilot project planning.

The project research objectives include testing the Dissolves product as a delivery mechanism for red meat products that have historically been consumed in tablet or powdered form. The use of a water-soluble pod will help overcome the apprehension that is shown to take supplement pills as it creates a medicinary sensory experience. It was decided to test the DisSolves product first with Collagen supplements.

Creation of a collagen pod that can be mixed with water/ coffee/ soup, or a beef powder or beef pieces in a pod that can be added to a dehydrated vegetable soup package, creates an opportunity to health-conscious consumers or ageing consumers. With pods, there is no measuring servings, spilling powder, or waste to dispose for the end-user. Dissolves has found that podded food products currently sell for 55% more per gram compared to lose powder with the USA retailers.

The DisSolves pods potentially can be used with meat trays to hold a portion-controlled sauce, spice pack or butter.

4.4.2 Next steps

The following project team is getting assembled, and the project planning is in progress.

- Organic Collagen Australia – Provide collagen required for the project and advice on the product, shelf life and serving size specifications.
- Watch Me Think Australia – Conduct a consumer research study on using collagen pods and collect consumer feedback.
- Food Nutrition Australia – Assist the DisSolves team on the necessary compliance with the Food Standards Code in Australia.

5. Conclusion

Connecting with the emerging new technology companies to experiment with Australian red meat was completed successfully in the FoodBytes! Pilot program.

After the internal review and external review, FoodBytes! program was successful in sourcing over 45 applicants and screened them down to 17 startups for selection by MLA, that aligned with the research focus areas. MLA selected 3 startups for pilot projects and further research. These start-ups each have potential to continue their work in partnership with MLA that could significantly impact the Australian red meat value chain.

5.1 Key findings and benefits

5.1.1 Understand the latest global innovation trends and startup insights

The project milestones included an external review of global trends, industry data & market research, and commercial research analysis. Which was followed by an analysis of latest startups that are aligned to the MLA strategic plans.

The continued focus of MLA in the latest disruptive innovations is crucial to develop new products, gain market and consumer insights, and conduct accelerated experimentation of new technologies and practices in a low-risk format. The learnings and insights gained will further help the development of long-term growth strategies and business development for MLA value chain partners.

5.1.2 Discover new methods to deliver the nutritional needs of an ageing population

Producing novel methods to deliver red meat derived products that are nutrient rich will assist ageing populations stay active. Making the product delivery method hassle free, spill free, polythene free and portion controlled will make the product appealing to daily use by aging consumers and/or their carers. The appeal of a value added red meat alternative to bulk product suppliers provides an opportunity for the red meat industry.

5.1.3 Discover new processing technologies for improved flavour, nutrition and colour

The pilot explored a novel red meat processing technology that is successfully used for fruits by an emerging innovator. Providing a premium dehydrated meat product that retain its flavours and

colour will have an improved appeal to the meat consuming consumers, command a premium price and potentially provide a longer shelf life.

5.1.4 Discover ambient supply chain solutions

The refrigerated transport is a significant cost and an extra carbon footprint addition to a meat tray in a supermarket. The pilot is exploring the ability to use sustainable technologies that can help in this regard and meet the sustainable requirements of the consumers.

6. Future research and recommendations

The learnings and technical findings from researching into innovative startups should be adopted when developing future MLA research opportunities in ageing population, ambient temperature solutions and novel processing technologies.

At the completion of the three pilot proje\cts with True Essence Foods, Cruz Foam, Dissolves, the introductions to relevant MLA value chain partners to commercialise and create technology adoption will benefit the industry as a whole.

The Dissolves technology is tested only for use in Collagen sachets, and there are number of other potential beneficial applications that can be investigated, including the use in dehydrated vegetable soup packages or in meat trays to hold a portion-controlled sauce, spice pack or butter.