



# final report

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## Snacking Project – Organic Beef Jerky

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## Executive Summary

This project comprising of development of organic beef jerky forms part of an overarching Co-Innovation Program between MLA and Arcadian Organic & Natural Meat Co.

Arcadian Organic and Natural Meat Company identified organic meat snacks as a high value growth opportunity. This project undertook to develop and test proof of concept products for specific high growth target markets, explore and validate the associated business model options in procuring, manufacturing and selling new organic snacking products.

A human centred design led innovation methodology informed the design of the project. The team comprised of a cross-functional team within Arcadian Organic & Natural Meat Co, ensuring all perspectives were assessed; R&D, operations, marketing and sales. Critical to the process was the development of the products, continuously testing it with customers, as part of their real-world snacking behaviour.

Another important process was determining and identifying which segment of customers represent the best opportunity, by addressing the greatest number of pain points and unrealised gains.

The project undertook to identify the needs, attractive segments, size of the packaging and barriers visible in entering the Jerky Snacking Products. While also detailing the business case for Organic Beef Jerky within the Snacking Product sector. Finally, the project also supported the research aspects associated with exploring and designing the optimum business model and commercialisation strategy in bringing the product to market.

It was identified that although the jerky market was competitive specifically with non – organic and highly manufactured product offerings - there was definitely a high growth opportunity in the organic segment of this category. The healthier and better for you snack alternatives that consumers are seeking are tasty snacks made from real ingredients that better fit this ideal. The idea of organic beef jerky is highly appealing, offering a grab-and-go protein snacking option for all.

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## 1 Background

Meat snacks have found a place for healthy, muscle-building properties, essential nutrients and low-carb benefits of meaty diets and can also be seen as a healthy lunch box item for kids and adults. Healthy meat snack and perhaps the most popular grab-and-go option, jerky, is delicious and requires absolutely no prep from the consumer.

Snacking has played a part in consumers lives for many years, however it has continuously evolved. Snacking food is no longer an occasional sweet or savory treat, with little impact on our overall wellbeing. Snack foods are now a major part in our daily lives.

During the project, Arcadian Organic & Natural Meat Co. identified that snacks have risen in importance, particularly as many consumers now regularly 'graze', so much so that snacks are now considered an essential source of nutrition in the modern diet. Due to the busy and hectic lives, food takes on far more greater significance. Therefore, ease and convenience impacts all meal occasions.

## 2 Projective Objectives

The projects top-level objective was to develop and implement Arcadian's high value growth strategies in both the domestic and global markets to be achieved via a range of beef jerky snacking products, packaging, processes and value chain concepts.

## 3 Methodology

Arcadian's approach to this project was to embrace Design Led Thinking - putting it at the core to accelerate innovation. The project design accommodated the 'voice of the customer' when designing the intended high valued solution where there was a desirability element or 'problem to be solved'. By staging the project, it allowed innovation sprint approaches, which allowed smaller investment bets to make informed decisions regarding viability and feasibility of an opportunity

Design Led Thinking methodology focuses primarily on the people they are creating the products for, which leads to better product, services and internal processes. It requires pulling together what is desirable from a customer point of view, captures the needs of the people we're creating for. Arcadian's Design Led Thinking was used to combine the essential elements to create an interactive approach.

The intended clean label product attributes which were identified during the discovery phase required a specific novel manufacturing technology that would minimise ingredient requirements and processing interventions therefore a global technology scan was the first step. Once Arcadian's R&D team felt that they had a range of Organic Beef Jerky products with market potential, they were ready to test with consumers, in real world snacking situations.

A large amount of development work was undertaken, testing a number of different products. Resulting in a selection of flavoured Organic Beef Jerky Products. This selection was measured based on a number of attribute criteria and organoleptic qualities.

### **3.1 Dehydration Technology Comparison**

A number of potential processing technologies were identified that were explored. The key challenge was to ensure during the discovery and validation processes that the conceptual and resultant product offering was aligned to and addressed those pain points that were identified early in market opportunity research and delivered on those aspirations that other snack offerings are unable to deliver on.

Trial work commenced initially using small batch dehydrators that were domestic in design, progressing to single trolley ovens and then ultimately to multiple trolley ovens featuring humidity control, smoke phases and drying cycles. Each progression bought with it further complexity.

Gaining further knowledge with each trial batch led to a constant refining process through educated guesswork, data analysis, trial and error. Expertise was also leveraged from 3<sup>rd</sup> party manufacturers as they were progressively engaged to assist in learning the capabilities and technology of each oven. Rigorous data recording was also undertaken, including water activity testing, yield analysis, lab testing for residual sugar/sodium levels and organoleptic data logging.

To perform the required testing a new water activity meter was acquired and commissioned, enabling accuracy to 4 decimal places. This was key for us in 'dialing in' the oven cycles so as to achieve a water activity below 0.85aW without over drying the beef jerky. This enabled superior textural qualities in the jerky which remained soft and chewy.

The process in which we butchered the raw primals and mechanically sliced them changed dramatically through the project. It was learned through the trials that to achieve the perfect thickness ultimately translated to consistency this meant crust freezing primals so that machines could produce the desired outcome. Frequent changes to the parameters of oven cycle timing/phases/temps/relative humidity/smoke etc. to correlate with the the new inputs were required

Valuable new insights around packing the jerky formed part of the prototyping process - including type and size of oxygen scavengers required, necessary sealing equipment to ensure packaging correctly sealed ensuring we did not experience mould problems with product and material used in packaging to ensure environmental variables did not impact on jerky before best before date. Data was recorded to suggest the dried meat water activity equalises when packed in a sealed bag for a period of time, this was important as it directly correlated to the eating texture of the jerky.

### **3.2 Alternative Customer Targets**

The Design Led Thinking approach identified potential market spaces where the product will have an impact in the market place. Inherently, it was believed that the product had a great deal of scope to be interpreted in different ways; it could be considered a taste-based

indulgent product, or protein-based product. This gave the idea that the offering could appeal to different consumers for different reasons.

Arcadian's business is focused on meal behaviour and the Grocery channel. Thus, it is important to define the different dynamics required to effectively compete in the snacking sector. The key dimensions of the market were reviewed and discussed:

- A consumer definition of snacking – the role snacks play in consumers lives verse food behaviour.
- The margin opportunity and growth in snacking, in contrast to food.
- Trends driving change within the snacking sector.
- The range of offerings in the snacking sector, how the lines have become blurred between food and snacks and the diversity of offerings.
- What does it take to be successful in the snacking market; criteria against which will assess the offering, based upon consumer feedback.

Fundamentally to identify where Arcadian Organic Beef Jerky will be positioned was determined by . identifying the market space that we have the greatest potential within. It is required to identify a group of consumers whom find the product most desirable, that are sufficiently large and have a big enough problem that we are able to solve.

The structure of the sampling was designed to cover off a number of key dimensions including, gender and age. It is know that males and females typically have different tastes and expectations when it comes to snack foods. Snacking is more prevalent amongst younger age groups, making up a higher proportion of calories consumed, compared to older consumers.

### **3.3 Market Entry**

Arcadian's first and most significant challenge to address was optimising the value proposition. Any meat-based snack is going to be more expensive than chips or other similar snack offerings. Therefore, it is essential for the Organic Beef Jerky to deliver important value-adding benefits, delivering to the target customers pain points and desired gains.

Defining the value proposition became the basis for developing the full marketing mix. A full description of the target consumer segment was developed to bring to life aspects of the snacking purchasing behaviour. A range of different versions of meat snacks was discussed. Therefore, Arcadian realised a varied tastes, different versions and range of flavours required to satisfy target customers.

Another critical decision was in development of the enhanced product, by discussing the existing products that target consumers currently chose as part of their snacking behaviour. As Arcadian Organic Beef Jerky is a premium offering, the package size was tailored to land on a identified price point. From the research it was believed that a certain price point was crucial, as was providing the required quantity to satisfy the target customer snacking needs.

Through developing business model canvas's, it was determined that the initial focus was if there was a desirability within the customer segment, following closely on if it was feasible. It was a key point of the process to identify the key challenges in making Organic Beef Jerky a

success in the market. At every point, there was key challenges, addressing them being critical to realising market success.

## 4 Results

The success of the project could be contributed due to a number of factors;

The Design Led approach – rather than developing the Organic Beef Jerky Snack internally and using taste panels to validate its appeal, the products were tested with target customers, in real world snacking situations.

For Arcadian Organic & Natural Meat Co the project presented the opportunity to explore and understand a new market segment - a segment which the business had no prior experience, requiring significant investment on many levels, to deliver the required product offering and business model to be successful.

In analysing the alternative customer markets and the marketing entry, it was defined that the proposed product position will be within:

- Independent retailers (Bottle shops, Metcash – IGA, Spar, etc)
- Online retail (integrated ordering and payment platform, contracted pack and send service)
- Online wholesale (business portal offering same services as above with business margins built into cost model)
- View to range in Major grocery (Coles, Woolworths), this will be future development and not in the initial launch of product.

### 4.1 Monitoring, evaluation and reporting (MER)

Areas of focus	Project targets	Project achievements
<b>Inputs</b> <i>Describe the planned and expected inputs involved in your project.</i>	<ul style="list-style-type: none"> <li>• Business case including Profitability; identifying benchmark yields to ensure financial success</li> </ul>	<ul style="list-style-type: none"> <li>• Business plan developed</li> <li>• Processes developed resulted in target yields being reached</li> <li>• Persistence even after early stages when yields did not point to financial success and finding efficiencies in production</li> </ul>
<b>Outputs</b> <i>Describe the outputs planned/expected from your project:</i>	<ul style="list-style-type: none"> <li>• Online marketing tool developed</li> <li>• System involving 3<sup>rd</sup> parties for payment and delivery of product</li> <li>• Marketing campaign launched</li> <li>• Launch into independents in grocery</li> </ul>	<ul style="list-style-type: none"> <li>• Online ordering website developed</li> <li>• Fully integrated payment and delivery hub launched</li> <li>• Comprehensive online marketing strategy implemented</li> <li>• Launched into Metcash</li> </ul>

<b>Changes in knowledge, attitudes and skills</b> <i>Describe the changes in KASA that you are planning to achieve:</i>	<ul style="list-style-type: none"> <li>Knowledge/attitudes/skills of participants before and after project/activity</li> </ul>	<ul style="list-style-type: none"> <li>In depth learning of complete jerky production process</li> <li>Technical aspects of parameters in production of dried meat including using only natural ingredients</li> </ul>
<b>Practice changes</b> <i>Describe the practice changes that you are expecting to achieve by the end of your project:</i>	<ul style="list-style-type: none"> <li>Producer practice (relevant to the topic/project) before and after project</li> </ul>	<ul style="list-style-type: none"> <li>Have the ability to produce product in house</li> <li>Expand into other snacking lines</li> <li>Expand factory to include a high care setup</li> </ul>
<b>Benefits</b> <i>Describe the benefits that you are expecting to achieve as a result of the project:</i>	<ul style="list-style-type: none"> <li>Benefits from outcomes</li> <li>Costs to achieve outcomes (e.g. increased inputs, labour)</li> <li>Benefit Cost and Sensitivity analyses at the business level</li> </ul>	<ul style="list-style-type: none"> <li>New market segment</li> <li>Ability to grow segment</li> <li>Flexibility that raw meat cannot allow</li> <li>Ability to scale up or down by using 3<sup>rd</sup> party manufacturers</li> <li>Achieving a premium price for secondary primal</li> </ul>
<b>General observations</b>	<ul style="list-style-type: none"> <li>Project learnings</li> <li>What were the barriers and enablers to change – and where are the research gaps, if any?</li> <li>Any unintended/unexpected benefits or consequences?</li> </ul>	<ul style="list-style-type: none"> <li>Fundamental knowledge and expertise in dried meat snacks was attained</li> <li>Asking questions – how and why?</li> <li>Many networks/relationships developed both domestically and internationally</li> </ul>

## 5 Discussion & Conclusion

The development of organic beef jerky snacking products has potential, although the conventional non-organic market segment is very competitive. The research validated that consumers are seeking ‘better for you’ snack alternatives and are looking for tasty snacks made from real ingredients that better fit this ideal. The idea of organic beef jerky is highly appealing, offering a grab-and-go protein snacking option across the consumer segments researched.

Addressing the projects objectives:

1. Identify needs, attractive segments, size and barriers to entry for concept Organic Beef Jerky Snacking Products.

Focusing on identifying the segment and customers for the Organic Beef Jerky Snacking Products, by recruiting a group of potential target customers and understanding their snacking behaviours, pain points and unrealised gains, enabled a comprehensive idea of the potential fit for Snacking Products to be assessed. They were provided the products to consume as part of their normal snacking behaviour. This gave a great idea and confidence that we were able to identify the most promising target customer segment.



## 2. Detailed Business Case for the Organic Beef Jerky Snacking Products.

Providing a sample to the target customers with a high quality version of the Organic Beef Jerky Snacking Product to consume as part of their regular snacking. Their experiences were evaluated to assess the fit of the product. This gave an accurate assessment of optimising the value proposition that was able to be determined. Arcadian produces a large volume of trim for grinding purposes for the export market, consequently we have flexibility to adjust formulations for trim to allow supply of primals for jerky production. We have set this up in our system.

## 3. Development of a commercialisation plan to deliver on the prescribed product-process-market fit.

With a clear understanding of the value proposition and a clear target customer, the group worked through identifying the critical challenges in building a Business Model to support the successful establishment of Jerky Snacking Products in the market. Using Arcadians network of 3<sup>rd</sup> party manufacturers has enabled a scalable platform to launch jerky on a commercial level with the ability to increase production capacity if required. IP has been developed around ingredient premixes and production processes.

# 6 Appendix



