

**SAVE
FOOD
PACKAGING
DESIGN
CRITERIA
RESOURCE
BOOKLET**

The CRC Program supports industry-led collaborations between industry, researchers and the community.

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THE FOUR KEY DEFINITIONS

Introducing the 4 key definitions used widely throughout this document - SFP, FLW, NPD, and NPPD.

SFP SAVE FOOD PACKAGING

Save Food Packaging is designed to minimise or prevent food waste from paddock to plate using innovative and intuitive design features that can contain & protect, preserve, extend shelf life, easily open and reseal, provide consumer convenience and portion control; all the while meeting global sustainable packaging targets (AIP, 2020; Wikström et al., 2018).

FLW FOOD LOSS AND WASTE

The decrease in quantity or quality of food along the food supply chain. Food Loss and Waste (FLW) is generically referred to as “food waste” in this document

NPD NEW PRODUCT DEVELOPMENT

A standard industry term describing the development process of a new product is referred to as New Product Development (NPD).

NPPD NEW PRODUCT PACKAGING DEVELOPMENT

Although, the NPD term is inclusive of packaging development, it is purposely expanded into the new term New Product-Packaging Development (NPPD) to highlight the importance of packaging development to the product development process.

WHAT IS THE SAVE FOOD PACKAGING DESIGN CRITERIA?

■ Welcome to the SFP Design Criteria Resource Booklet.

This booklet aims to be a go-to resource for the Australian food industry in supporting excellence in packaging design that reduces food waste.

The information is sourced from leading literature, food packaging expertise and research insights. It is to provide recommended strategies that are co-created by researchers and industry experts.

This initiative is in support of the End Food Waste CRC REDUCE program which aligns to the 2030 UN Sustainability Goals and 2025 Sustainable Packaging Targets. It aims to combat the significant issue of 1/3 of all globally produced edible food going to food waste.

Our goal is to promote sustainable food systems through best practice packaging design criteria that is adaptive for all food industries seeking positive change and greater value for all.

For more information, please visit the Appendices:

- References, Acknowledgements, About this Project, Project Partners, Methodology, Acronyms, and more.

WHAT IS THE SAVE FOOD PACKAGING DESIGN CRITERIA?

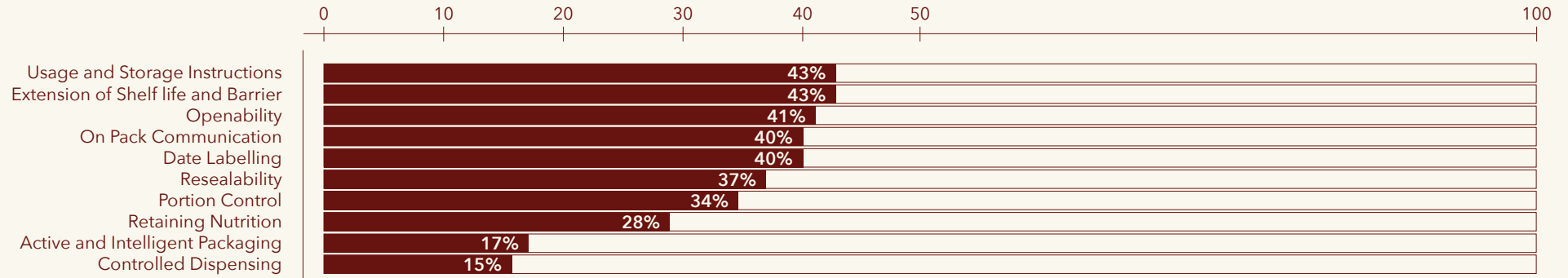
DESIGNING PACKAGING TO MINIMISE OR ELIMINATE WASTE IS HARD

Our research with industry (Industry Survey report, 2021, p. 8) shows that people plan to integrate food waste reduction strategies into packaging designs at the start of the NPD process (brief stage). But at some point those intended SFP strategies gets lost or loses priority to other considerations. Packaging designs often are focused on food loss (food wasted along the supply chain) and less about food waste (food unconsumed at the retail and household environments). However, food waste is the largest contributor to the total quantity of Food Waste overall.

OUR AIM IS TO STREAMLINE THE LANGUAGE AND DIALOGUE AROUND SFP

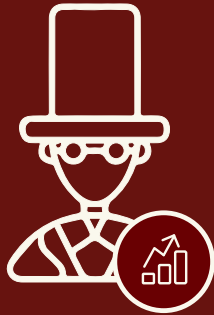
The goal of this criteria (and the research behind it) is to create a clear, visual language and a set of icons that represent the many aspects of SFP. Many of these are often neglected or completely ignored in the design process (like in the diagram on the below). We aim to change that with a system that is identifiable and easy to adopt.

PERCENTAGE OF STAGEHOLDERS (N=95) 'CURRENTLY USING' SFP FEATURES



WHO IS THIS DOCUMENT FOR?

THIS DOCUMENT IS MEANT TO BE ACCESSIBLE FOR
EVERYONE, AT ALL LEVELS OF FOOD PACKAGING
PRODUCTION AND FOOD CONSUMPTION



CEOS



MARKETERS



DESIGNERS



PACKAGING
TECHNOLOGISTS



RETAILERS



CONSUMERS

WE WANT THE WHOLE FOOD INDUSTRY
TO TAKE OWNERSHIP OF THIS ISSUE

WE'VE BROKEN
DOWN OUR
GUIDELINES INTO
FIVE CRITERIA

1

2

3

4

5

EACH CRITERIA CONSISTS
OF FOUR SUB-SECTIONSHIT THE BULLSEYE
GOOD DESIGNVALIDATE FIRST
TEST YOUR INNOVATIONS TO ENSURE BEST PRACTICEMAKE IT YOURS
TAILOR THESE INSIGHTS FOR YOUR
BUSINESS APPLICATIONS WITH CHECK LISTSI SEE NOW
CASE STUDIES TO HELP YOU LEARN HOW OTHERS
ARE DOING ITJUMP AROUND AT WILL
USE THE NAVIGATION IN
THE TOP-LEFT CORNER
TO MOVE AROUND THE
DOCUMENT

GOT FEEDBACK?

Please report any comments or issues (e.g. a link not working) to the AIP and they will look into it. Thank you for your support.

DISCLAIMER

There are times when certain icons do branch across multiple criteria categories. To simplify and align with industry, icons are housed in one criteria.



SIDE NAVIGATION

JUMP TO DIFFERENT SECTIONS
OF THE CURRENT CRITERIAJUMP TO OTHER CRITERIA
OR BACK TO THE MAIN
NAVIGATION PAGE

FOLLOW THE ICONS



FIND A DESIGN FEATURE YOU WANT TO SEE IN ACTION? CLICK THE ICON (OR UNDERLINED TEXT) TO JUMP TO SEE AWARD-WINNING CASE STUDIES AND MORE INFO

CLICK EVERYTHING



WANT TO KNOW MORE? FOLLOW THESE LINKS FOR RESEARCH REPORTS, ARTICLES AND TESTIMONIAL VIDEOS ABOUT FOOD PACKAGING GUIDELINES

READ ABOUT OUR RESEARCH REPORTS TO LEARN ABOUT AUSTRALIA'S NATIONAL GOAL IN MITIGATING FOOD WASTAGE AND THE IMPORTANCE OF SFP

INDUSTRY INSIGHTS REPORTS



Save Food Packaging Design Criteria
Stakeholder Online Survey of Product-Packaging Design Processes

Industry Insights Report
February 2021






Save Food Packaging Design Criteria Stakeholder Interviews of Product-Packaging Design Processes

Industry Insights Report
February 2021



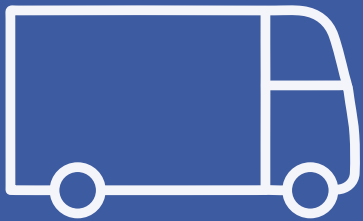
EFWCRC REDUCE PROGRAM

-  CONSUMER PERCEPTIONS OF THE ROLE OF PACKAGING IN REDUCING FOOD WASTE
-  CONCEPTUAL MODEL

1

DESIGN TO CONTAIN & PROTECT THE PRODUCT

FROM SPOILAGE & DAMAGE THROUGH MANUFACTURING, WAREHOUSING & VARIOUS STAGES OF DISTRIBUTION



 SECTION SUMMARY

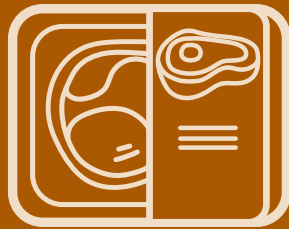
 CASE STUDIES

 ICONOGRAPHY

2

DESIGN TO PRESERVE & EXTEND SHELF LIFE

& ENHANCE PRODUCT APPEAL



 SECTION SUMMARY

 CASE STUDIES

 ICONOGRAPHY

3

DESIGN TO PROVIDE CONSUMER CONVENIENCE

TO NOT WASTE FOOD DURING HANDLING IN THE HOUSEHOLD



 SECTION SUMMARY

 CASE STUDIES

 ICONOGRAPHY

4


DESIGN TO COMMUNICATE TO CONSUMERS

& PROMOTE HOW TO HANDLE, STORE, PREPARE & REUSE FOOD PRODUCTS



 SECTION SUMMARY

 CASE STUDIES

 ICONOGRAPHY

5

DESIGN TO BALANCE FOOD & PACKAGING WASTE TARGETS

FOR OPTIMAL PACKAGING



 SECTION SUMMARY

 CASE STUDIES

 ICONOGRAPHY

SAVE FOOD PACKAGING DESIGN CRITERIA RESOURCE BOOKLET



1 DESIGN TO CONTAIN & PROTECT THE PRODUCT



2 DESIGN TO PRESERVE & EXTEND SHELF LIFE



3 DESIGN TO PROVIDE CONSUMER CONVENIENCE



4 DESIGN TO COMMUNICATE TO CONSUMERS



5 DESIGN TO BALANCE FOOD & PACKAGING WASTE TARGETS



1












DESIGN TO CONTAIN & PROTECT THE PRODUCT

FROM SPOILAGE & DAMAGE THROUGH
MANUFACTURING, WAREHOUSING & VARIOUS
STAGES OF DISTRIBUTION

DESIGN TO CONTAIN & PROTECT THE PRODUCT

FROM SPOILAGE & DAMAGE THROUGH MANUFACTURING, WAREHOUSING & VARIOUS STAGES OF DISTRIBUTION

-  HIT THE BULLSEYE
 -  VALIDATE FIRST
 -  MAKE IT YOURS
 -  I SEE NOW
-  #1  #2  #3  #4  #5

HIT THE BULLSEYE

PRODUCT PROTECTION PROPERTIES



IN-STORE INTERVENTION PROTECTIONS



 **CLICK THE ICON** TO JUMP TO SEE AWARD-WINNING CASE STUDIES



DESIGN TO CONTAIN & PROTECT THE PRODUCT

FROM SPOILAGE & DAMAGE THROUGH MANUFACTURING, WAREHOUSING & VARIOUS STAGES OF DISTRIBUTION

HIT THE BULLSEYE

VALIDATE FIRST

MAKE IT YOURS

I SEE NOW

#1 #2 #3 #4 #5



VALIDATE FIRST



PRIMARY, SECONDARY, AND TERTIARY PACKAGING PROTECTION STRATEGIES

AIMS

To ensure the designer considers the total package: three tiers being primary, secondary, and tertiary as a system to protect the product from spoilage and damage throughout the supply chain.

To ensure the product's original quality, safety and hygiene is protected through the supply chain and the consumer receives the product in an acceptable, desirable, and usable condition.

CONSIDERATIONS

Physical, Chemical, Barrier

Packaging design needs to consider the physical, chemical and barrier protection requirements for the product through the supply chain to the end user. Attributes of packaging formats, materials, and features should be mapped and tested across the primary, secondary, and tertiary levels (see examples on next slide).

Regulatory Compliance Requirements

Understand any of the regulatory compliance requirements for your food category and for the type of supply chain. Once you know your regulations and what you can't change, you also know what can change for future innovations.



DESIGN TO CONTAIN & PROTECT THE PRODUCT

FROM SPOILAGE & DAMAGE THROUGH MANUFACTURING, WAREHOUSING & VARIOUS STAGES OF DISTRIBUTION

HIT THE BULLSEYE

VALIDATE FIRST

MAKE IT YOURS

I SEE NOW

#1 #2 #3 #4 #5



VALIDATE FIRST



PRIMARY, SECONDARY, AND TERTIARY PACKAGING PROTECTION STRATEGIES

CONSIDERATIONS

Physical, Chemical, Barrier

Have you considered where the product will be consumed: Household, food service; hospital; away from home; etc. (end of use of the product and packaging)? These insights can drive the thinking of how the packaging serves the end consumer e.g. Have you considered the end user consuming your product in a car or on a picnic? Both needing varied protection strategies.

Storage and Distribution Environment

- How will the packaging protect the product during supply chain storage and distribution environments: Ambient, refrigerated, frozen, etc.?
- Consider protection during the unpackaging from tertiary and secondary packaging (e.g. retail ready displays reduce the time handling of products to retail shelves).
- Will the product be protected in shopping trolleys and the commute home in loose shopping bags?
- Will the packaging protect the product for varying home storage environments?



DESIGN TO CONTAIN & PROTECT THE PRODUCT

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#1 #2 #3 #4 #5



VALIDATE FIRST



PALLETISATION & STABILISATION / TRANSPORT PACKAGING AND LOAD UTILISATION

AIMS

- Storage and Distribution Packaging Designs**
To consider palletisation and stabilisation; transport packaging and load stabilisation and the positive impact in reducing waste & spoilage from damage as a result from shocks, vibrations, temperature, moisture, air flow, infestation and chemical contamination.
- Ventilation Planning**
To consider the air flow and ventilation requirements for the primary package (which covers both the product and packaging).
- Early Thinking of Critical Dimensions and Layout Design Integrity**
To determine early in the design process, dimensions of your primary and secondary packaging to ensure you maximise your palletisation. Also, to ensure the pallet pattern will provide stability in the warehouse and through the distribution system.
- Three Tier Packaging System**
To prevent damage in primary, secondary and tertiary packaging design, including the way they work together. Limiting movement with the tertiary packaging is a critical success factor.



DESIGN TO CONTAIN & PROTECT THE PRODUCT

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I SEE NOW

#1 #2 #3 #4 #5



VALIDATE FIRST

PALLETISATION & STABILISATION / TRANSPORT PACKAGING AND LOAD UTILISATION

CONSIDERATIONS

- Palletisation Software**
Do you have ready access to palletisation software (if no, talk to your current supplier)?
- Pallet Stabilisation Facilities**
Do you have facilities for pallet stabilisation i.e. Palletisation adhesives, stretch wrap, corner posts, layer pads between layers and top of the pallet?
- Planogram Critical Requirements**
Are there any retail customer shelving requirements? E.g. Set shelf height, width and depth measurements when staking, stabilising, lifting, and reaching that effect the shelf-ready packaging or primary packaging designs.





VALIDATE FIRST

SHOCKS, VIBRATIONS, TEMPERATURE, MOISTURE, INFESTATION, CHEMICAL CONTAMINATION

AIMS

Packaging designs should be mechanically and structurally sound for the purposes of encasing the product, protecting against unwanted damage, spoilage, and contamination.

The supply chain complexities are to be audited with regulations adhered to.

Packaging acts to serve multiple protection needs to maintain product quality, safety, and hygiene. It supports stakeholders in delivering a high quality product through the distribution system, during retail management and shopping, to the end consumers. All stakeholders have specific requirements of the packaging, which designers needs to consider.

CONSIDERATIONS

Distribution Conditions

Do you understand the transport conditions that your product will be subject to?

Transport System Audit

Have you undertaken transport trials with probes/monitors to measure temperature, vibration, and moisture/humidity (particular for export packs)?



 **VALIDATE FIRST**

SHOCKS, VIBRATIONS, TEMPERATURE, MOISTURE, INFESTATION, CHEMICAL CONTAMINATION

CONSIDERATIONS

Consumer Experience Feedback and Product Appraisals

Have you talked with your customers to gain feedback from them on the condition that your product and packaging has been received?

Appropriate Tamper Evidence Solutions

Is your current tamper evidence solution meeting your shelf life and food waste targets (e.g. mechanical versus heat sealed hermetic options)? Does your current tamper evidence solution provide effective protection from possible contamination and/or visual evidence?



DESIGN TO CONTAIN & PROTECT THE PRODUCT

FROM SPOILAGE & DAMAGE THROUGH MANUFACTURING, WAREHOUSING & VARIOUS STAGES OF DISTRIBUTION

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Adapted from:
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 Wohner et al (2019)
 Lockrey et al (2019)
 Lebersorger and Schneider (2014)
 Brennan et al (2021)
 Konstantoglou et al (2021)
 Lanagley et al (2020)
 FAO (2020)
 AIP (2023)
 Ameripen (2018)
 INCPEN and WRAP (2019)
 Chan, R. (2022)
 See reports for full attribution of terms

 **MAKE IT YOURS**

Adopt these **5x Key** Save Food Packaging Design Criteria Icons that serve to contain and protect the product through the supply chain and into households (founded on leading research and industry expertise).

PRODUCT PROTECTION PROPERTIES



Protect the product
 Protection against outer physical impacts - shock, vibration, compression, puncture, insects, rodents, breakage and spoilage, leakage, resist pressure, strikes, rips, sharp edges, and a reliable product closure.



Temperature control/Easy to freeze
 Keeping the product at optimal temperatures, maintaining the properties of the packaging, when considering specific supply chain (ambient, chilled, frozen environment).

IN-STORE INTERVENTION PROTECTIONS



Anti-tamper protection
 Anti - theft, pilferage, tampering, vandalism, and counterfeiting that informs consumers that the authenticity and integrity has been kept.



Product barrier/Ventilated design
 Protection against undesired (transmission, permeation, migration, absorption of light, gases, moisture, flavour, odour, particles, micro-organisms, contamination, oxygen, water or other agents from surrounding atmosphere, maintaining quality, safety and hygiene.



Quality sealing
 Keeping the packaging tight to avoid product leakage or atmospheric ingress.

1



DESIGN TO CONTAIN & PROTECT THE PRODUCT

FROM SPOILAGE & DAMAGE THROUGH MANUFACTURING, WAREHOUSING & VARIOUS STAGES OF DISTRIBUTION

- HIT THE BULLSEYE
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- #1
- #2
- #3
- #4
- #5

I SEE NOW



AWARD WINNING CASE STUDIES

JUNEE LAMB



JUNEE PRIME LAMB & SEALED AIR

2021 SAVE FOOD PACKAGING DESIGN OF THE YEAR - AGRICULTURE SILVER WINNER

2022 WINNER WORLDSTAR SAVE FOOD SPECIAL AWARDS

Key Outcomes and Measurement

- AVL compliant and recyclable through REDcycle
- High oxygen barrier properties
- Materials, sterile barrier bags increase shelf life to 90 days
- Thin partitions, tear and abrasion resistant design
- Bone Guard can be purposefully positioned in bag
- No noise leaking packs

Save Food Packaging Guidelines

- Contain & protect
- Extend shelf life/preserve
- Household convenience
- Consumer education
- Balance environmental impacts

Products: Junee Prime Lamb
Company: Junee Prime Lamb & Sealed Air
Country: Australia

Family owned and operated since 1987, Junee Prime Lamb has quickly grown to become one of the leading producers of premium quality Australian lamb. From humble beginnings processing lambs, beef and pork for local customers, they now specialise exclusively in prime Australian lamb and supply to many parts of the world.

Sealed Air partners with its customers to solve their most pressing resource challenges by delivering new solutions derived from its unmatched industry knowledge and expertise. These solutions create a more efficient, secure and less wasteful global food supply chain and enhance e-commerce through fulfillment and packaging solutions to protect the worldwide movement of goods.



PLANET PROTECTOR PACKAGING



PLANET PROTECTOR PACKAGING

2017 SUSTAINABLE PACKAGING DESIGN OF THE YEAR - CLOSED LOOP GOLD WINNER

2017 SAVE FOOD PACKAGING DESIGN OF THE YEAR HIGH CONVENIENCE SILVER WINNER

2018 WINNER WORLDSTAR SAVE FOOD SPECIAL AWARDS

2019 WINNER WORLDSTAR

Key Outcomes and Measurement

- 100% sheep's waste wool
- Reduces EPS
- Absorbs moisture
- Superior thermal insulation
- Recyclable Food Grade Liner
- E-commerce Design
- Renewable resources
- Compostable

Save Food Packaging Guidelines

- Contain, protect & transport
- Protects product in cold chain
- Balance environmental impacts

Products: Woolpack Thermal Insulation
Company: Planet Protector Packaging
Country: Australia

Planet Protector Packaging was established in January 2016. Their flagship product, Woolpack aims to reduce fossil fuel based packaging by replacing it with a sustainable solution made 100% from sheep's waste wool. Woolpack, multi-served winning, is a game changer, as it is transforming the cold supply chains and it thermally outperforms other packaging options for many different industries such as food, seafood and pharmaceutical. Since winning the PIDA Awards, Planet Protector Packaging has expanded its geographical footprint with operations in Sydney, Auckland and presently establishing a pilot facility in India.



EDGELL SUPA CRUNCH (SIMPLOT AUSTRALIA)



EDGELL SUPER CRUNCH & SIMPLOT AUSTRALIA

2021 SAVE FOOD PACKAGING DESIGN OF THE YEAR - FOOD SERVICE SILVER WINNER

2022 WINNER WORLDSTAR

Key Outcomes and Measurement

- Reduces the risk of spoilage and energy usage
- Increases shelf life
- Temperature evidence
- Instructions on how to extend shelf life at home
- Access steam condensate to escape releasing heat
- Lost the right amount of ventilation on the sides and top
- Utilises stack effect where air is drawn into the carton at the base and then vents at the top
- Raised and ventilated floor
- Maintains crunch during delivery

Save Food Packaging Guidelines

- Contain & protect
- Extend shelf life/preserve
- Household convenience
- Consumer education
- Balance environmental impacts

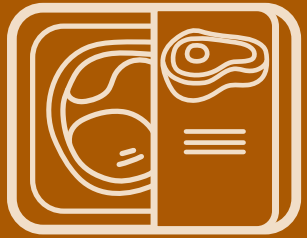
Products: Edgell Super Crunch
Company: Edgell Super Crunch & Simplot Australia
Country: Australia

Simplot Australia is an agricultural and food manufacturing business, employing almost 2,000 people across Australia and New Zealand and operates six manufacturing facilities. They are trusted as a leading provider of quality, sustainable and nourishing food for the ever-changing needs of consumers and customers in Australia, New Zealand and chosen growth markets.



... AND MORE FORTHCOMING

2



**DESIGN TO PRESERVE
& EXTEND SHELF LIFE**
& ENHANCE PRODUCT APPEAL

DESIGN TO PRESERVE & EXTEND SHELF LIFE

- & ENHANCE PRODUCT APPEAL
 - [HIT THE BULLSEYE](#)
 - [VALIDATE FIRST](#)
 - [MAKE IT YOURS](#)
 - [I SEE NOW](#)
- [#1](#) [#2](#) [#3](#) [#4](#) [#5](#)

HIT THE BULLSEYE

NUTRITION AND SHELF LIFE EXTENSION



RESEAL, RECLOSE, PRESERVES AFTER FIRST OPEN



TRANSPARENCY



■ [CLICK THE ICON TO JUMP TO SEE AWARD-WINNING CASE STUDIES](#)

VALIDATE FIRST

PRODUCT PRESERVATION AND EXTENSION THROUGH PACKAGING DESIGNED TO MINIMISE FOOD WASTE

AIM

Consider packaging appearance, shelf life management, monitoring and information throughout the supply chain and at the end customer including in homes.

CONSIDERATIONS

Consider packaging appearance, shelf life management, monitoring and information throughout the supply chain and at the end customer including in homes.

Preserve to extend shelf life

The primary purpose is to protect and preserve, which includes delivery of usable shelf life throughout the supply chain, food service and customer home. Product fit for consumption throughout all probable environments and timelines is the critical function of sustainable food packaging.

Traceability

Critical measurement feedback loop to isolate costly and unsustainable waste generating points and increase greater food quality extension. For example, organisations such as the FDA are already set principals for traceability to become a mandatory inclusion for products imported into the USA.

Authenticity of products

Today's consumers are looking for more than a simple "Made In" statement, they seek out proof of authenticity. Consumers want to know where a product came from geographically, and information to back up statements on pack or to command a premium price for the product itself. Lack of authenticity validation measures result in untrusted distribution chains, can result in slowing of product turnover and increase of retail stock food waste.

VALIDATE FIRST

BRAND IMAGE, EXPERIENCE AND VISIBILITY TO MINIMISE FOOD WASTE

AIM

Shelf life, product appeal and technological packaging features directly linked to brand experience and brand visibility.

CONSIDERATIONS

Preserve to extend shelf life

The best pack experience for your customers leads to brand loyalty/equity/repeat purchases. Stable market share enables planning of stock and managing demand and supply ebbs and flows.

Brand awareness increased by shelf life extension

Shelf life directly increases the time that the brand is in front of the consumer.

Brand building technology

Technology offers the opportunity to deliver features promoting a leading-edge brand image.

Shelf life Targets

What constitutes the total shelf life target needed, including supply chain and consumer needs.

VALIDATE FIRST

PACKAGING TECHNOLOGIES

AIM

Check and prepare for rapidly advancing technologies.

CONSIDERATIONS

Active and Intelligent Features

Offer a new level of consumer engagement opportunities and generating positive brand experiences. Consider alternative technologies such as MAP and Vacuum.

Robust Track and Trace Systems

Shelf life directly increases the time that the brand is in front of the consumer.

Active and Intelligent Packaging

Offer additional ways to communicate to the consumer on packaging where competition for communication space is at a premium.

Shelf life Targets

The FDA openly talks to increased scrutiny on traceability and local legislation may be around the corner.



VALIDATE FIRST

DESIGN TO PRESERVE & EXTEND SHELF LIFE

& ENHANCE PRODUCT APPEAL

HIT THE BULLSEYE

VALIDATE FIRST

MAKE IT YOURS

I SEE NOW

#1 #2 #3 #4 #5

PRODUCT PRESERVE, EXTENSION AND APPEAL THROUGH PACKAGING DESIGNED TO MINIMISE FOOD WASTE

CONSIDERATIONS

- Have you undertaken **shelf life testing** to understand the impact of temperature, moisture, oxygen, carbon dioxide, UV light, and natural light on your product?
- Do you require any **modified atmosphere packaging (MAP)** to maximise the shelf life of your product?
- Is **traceability** an important factor?
- Have you established the **barrier properties** of your packaging to achieve the required shelf life?
- Is **authenticity** an important factor?
- Have you tested the **pack integrity** to ensure you are maximising the shelf life and food waste reduction potential of high barrier materials?
- Is **consumer engagement** an important factor?
- Are you trying to **share information** about the product you cannot fit on the current pack?



MAKE IT YOURS

DESIGN TO PRESERVE & EXTEND SHELF LIFE

& ENHANCE PRODUCT APPEAL

HIT THE BULLSEYE

VALIDATE FIRST

MAKE IT YOURS

I SEE NOW

#1 #2 #3 #4 #5

Adopt these **5x Key** Save Food Packaging Design Criteria Icons that serve to contain and protect the product through the supply chain and into households (founded on leading research and industry expertise).

NUTRITION AND SHELF LIFE EXTENSION



Preserve/Extend shelf life

Increased Shelf Life, extending the shelf life to increase the likeliness of entire product usage (e.g. Active and Intelligent Packaging).



Retains nutrition

Retaining Nutrition, packaging design that extends nutritional value and quality to increase the likeliness of entire product usage.

RESEAL, RECLOSE, PRESERVES AFTER FIRST OPEN



Easy to reseal

Easy to reseal properly resealing after opening to maintain product quality and reduce spillage.



Easy to authenticate

Proof of authenticity provides consumers transparency and assurance of the quality and ethical sourcing of products. This information impacts consumers willingness-to-purchase new food innovations and reduces the likelihood of product fails and unnecessary food waste prior to purchase.

TRANSPARENCY



Easy to trace

Accessible information for ease of recalls, education and alerts, (batch number, origin, destination).

Adapted from:

Wikström et al (2014)

Verghese et al (2015)

Lindh et al (2016)

Hellstrom et al (2017)

Wohner et al (2019)

Lockrey et al (2019)

Lebersorger and

Schneider (2014)

Brennan et al (2021)

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INCPEN and WRAP (2019)

Chan, R. (2022)

See reports for full attribution of terms

DESIGN TO PRESERVE & EXTEND SHELF LIFE

- & ENHANCE PRODUCT APPEAL
- HIT THE BULLSEYE
- VALIDATE FIRST
- MAKE IT YOURS
- I SEE NOW

I SEE NOW

AWARD WINNING CASE STUDIES

HAZELDENE'S CHICKEN FARM & SEE

DON KRC

FRESH TECHNOLOGIES LTD & SEE

2D BARCODES BY GS1

... AND MORE FORTHCOMING

CLICK THE ICON TO JUMP TO SEE AWARD-WINNING CASE STUDIES

3



**DESIGN TO PROVIDE
CONSUMER CONVENIENCE**
& TO NOT WASTE FOOD DURING
HANDLING IN THE HOUSEHOLD



HIT THE BULLSEYE

DESIGN TO PROVIDE CONSUMER CONVENIENCE

& TO NOT WASTE FOOD DURING HANDLING IN THE HOUSEHOLD

HIT THE BULLSEYE

VALIDATE FIRST

MAKE IT YOURS

I SEE NOW



#1

#2

#3

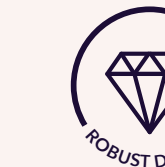
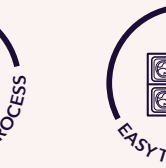
#4

#5

CONTROLLED DISPENSING, USER-FRIENDLINESS



EFFICIENCY AND INTEGRITY



PORTION CONTROL



CLICK THE ICON TO JUMP TO SEE AWARD-WINNING CASE STUDIES

VALIDATE FIRST

ENABLE & SUPPORT DESIGN THINKING THAT MINIMISES FOOD WASTE

Consider packaging impacts during the use phase in consumer homes. Pack access, correct portion sizing, dispensing and convenience all impact food waste and your brand perception.

CONSIDERATIONS

User experience

Consider the best pack experience: for your customers leads to brand loyalty/equity/repeat purchases. The emotional connection to your product is substantially influenced by functional performance (e.g. the unboxing experience). We have all had good and bad experiences with packaging as consumers and these experiences directly impact perceptions of the brand and product.

Handling

Ensure packaging is easily accessible, reclosable and resealable which facilitates efficient dispensing: Packaging needs to be proportionate to the portion size of the product and provide consumer convenience in the preparation and cooking experience.

Convenience

Design packaging that provides convenience in the household: This drives appropriate behaviours and helps the consumer make the right decisions in food storage, preparation, and cooking.

The Value of SFP Designs

Aim to communicate the value of SFP. Food waste generated in consumer homes is one of the largest sectors where food waste occurs: Studies show that food waste at the consumer home can be up to 50% of total food waste throughout the food supply chain. Consumers are seeking smart ways to save money and not throw food away.

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CONSIDERATIONS

- Performance**
Excellent functional performance: Access, dispensing, portioning and convenience reduces food waste and supports your brand value.
- Peer-learning from other Industries**
Look to adjacent industries for inspiration and ideas, such as dairy, pharmaceuticals, dry goods, pet food, beverages, etc.
- Investigate emerging technologies**
Be an early adoptor with Pack technologies that interact with product such as 'cook in' technologies are advancing rapidly.
- Use of quality materials and branding**
Integrity Technologies: Offer the opportunity to deliver features promoting a leading-edge brand image. Consider Labels, adhesives, coatings, closure etc. This indirectly communicates to consumers that you are trustworthy, have integrity, and offer a premium product of value that should not be wasted.
- Tamper Evidence**
Providing retailers and consumers the assurance the product has not been opened or compromised. Customers will not purchase a product that is opened or damaged and such items are often discarded.



DESIGN TO PROVIDE CONSUMER CONVENIENCE

& TO NOT WASTE FOOD
DURING HANDLING IN
THE HOUSEHOLD

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CONSIDERATIONS

Resealability

Reseal and reclose functions are often deemed by consumers as the best way to avoid food waste at home: Can the product be stored in a partly accessed or used pack?

Ease of dispensing

Consider designs that enable the ease of controlled dispensing by the consumer to achieve portions they want at the time of preparation and consumption to eliminate any chance of spillage or unused product. Consider designs where the whole product can be reached and used within its shelf life.



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CONSIDERATIONS

Ease of use

Do you consider age of your users / physical abilities and strengths (e.g. elderly users who live with Arthritis, vision impaired, physically handicapped, or even impatient children). Packaging that has a strong seal around the edge needs to have a larger overhanging flap to allow users ease of peeling open to reduce the possibility of spilling the product or the indication of where to cut the bag to avoid a too large opening and the product drying out. Consider how the product is accessed and prepared, think about how to improve this for functional performance for people, and as a result increase the likelihood of a good experience and potential repeat purchase.

All in one packaging

Will your consumer need a tool i.e. knife, scissors, pliers, screw drive, to open your packaging?
Consider innovative packaging to allow people to consume your product on the go - i.e. the lid turns into a spoon?

Undertake consumer group assessment

Get all types of consumer appraisals, opening and closing of your packaging, experiencing your product and packaging.

VALIDATE FIRST

CONSIDERATIONS

Not all features required

If your packaging is single-use or a portion pack, then a reseal feature may not be required. Consider what works best for your product/s, people, the planet, and profit goals and targets.

What is the contents of the package?

**What is the packaging format used?
Is this the best option?**

**What is the current shelf life?
Can this be improved?**

What are the number of recloses required by the consumer?

What are the barrier properties of the current packaging materials OTR and WVTR?


Easy to read or Understand

For opening and resealing features included in your packaging, it is essential to provide simple, clear i.e. easy to read/colour contrast /size and font, instructions to maximise the features.

What temperatures in production, supply chain and consumer homes are the product exposed to?

Have you considered the cost/benefits of alternative pack sizes, regarding food waste, convenience and packaging/processing cost?

Is your re-close solution maximising in home shelf life i.e. many over-caps used for re-close don't provide good pack seal integrity?

Arthritis Australia provides packaging testing services to determine the accessibility and ease of use of the product packaging and provide an industry. 



MAKE IT YOURS

Adopt these **16x Key** Save Food Packaging Design Criteria Icons that serve to contain and protect the product through the supply chain and into households (founded on leading research and industry expertise).

CONTROLLED DISPENSING, USER-FRIENDLINESS



Easy to open

Easy to open design that avoids spillage, maximises entire product usage.



Controlled dispensing

Easy to dose design enabling measured doses (spout mechanism), slow dosing speed, (surface treatment inside packaging).



Easy to empty

Easy to empty packaging design (i.e. bottle tube) that allows consumers to access the whole product contents without force. Design that avoids product residue, maximises entire product emptying, enables full product reach or squeeze out, also supports easy of recycling as the product requires to be fully cleaned out of the packaging.



Easy to grip

Easy to grip design that reduces the risk of dropping e.g. textured laminates, board creasing or external surface ribbing.



Accessible design

Packaging is openable, readable and can be used by everyone - however they encounter it.



Easy to freeze

Packaging designed for clear and straight-forward freezing options; airtight; stackable.



Easy to recycle

Easy to know how to recycle and easy to pull apart and pack down suitable for different recycling systems.

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Easy to peel

Designed so that all abilities can easily access the packaging function that assists with peeling the lid of a can, such as enough grip and tabs for easy access.



Ready meals

Pre-prepared meals requiring little additional preparation before consumption.



Integrity of materials

Selection of the appropriate packaging material that will support integrity across its product life considering type, weight, ergonomics, mechanical and chemical properties. Recommendations in considering mono construction structures that support SPGs.



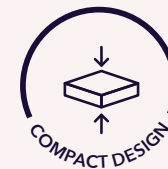
Easy to pack and process

Packaging design fit for supply chain purpose and maximises efficiencies, noting the areas where food loss occurs and where packaging can mitigate these known risks.



Stable design

Designing packaging that is stable in transport, storage, stacking, retail shelves and displays and in the household environment, to reduce toppling and product damage or spillage.



Compact design

Designing modular packaging shapes that maximise the volume area (fill rate) allocated for transport and storage, moving greater volumes per truck of fresh products.

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Consumer convenience

Easy to empty, packaging design that allows consumers to access the whole product contents without force. Design that avoids product remnants, maximises entire product emptying, enables full product reach or squeeze out, also supports easy of recycling as the product requires to be fully cleaned out of the packaging.



Easy to stack

Easy to Stack designing packaging with appropriate structure, materials and pack fill to protect the delivery, withstanding the full stacked weight over the transport and storage periods.



Robust design

Designing packaging capable of maintaining product integrity within the varied warehousing conditions, including the movement into, storing, and out of the locations with efficiency.

EFFICIENCY AND INTEGRITY



Easy to inventory

Designing packaging that clearly presents, or easily makes available (e.g. SSCC / 2D CODES), product information, identifying it for efficient inventory management (e.g. avoid over-ordering or poor stock rotation).



Easy to lift

Offering the ideal weight for lifting and loading for transporting and consumer access in store. Unified portions weights in each pack to reduce the likelihood of consumers feeling missed out if one pack is less than another.

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Easy to cluster

Designing packaging that is easily grouped, clustered, or secured together to aid in handling in transport and minimises unintended product-packaging damage.

PORTION CONTROL



Portion control

Available in various sizes, e.g. smaller packaging portions. Reduce excess buying by providing appropriate sizing. Product offered in portions suitable to household needs to avoid food expiry. packaging with compartments that can be opened individually or easily reclosable sections.



Available in various sizes

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AWARD WINNING CASE STUDIES

SOUTHERN FRESH FOODS

SOUTHERN FRESH FOODS (NEW ZEALAND)

2021 SAVE FOOD PACKAGING DESIGN OF THE YEAR - RETAIL BRONZE WINNER

Southern Fresh Foods Designer Vegetables

Key Outcomes and Measurement

- Created new product from restaurant waste
- Collectible recipe card to inspire consumers & help reduce meal fatigue
- FSC Certified Board a new fibre side
- Packed in thin film to protect the produce
- Recyclable film
- Suited for in-home cooking
- Sealed film for product freshness
- Increased shelf life & freshness

Save Food Packaging Guidelines

- Extend shelf life/guarantee
- Minimised food waste into a commercial product
- On-Pack recipe
- Balance environmental impacts

Southern Fresh | **Product:** Designer Fresh vegetables | **Company:** Southern Fresh Foods | **Country:** New Zealand

Over 20 years ago, Southern Fresh Foods was established in the heart of the Waikato by the Dunns family, who still own and operate it today. Southern Fresh has gone from its humble beginnings to become one of New Zealand's leading growers and processors of high-quality, specialty baby vegetables, gourmet salads, and fresh herbs.

AIP | PIDA AWARDS | WORLD PACKAGING PROMOTION | WORLDSTAR PACKAGING AWARDS

GEORGE WESTON FOODS

GEORGE WESTON FOODS & O F PACKAGING

2021 SAVE FOOD PACKAGING DESIGN OF THE YEAR HIGH COMMENDATION

George Weston Foods & O F Packaging Don KRC Kabana/Chorizo Minis

Key Outcomes and Measurement

- Reusable zipper & easy to open
- Returns to Store recyclable
- Easy Grip and tear function
- Reduces Product Waste
- Easy to fill on production
- No need for scissors

Save Food Packaging Guidelines

- Contain & protect
- Extend shelf life/guarantee
- Household convenience
- Consumer education
- Balance environmental impacts

GWF / George Weston Foods Limited | **Product:** Don KRC Kabana/Chorizo Minis | **Company:** George Weston Foods & O F Packaging | **Country:** Australia

afpack

George Weston Foods makes some of Australia and New Zealand's favourite and most innovative products. They are one of Australia and New Zealand's largest food manufacturers employing over 6,000 people across 45 sites. Their product range is diverse and includes leading brands such as Top Tip, Sunbisc, Abbots Village Bakery, Burgan, Golden, DON, KR Castlemaine, Yum's as well as MAURI (frozen, sealed products, animal feed) and Jaxol (cleaning and hygiene solutions).

AIP | PIDA AWARDS | WORLD PACKAGING PROMOTION | WORLDSTAR PACKAGING AWARDS

SPC ARDMONA

SPC

2016 SAVE FOOD PACKAGING DESIGN OF THE YEAR GOLD WINNER

2017 WINNER WORLDSTAR

SPC ProVital® Easy-Open Portion Control Fruit Cup

Key Outcomes and Measurement

- Easy to Open Certified (90% Pass)
- Reinforced and lengthened pull tab
- Clear readable opening instructions
- Easy grip design shaped cup
- +8 (Ergo) Accessibility Rating
- Designed to assist hospital patients
- No pain in opening
- No need for any tools

Save Food Packaging Guidelines

- Portion Control
- Easy to open & handle
- On-Pack communication
- Balance environmental impacts

ProVital | **Product:** SPC ProVital® Easy-Open Portion Control Fruit Cup | **Company:** SPC | **Country:** Australia

SPC is an Australian brand that has been producing high quality products for Australian families for over 100 years. Proud of its rich Australian heritage and provenance, SPC provides naturally better and more convenient options for all Australians to eat well. SPC is committed to delivering Better Food for the Future.

AIP | PIDA AWARDS | WORLD PACKAGING PROMOTION | WORLDSTAR PACKAGING AWARDS | 2017 WINNER WORLDSTAR

... AND MORE FORTHCOMING

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4



**DESIGN TO COMMUNICATE
TO CONSUMERS**
& PROMOTE HOW TO HANDLE,
STORE, PREPARE & REUSE
FOOD PRODUCTS


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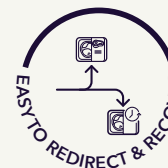
PACKAGING-RELATED INFORMATION AND INSTRUCTIONS



PRODUCT PACKAGING RELATED INFORMATION AND INSTRUCTIONS



PRODUCT-PACKAGING-RELATED "VOLUNTARY" RECOMMENDATIONS



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CONSUMER BEHAVIOUR AND INFORMATION

CONSIDERATIONS

Informed consumer

Information is essential to ensure the household and/or consumer understands the most appropriate ways to store, handle and prepare food to stop possible spoilage and food being thrown away. Consistent communication to consumers on a range of information is needed i.e. recipe ideas for leftovers could be provided to ensure all the product is used in multiple meals.

Use-by & Best Before

The selection and understanding of 'Best Before' or 'Use By' dates needs to reflect the manufacturers and retailers' warehouse and distribution timing and provide the consumer understanding of when the product is no longer suitable or safe to consume. It's a complex issue and needs focus and increased levels of understanding.

How does the packaging promote SFP

In addition to this information, there is an additional need for manufacturers and retailers to communicate to the consumers why the packaging format is being used to extend the product quality and promote consumer use, not waste. This could be both on pack or in store. Such information will help educate consumers on why packaging is being used, and assist in navigating the current, significant, negative consumers perceptions of packaging, especially plastic packaging.



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USAGE AND STORAGE INSTRUCTIONS

CONSIDERATIONS

Guidance

Does your consumer need guidance for safe handling or food safety concerns when preparing the product inside the package?

Safe consumer handling

Have you undertaken consumer research to understand possible consumer issues in handling and disposing of your packaging and product, and end of life options?

Format

What is the packaging format used?

Date

When is the product BEST Consumed by?

Proper storage

Do you understand the optimal conditions for the storage of your product, and do you need to communicate this to your customers?

Clear instructions

Will the usage and storage instructions on your packaging be easily seen, read and understood?

Shelf life

What is the shelf life of the product?



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USAGE AND STORAGE INSTRUCTIONS

CONSIDERATIONS

Consumption

When **MUST** the product be consumed by?

Shelf life after opening

What is the shelf life in the consumer home after **FIRST** opening?

Refrigeration

Does the product need to be refrigerated after opening?

Refreezing

Is it safe to refreeze the package after opening?

Storage conditions

What are the storage conditions the product **MUST** be held under in a consumer's home?

Off-pack engagement

How can you engage with a consumer in an off-pack context using an on-pack trigger/nudge i.e. QR codes?



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DATE LABELLING: 'BEST BEFORE' AND 'USE BY' DATES

CONSIDERATIONS

Definitions

Do you understand the difference between the legal definition of 'Use By' and 'Best Before'?

Shelf life testing

Have you established shelf life testing procedures for your products?

Supply chain environmental exposure

Do you understand your supply chain in terms of environmental conditions of exposure for your product?

Consumer date misunderstanding

Are you aware that households contribute to **34.3%** of Australia's **7.6 million tonnes** (MT) of food waste per annum? One of the key reasons for this food waste comes from consumers misunderstanding of 'Use By' and 'Best Before' dates.

Procedures for optimal shelf life

Have you established with your customers a procedure for setting the required shelf life to ensure your consumers will receive the optimum quality of your product?

Physical storage testing

Do you undertake physical storage testing of your products to verify shelf life performance? Is this information used to review and update your procedures?



DESIGN TO COMMUNICATE TO CONSUMERS

& PROMOTE HOW TO HANDLE, STORE, PREPARE & REUSE FOOD PRODUCTS

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FOOD STANDARDS AUSTRALIA NEW ZEALAND (FSANZ) INFORMATION

FOOD STANDARDS CODE - STANDARD 1.2.5 - INFORMATION REQUIREMENTS - DATE MARKING OF FOOD FOR SALE

- Date marks give a guide to how long food can be kept before it begins to deteriorate or may become unsafe to eat.
- The food supplier is responsible for placing a use by or best before date on food.
- Foods that must be eaten before a certain time for health or safety reasons should be marked with a use-by date. Foods should not be eaten after the 'Use By' date and can't legally be sold after this date because they may pose a health or safety risk.
- Most foods have a 'Best Before' date.
- You can still eat many food after a 'Best Before' date safely in many contexts, but the food may have lost some quality. Foods that have a 'Best Before' date can legally be sold after that date provided the food is fit for human consumption.

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Adopt these **22x Key** Save Food Packaging Design Criteria Icons that serve to contain and protect the product through the supply chain and into households (founded on leading research and industry expertise).

PACKAGING-RELATED INFORMATION AND INSTRUCTIONS



How to assemble/How to handle

Offering clear information/instructions on how to use, assemble, open, close, handle (store), and dispense the product correctly (and why), that is intuitive and visually communicative.



How to reseal

Offering clear information/instructions on how and why to re-seal the product correctly, that is intuitive and visually communicative.



Why to package

Callouts on the importance of packaging (e.g. supports distribution and maintains quality of product).



Quality design

By using quality printing and materials that avoid barcode damage and packaging branding, imagery, messages, and instructions that may cause consumer rejection.

PRODUCT PACKAGING RELATED INFORMATION AND INSTRUCTIONS



When to consume

Offering clear information/instructions on how to consumer the product at the optimal time or preparation (e.g. ripeness of avocados or bananas).



How to store

Clear messaging on how to store before opening and after opening (e.g. freeze-ability), Communicating best storage practices.

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How to extend shelf life/How to freeze

Instructions on how to freeze or prolong food (e.g. Bread) or leftovers. Improved messaging about increased shelf life through packaging functions (e.g. re-closable, materials and atmosphere combinations.).



Easy to identify

Through enriched identity markers (e.g. QR codes) that enable identification, tracking and presentation of information about origin, production, storage, and distribution history and potential communication with consumers to provide transparency of information.



How to dispense

Clear instructions on the best methods of removing the product from the packaging without waste.



Easy to read ingredients

Offering transparency and detailed information for consumers to make informed choices prior to purchase (e.g. clear ingredients, expected flavour descriptions, and clear callouts on allergens and free-from ingredients).



Clear visual branding

Improve the connection between packaging visuals and described flavours with the actual product sensory experience to inform people to purchase what they would like to eat prior to purchase (e.g. spice and curry flavour ratings for vegetarian sausages).



How to cook

Clear instructions on how to cook the product to avoid under/overcooking and causing the meal to be spoiled.

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Easy to understand

Clear and concise instructions that a visual, readable and accessible.



On-pack recipes

Suggested recipes displayed clearly on the packaging.



How to save food

Designing packaging that informs and promotes produce that is outside retail specifications e.g. ugly fruit, oddly shaped, smaller or discoloured.



Easy to communicate

Simple and effective text and visual language to communicate information to the consumer.



On-pack communication

Improving standard fresh recipe recommendations and offering save-food recipes that use up left over ingredients or prolong the shelf life (e.g. stews, soups, blending, adding sauces, dehydration, preserving and pickling, sun-drying etc.).



How to communicate shelf life

Extension or better information on the packaging that explains the dating system (e.g. best-before, use-by dates etc.), if and when the food item could be unhealthy, and how the consumer could judge the quality of the food item, smart labels are also a possibility.

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PRODUCT-PACKAGING-RELATED "VOLUNTARY" RECOMMENDATIONS



Call-out strategies

Call-out strategies to maintain product freshness for longer, such as - I'll last longer if you don't double dip for butter or I'll last longer if you squeeze a little lemon on me and pop me in the fridge for cut avocado.



Save food recipes

Improving standard fresh recipe recommendations and offering save-food recipes that use up left over ingredients or prolong the shelf life (e.g. stews, soups, blending, adding sauces, dehydration, preserving and pickling, sun-drying etc.).

PRODUCT-PACKAGING-RELATED "VOLUNTARY" RECOMMENDATIONS



How to reuse

Recommendations that inspire second use of leftover, uneaten food waste by composting, regrowing, reusing (homemade cosmetics, hygiene products), animal-feed (for livestock, pets, birds etc.).



How to recycle

Clarify how to recycle packaging, facilitate consumer recycling by designing packaging that is easy to clean, separate and fold, with materials/components compatible for mechanical recycling; refer to the APCO standards or the SPGs.

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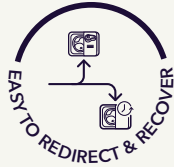
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Easy to redirect and recover

Through enriched identity markers that enable identification, tracking and presentation of information about origin, production, storage, and distribution history and potential communication with consumers to provide transparency of information.



How to use Smart Pack

Callouts on smart packaging features/ technologies to support their acceptance of packaging advancements and purposes. How to use technologies. Intelligent Pack types include: QR codes, RFID, NFC Chips, GPS, Digital Connectors, Image recognition (IR), Time temperature Indicators (TTI). Active pack types include: MAP, Barrier Trays, Skin Packaging, Oxygen Scavengers, Carbon Dioxide Scavengers and emitters, Ethylene absorbers, Antibacterial agents, Antioxidants.

Adapted from:

Wikström et al (2014)

Vergheze et al (2015)

Lindh et al (2016)

Hellstrom et al (2017)

Wohner et al (2019)

Lockrey et al (2019)

Lebersorger and

Schneider (2014)

Brennan et al (2021)

Konstantoglou et al (2021)

Lanagley et al (2020)

FAO (2020)

AIP (2023)

Ameripen (2018)

INCPEN and WRAP (2019)

Chan, R. (2022)

See reports for full

attribution of terms

DESIGN TO COMMUNICATE TO CONSUMERS

& PROMOTE HOW TO HANDLE, STORE, PREPARE & REUSE FOOD PRODUCTS

- HIT THE BULLSEYE
- VALIDATE FIRST
- MAKE IT YOURS
- I SEE NOW

I SEE NOW

AWARD WINNING CASE STUDIES

HAZELDENE'S CHICKEN FARM & SEE

HAZELDENE'S CHICKEN FARM & SEALED AIR

2019 SAVE FOOD PACKAGING DESIGN OF THE YEAR - SPECIAL AWARD GOLD WINNER

2021 WINNER WORLDSTAR SAVE YOUR SPECIAL AWARDS

2022 WINNER WORLDSTAR

Hazeldene's Chicken Farm & Sealed Air
Cryovac® Darfresh on Tray vacuum skin technology

Key Outcomes and Measurement

- Serving size optimized for 2x
- Moved from MAP to vacuum skin
- No product modification
- Tear Tab & Feedable Top Flap
- Freezer Ready
- Portion Control
- Easy to Open
- Design to Protect & Preserve

Save Food Packaging Guidelines

- Contain & protect
- Extend shelf life/preserve
- Household convenience
- Consumer education
- Balance environmental impacts

Product: Cryovac® Darfresh on Tray vacuum skin technology
Company: Hazeldene's Chicken Farm & Sealed Air
Country: Australia

Hazeldene's is based at Lockwood, near Bendigo in Central Victoria. Strong and continuous development over more than 60 years has put Hazeldene's at the forefront of poultry production in Australia. It's obsession with producing the best chicken Australia has to offer sees it continue to strive for excellence in everything that it does.

Sealed Air partners with its customers to solve their most pressing resource challenges by delivering new solutions derived from its unmatched industry knowledge and expertise. These solutions create a more efficient, secure and less wasteful global food supply chain, and enhance e-commerce through fulfillment and packaging solutions to protect the worldwide movement of goods.

AIP PIDA WORLD PACKAGING AWARDS WORLD PACKAGING AWARDS WORLDSTAR AWARDS

FLAVOUR CREATIONS

FLAVOUR CREATIONS

2019 SAVE FOOD PACKAGING DESIGN OF THE YEAR - SPECIAL AWARD SILVER WINNER

2019 ACCESSIBLE PACKAGING DESIGN OF THE YEAR - SPECIAL AWARD SILVER WINNER

Flavour Creations
Pre-thickened Ready-To-Drink (RTD) range

Key Outcomes and Measurement

- Embossed Texture to Improve Grip
- Angled Cup Rim to Minimise Leakage
- Snug Fitting Cap to Ensure Safety
- External Ribbing to Improve Grip
- 100% Compliant for Safety
- Shrink Easy Peel Lid
- Design to Reduce Neck Extension

Save Food Packaging Guidelines

- Design for Accessibility
- Extend shelf life/preserve
- Easy to Open, Hold & Grip
- Consumer education

Product: Pre-thickened Ready-To-Drink (RTD) range
Company: Flavour Creations
Country: Australia

Flavour Creations provides life-enriching nutrition. Founded in Queensland, Australia, by Bernadette Erikson, Flavour Creations has created trusted nutrition solutions for over 20 years. The company is a leading provider of nutrition for individuals living with dysphagia (difficulty swallowing) and is expanding globally as a respected supplier of targeted health and medicinal solutions. Its people and food-first approach is what distinguishes Flavour Creations apart. This is reflected in their innovations including the Dysphagia Cup, SCREAMS No Melt Ice Cream and Shape It Powder. Flavour Creations makes nutrition easy, enjoyable and accessible.

AIP PIDA WORLD PACKAGING AWARDS WORLD PACKAGING AWARDS WORLDSTAR AWARDS

CAPS & CLOSURES

THERMOSHIELD TEMPERATURE MONITORING SYSTEM

2022 SAVE FOOD PACKAGING DESIGN OF THE YEAR GOLD WINNER

2020 WORLDSTAR DESIGN TO LIVE BY SPECIAL AWARD SILVER WINNER

2022 SAVE FOOD PACKAGING DESIGN OF THE YEAR GOLD WINNER

Caps & Closures
ThermoShield Temperature Monitoring System

Key Outcomes and Measurement

- GREEN → Amber → RED: Allows for colour changes - green to amber to red as pack gets warmer
- Optical system: dynamically changes appearance at preselected temperatures
- Colour determines when temperature rises above set parameters
- Visual tracking via cold chain
- Material for minimum food loss & waste
- Thermochromic dye technology
- Changes colour as environment changes

Save Food Packaging Guidelines

- Contain & protect
- Extend shelf life/preserve
- Household convenience
- Consumer education
- Balance environmental impacts

Sustainable Packaging Guidelines

- Design for Product Waste
- Design for Accessibility
- Design for Transport Efficiency

Product: ThermoShield Temperature Monitoring System
Company: Caps & Closures
Country: Australia

Caps and Closures is an Australian owned and operated company that has been designing and manufacturing award-winning innovative plastic packaging solutions for over 25 years. Caps & Closures maintains a global industry and research leaders network to ensure that their in-house design team is in tune with the packaging industry's latest developments.

AIP PIDA WORLD PACKAGING AWARDS WORLD PACKAGING AWARDS WORLDSTAR AWARDS

... AND MORE FORTHCOMING





CLICK THE ICON TO JUMP TO SEE AWARD-WINNING CASE STUDIES

5



**DESIGN TO BALANCE FOOD &
PACKAGING WASTE TARGETS**
FOR OPTIMAL PACKAGING

DESIGN TO BALANCE FOOD & PACKAGING WASTE TARGETS

- FOR OPTIMAL PACKAGING
-  HIT THE BULLSEYE
 -  VALIDATE FIRST
 -  MAKE IT YOURS
 -  I SEE NOW
-  #1 #2 #3 #4 #5

MATERIAL FACTORS AND ASSESSMENTS



ALIGNING BUSINESS PLANS AND NPDS TO CIRCULAR ECONOMY CRITERIA, STANDARDS, LEGISLATION AND GLOBAL TARGETS



CONSUMER PERCEPTIONS ASSESSMENT OF SFP NPDS



■ **CLICK THE ICON** TO JUMP TO SEE AWARD-WINNING CASE STUDIES



DESIGN TO BALANCE FOOD & PACKAGING WASTE TARGETS

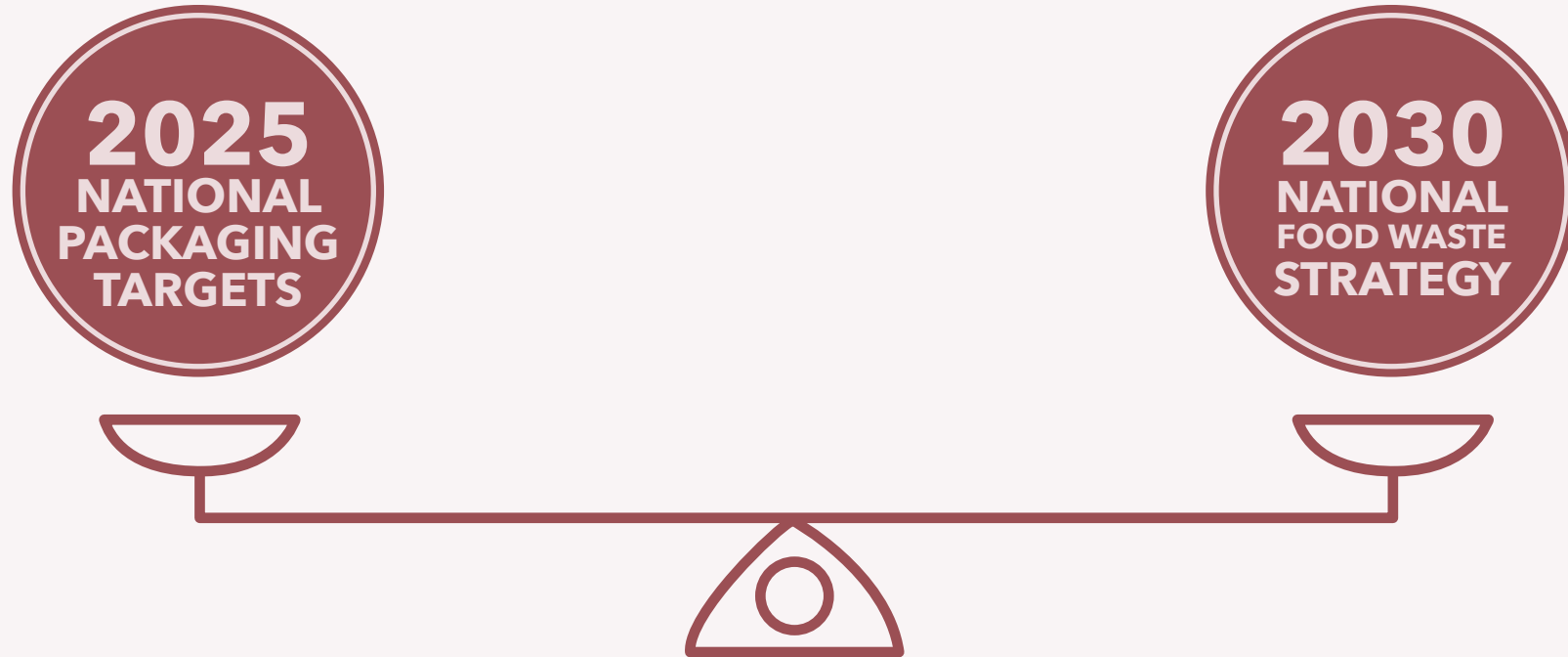
FOR OPTIMAL
PACKAGING

- HIT THE BULLSEYE
- VALIDATE FIRST
- MAKE IT YOURS
- I SEE NOW

#1 #2 #3 #4 #5

VALIDATE FIRST

GETTING THE BALANCE RIGHT





VALIDATE FIRST

BALANCING PACKAGING AND FOOD WASTE TARGETS

AIMS

To highlight to packaging designers that in using the End Food Waste SFP Design Criteria to contain, protect, preserve, extend, increase appeal, assist in handling and usage, they also need to balance the design criteria with the Sustainability Packaging Guidelines (SPGs) selecting a sustainable packaging outcome. To communicate on-pack the added-value of SFP designs and functions to increase consumers awareness of the benefits and services packaging plays in reducing environmental food waste impact.

CONSIDERATIONS

Product, People, Planet, Profit

Meeting food waste reduction goals may require an increase in packaging material (weight, thickness, barrier and complexity) or use of packaging material which tends to be contrary to the design goals of the SPGs of recyclability or compostibility. The business needs to identify how to meet their goals for best serving their Product, People, Planet, and Profit.

+Ve -Ve Environmental Impact Mapping and LCAs

Outline the positive and negative changes to the environmental impacts of the packaging design, as a result of the new design aspects. Also, take into consideration any lifecycle assessment (LCA) findings that have been undertaken.

VALIDATE FIRST

CONSIDERATIONS

Consumer Education and Willingness to Purchase

If an alternative or additional packaging materials has been chosen to improve Food Waste, then communication for the reason for the change in packaging needs to be communicated to the customers to improve likelihood of adoption.

Balancing

- Product and packaging lifecycle outcomes, end of life of packaging program demands, and consumer perceptions is perhaps the greatest challenge.
- Communication of the SFP's added value to retailers and consumers.

Brand Owners and Retailers Driven by Sales

Brand owners and retailers need to make sales and will appeal to prevailing consumer sentiment.

- Time frames, immediate and long term, planning for current packaging recovery infrastructure and balancing future technologies and packaging innovations.
- Circularity versus total environmental impact, to provide users conscious choices.



VALIDATE FIRST

SUSTAINABILITY GOALS AND TOOLS DOMESTICALLY (WITHIN AUSTRALIA AND NEW ZEALAND)

Sustainable Packaging Guidelines

Which of the 10 (SPGs) have been applied in the development and design of the product?

Sustainability goals

Does your company have sustainability goals and does this include the design and use of packaging materials?

Sustainability Guidelines access

Do your product and packaging development teams have access and use the Sustainable Packaging Guidelines (SPGs) as part of their design considerations.

Packaging Recyclability Evaluation Portal

Does your company use the Packaging Recyclability Evaluation Portal (PREP) assessment as the 'Go/No Go' for their product packaging?

LCA

Does your company use LCA (Life Cycle Assessment) tools?

Australasian Recycling Logo

Have you applied for approval to include the Australasian Recycling Logo (ARL) for your packaging to assist your consumers to correctly dispose of each piece of packaging in the correct bin?

Sustainability considerations

Does the senior management review of the product approval consider sustainable factors, and do they ensure the 'End of Use' of their packaging will be reusable, recyclable and if compostable, the packaging is certified to Australian Standard (AS 4736) and the consumer has access to composting facilities?



VALIDATE FIRST

DESIGN TO BALANCE FOOD & PACKAGING WASTE TARGETS

FOR OPTIMAL
PACKAGING

HIT THE BULLSEYE

VALIDATE FIRST

MAKE IT YOURS

I SEE NOW



#1

#2

#3

#4

#5

Outline how the new packaging design aspects have contributed to reducing or preventing food waste. Provide specific information identifying the amount or percentage reduction in food waste associated with the new design relative to a replaced packaging design or a competitor's design. Also, Include any LCA findings.

THE PACKAGING SHOULD FACILITATE THE SORTING OF HOUSEHOLD WASTE - EASY TO CLEAN, SEPARATE, AND FOLD

2025 National Packaging Targets

Does your dispensing solution (pump, spray nozzle, etc.) meet the 2025 National Packaging Targets for reuse or recycle?

Product residue

Will your product leave any residue or food particles on the packaging? Will this residue be easily removed, and can the packaging be easily cleaned and dried?

Removable packaging components

Are there multiple components to the packaging (lid, tub, labels, etc.)? Can they be easily separated?

Layering

If the packaging is multilayered, are the layer different materials, and can they be separated?

Packaging larger than 200ML

Is your packaging (other than paper or board) larger than 200mm in two dimensions? If so, the packaging will need to easily fold to reduce the dimension below 200mm to ensure it will be correctly processed through the Material Recovery Facility (MRF). Information and instructions will need to be provided on the packaging to assist the consumer in the effective recycling of the packaging.



DESIGN TO BALANCE FOOD & PACKAGING WASTE TARGETS

FOR OPTIMAL PACKAGING

- HIT THE BULLSEYE
- VALIDATE FIRST
- MAKE IT YOURS
- I SEE NOW

#1 #2 #3 #4 #5

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- Vergheze et al (2015)
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- Hellstrom et al (2017)
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- Lockrey et al (2019)
- Lebersorger and Schneider (2014)
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- Lanagley et al (2020)
- FAO (2020)
- AIP (2023)
- Ameripen (2018)
- INCPEN and WRAP (2019)
- Chan, R. (2022)

See reports for full attribution of terms

MAKE IT YOURS

Adopt these **5x Key** Save Food Packaging Design Criteria Icons that serve to contain and protect the product through the supply chain and into households (founded on leading research and industry expertise).

MATERIAL FACTORS AND ASSESSMENTS



Sustainable packaging

Ensuring sustainable packaging Designed to gain greatest buy-in from consumers to join the fight in food waste. Life Cycle Assessments (LCA) incorporating data measurements of food types sold and wasted. Use SPGs and phasing out single use plastics will gain greater trust with consumers.

ALIGNING BUSINESS PLANS AND NPDS TO CIRCULAR ECONOMY CRITERIA, STANDARDS, LEGISLATION AND GLOBAL TARGETS



Sustainable packaging targets

Adopt, familiarise, and promote Sustainable Targets and Practices in all NPDS.



DESIGN TO
BALANCE
FOOD &
PACKAGING
WASTE TARGETS

FOR OPTIMAL
PACKAGING

 HIT THE BULLSEYE

 VALIDATE FIRST

 MAKE IT YOURS

 I SEE NOW

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- See reports for full attribution of terms

CONSUMER PERCEPTIONS ASSESSMENT OF SFP NPDS



Test consumer sensory experience

Testing consumers Sensory enjoyment and experience when appraising new SFP developments and the products contained (touch, see, smell etc.).



Test food vs packaging waste

Testing consumers acceptance of the balance/tradeoff decisions made between Sustainable packaging and Food waste reduction strategies.



Test save food waste design

Testing consumers acceptance of the proposed SFP Innovations prior to commercialisation. Consumer knowledge and levels of awareness, interest, and appreciation of these functions of packaging are major factors in their refusal or acceptance of emerging packaging technologies (Brennan et al (2021)).

I SEE NOW

AWARD WINNING CASE STUDIES

HEALTHSHARE NSW

MY FOOD CHOICE & HEALTHSHARE NSW

2016 SAVE FOOD PACKAGING DESIGN OF THE YEAR - FOOD SERVICES HIGH COMMENDATION

2017 WINNER WORLDSTAR AWARDS

My Food Choice & HealthShare NSW
My Food Choice

Key Outcomes and Measurement

- 56% reduction in waste
- Fit packaging made repair for hospitals
- PET recyclable packaging
- Clear on-pack communication
- 12 month shelf life
- Portable & reusable
- Consumer Convenience
- Portion control
- Frozen ready

Save Food Packaging Guidelines

- Extend shelf life/premise
- Easy to Open & Grip
- Accessible Design
- Balance environmental impacts

Product: My Food Choice
Company: HealthShare NSW
Country: Australia

HealthShare NSW supports NSW health to deliver clinical care and help drive system-wide improvements. As the largest government shared services organisation in Australia, HealthShare NSW is a statewide body of more than 1,500 employees who support the delivery of patient care in NSW Health. They play an increasing role in caring directly for public hospital patients, providing them with clinically appropriate transport, nutritious hospital meals, and a clean and comfortable hospital experience.

Awarded by: AIP, PIDA, WFP, WPA, WPC, WPD, WPE, WPF, WPG, WPH, WPI, WPK, WPL, WPM, WPN, WPO, WPP, WPT, WPU, WPV, WPW, WPIA, WPIB, WPIC, WPID, WPIE, WPIF, WPIG, WPIH, WPII, WPIK, WPI L, WPI M, WPIN, WPIO, WPIP, WPIQ, WPIR, WPI S, WPI T, WPI U, WPI V, WPI W, WPI X, WPI Y, WPI Z

SIMONS PANTRY WRAPS

TRUE FOODS & RESULT GROUP

2021 SAVE FOOD PACKAGING DESIGN OF THE YEAR CERTIFICATE OF MERIT - RETAIL

True Foods & Result Group
Simson's Pantry Wraps

Key Outcomes and Measurement

- Return to Store Recyclable with ARI
- Easy-operable features with clear dorsal arrows for pull visibility
- Reusable feature extends shelf life
- Tape strip presses back down for reuse
- Strong evidence available
- Maintains freshness & quality
- Less product waste & spoilage
- Finger Lift Pull Tab allowing for easier grip

Save Food Packaging Guidelines

- Contain & protect
- Extend shelf life/premise
- Household convenience
- Consumer education
- Balance environmental impacts

Product: Simson's Pantry Wraps
Company: True Foods & Result Group
Country: Australia

True Foods is proudly an 100% Australian owned and operated family business that was established in 2001 as a specialist manufacturer of flat bread products. From humble beginnings, they have grown to become the largest Australian owned manufacturer of flat bread products, Naan and Roti breads. Supporting this is a supply chain that distributes significant volumes of shelf stable, ambient and frozen products nation wide to all major customers including Coles, Woolworths, Aldi, Bunnings, WFC, Subway, PFD and Bidfood.

Result Group is a supplier of innovative equipment & materials that help businesses achieve better efficiency in their manufacturing and distribution processes.

Awarded by: AIP, PIDA, WFP, WPA, WPC, WPD, WPE, WPF, WPG, WPH, WPI, WPK, WPL, WPM, WPN, WPO, WPP, WPT, WPU, WPV, WPW, WPIA, WPIB, WPIC, WPID, WPIE, WPIF, WPIG, WPIH, WPII, WPIK, WPI L, WPI M, WPIN, WPIO, WPIP, WPIQ, WPIR, WPI S, WPI T, WPI U, WPI V, WPI W, WPI X, WPI Y, WPI Z

... AND MORE FORTHCOMING

CLICK THE ICON TO JUMP TO SEE AWARD-WINNING CASE STUDIES

S

APPLICATION SUMMARY
ACROSS THE SUPPLY CHAIN

DESIGN TO CONTAIN & PROTECT THE PRODUCT

FROM SPOILAGE & DAMAGE THROUGH MANUFACTURING, WAREHOUSING & VARIOUS STAGES OF DISTRIBUTION

 HIT THE BULLSEYE

 VALIDATE FIRST

 MAKE IT YOURS

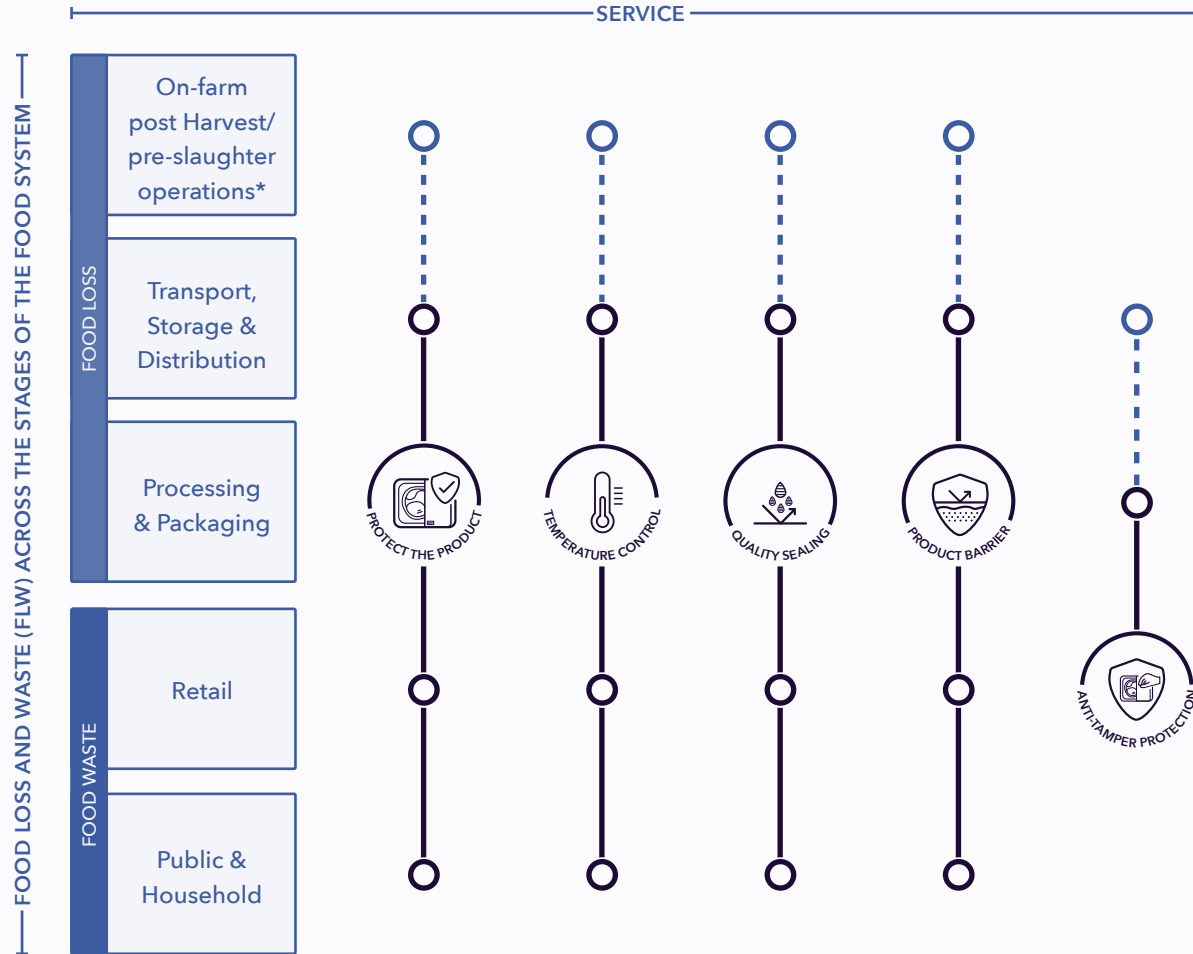
 I SEE NOW

 #1 #2 #3 #4 #5



VALIDATE FIRST

HOW DOES YOUR PACKAGING DESIGN SERVE:
The People? The Planet? The Product? The Profit?



KEY

○—○ Direct service (required to maintain quality assurance)

○- - -○ Indirect service (optional, if applicable)

* EXTREME EVENTS AND HARVEST LOSSES CAN ALSO CONTRIBUTE TO FOOD WASTE

DESIGN TO PRESERVE & EXTEND SHELF LIFE

& ENHANCE PRODUCT APPEAL

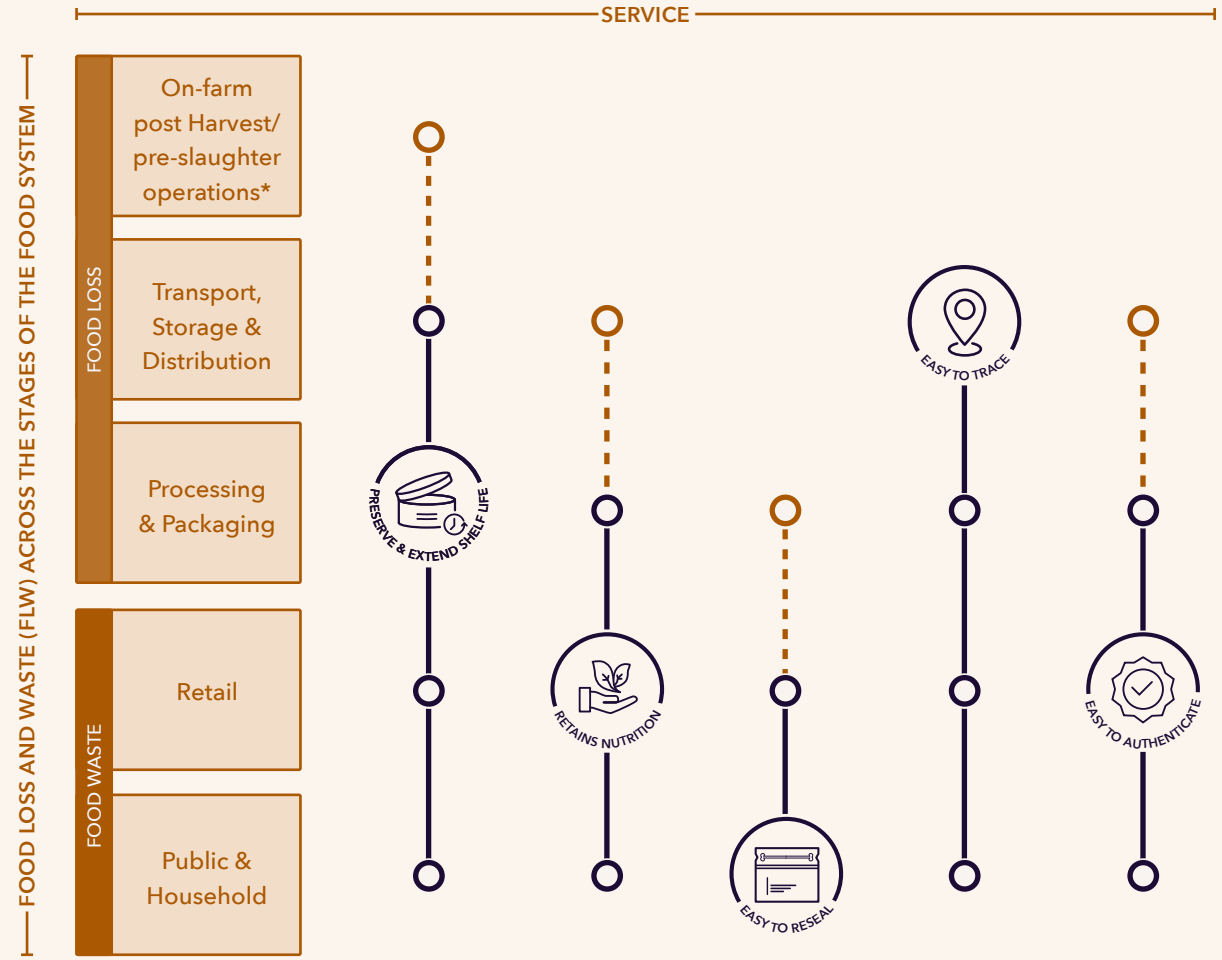
- HIT THE BULLSEYE
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- I SEE NOW

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Adapted from Spang et al 2019, FAO 2019, Porat et al 2018, Langley et al 2020

VALIDATE FIRST

HOW DOES YOUR PACKAGING DESIGN SERVE: The People? The Planet? The Product? The Profit?



- KEY
- Direct service (required to maintain quality assurance)
 -○ Indirect service (optional, if applicable)

* EXTREME EVENTS AND HARVEST LOSSES CAN ALSO CONTRIBUTE TO FOOD WASTE

DESIGN TO PROVIDE CONSUMER CONVENIENCE

& TO NOT WASTE FOOD DURING HANDLING IN THE HOUSEHOLD

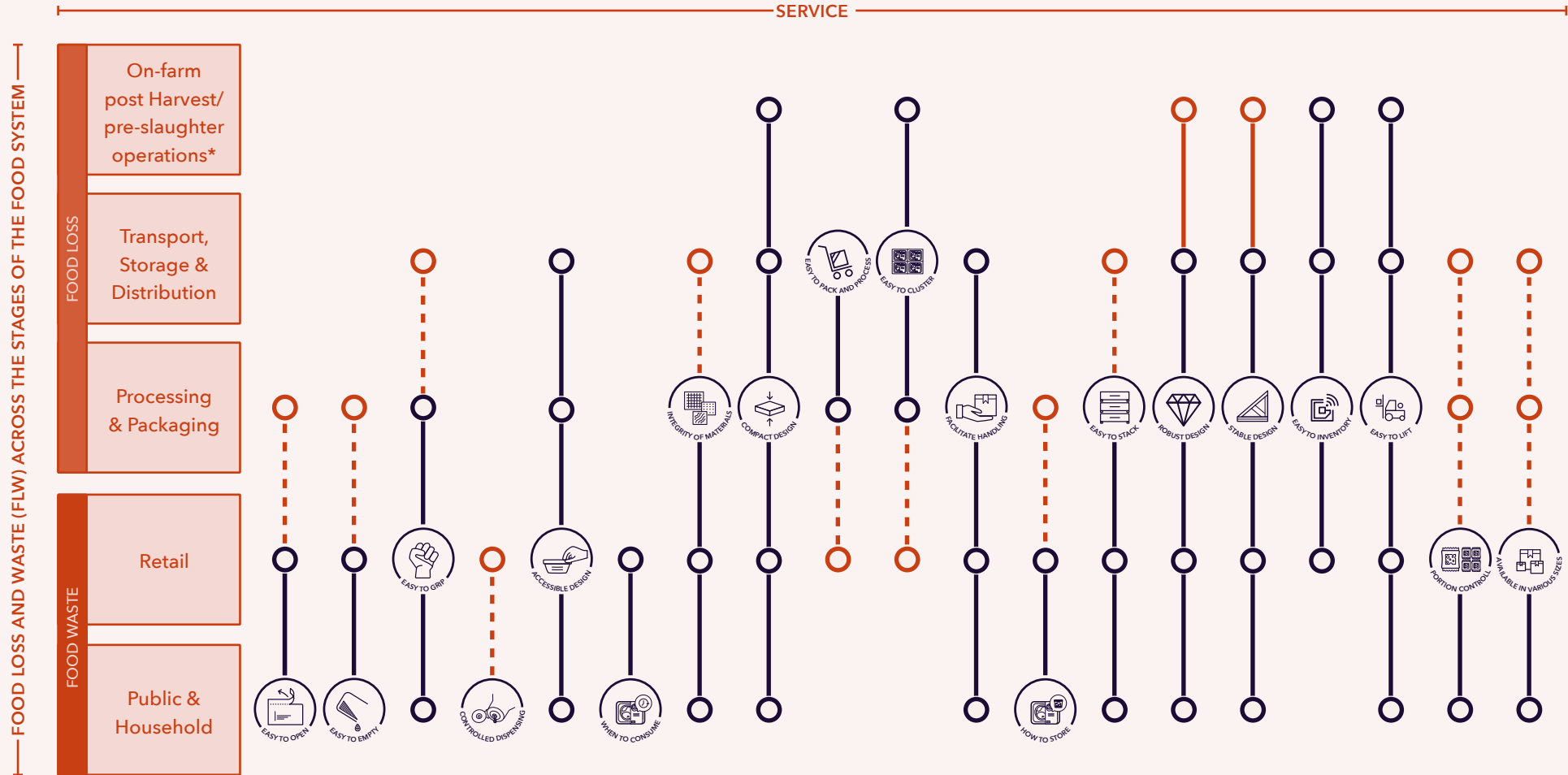
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- I SEE NOW

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VALIDATE FIRST

HOW DOES YOUR PACKAGING DESIGN SERVE: The People? The Planet? The Product? The Profit?



- KEY**
- Direct service (required to maintain quality assurance)
 - Indirect service (optional, if applicable)

* EXTREME EVENTS AND HARVEST LOSSES CAN ALSO CONTRIBUTE TO FOOD WASTE

DESIGN TO COMMUNICATE TO CONSUMERS

& PROMOTE HOW TO HANDLE, STORE, PREPARE & REUSE FOOD PRODUCTS

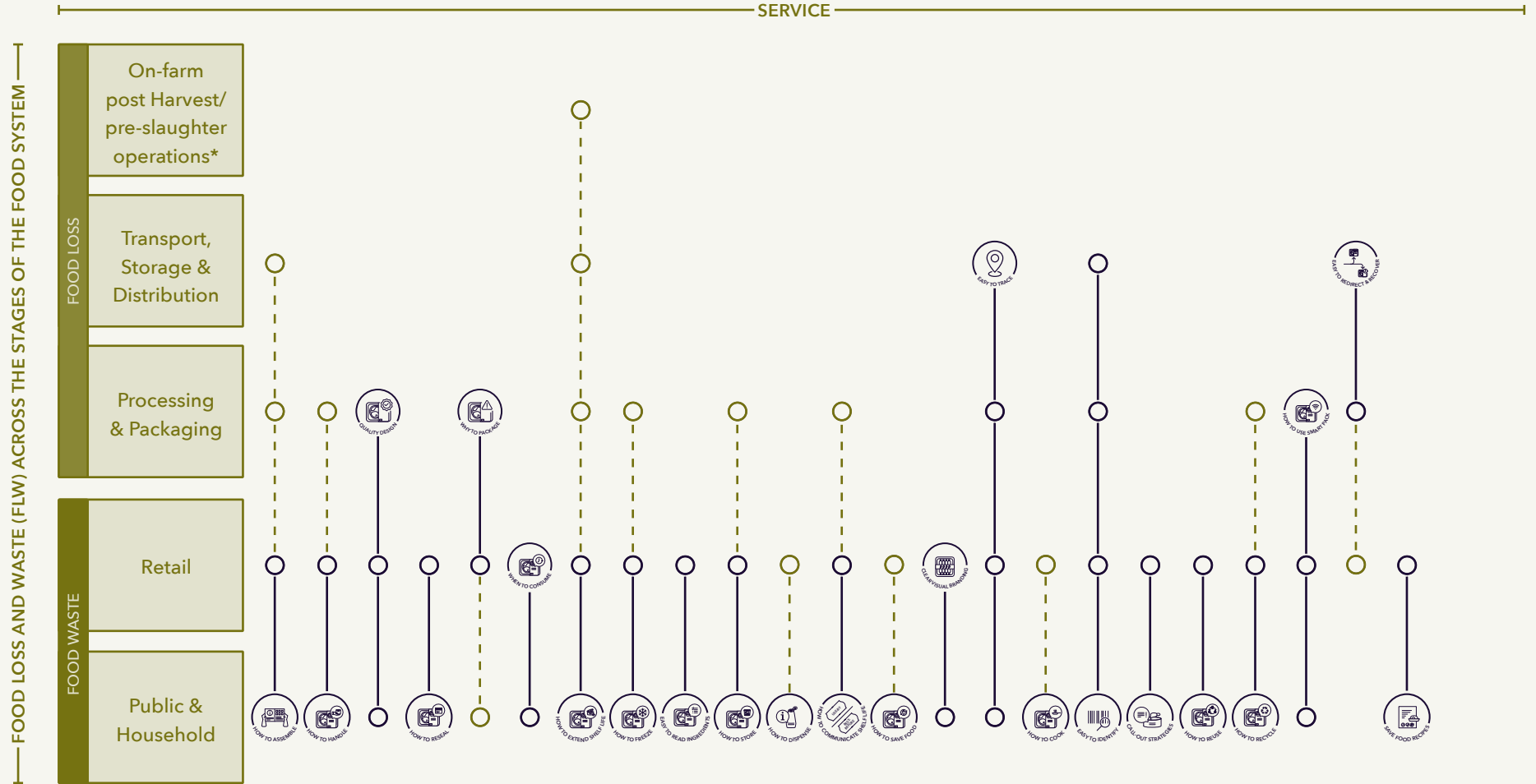
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VALIDATE FIRST

HOW DOES YOUR PACKAGING DESIGN SERVE: The People? The Planet? The Product? The Profit?







- KEY**
- Direct service (required to maintain quality assurance)
 -○ Indirect service (optional, if applicable)

* EXTREME EVENTS AND HARVEST LOSSES CAN ALSO CONTRIBUTE TO FOOD WASTE

DESIGN TO BALANCE FOOD & PACKAGING WASTE TARGETS

FOR OPTIMAL PACKAGING

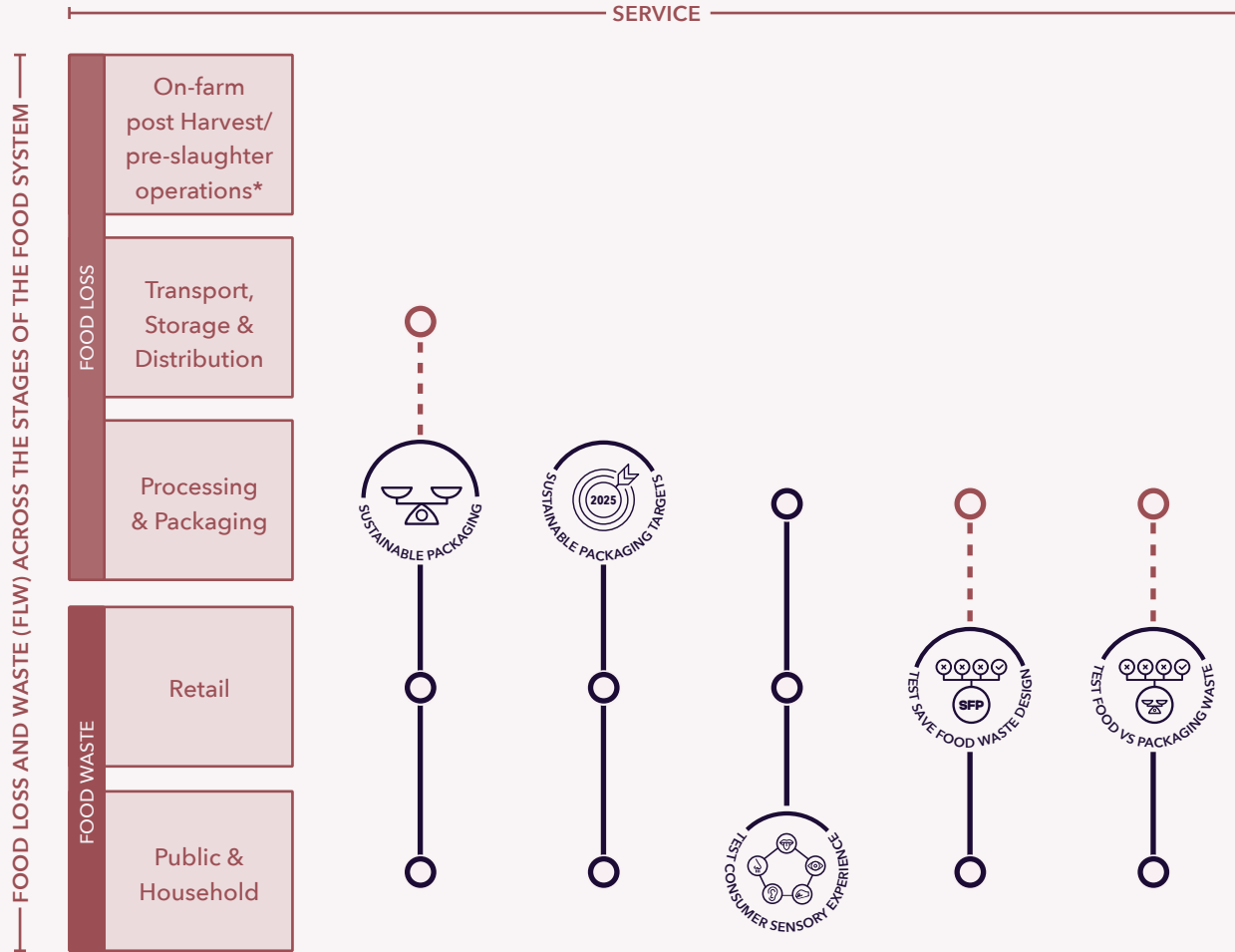
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-  I SEE NOW

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VALIDATE FIRST

HOW DOES YOUR PACKAGING DESIGN SERVE: The People? The Planet? The Product? The Profit?



- KEY**
- Direct service (required to maintain quality assurance)
 - Indirect service (optional, if applicable)

* EXTREME EVENTS AND HARVEST LOSSES CAN ALSO CONTRIBUTE TO FOOD WASTE

C
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CASE STUDIES

CAPS & CLOSURES

2022
SAVE FOOD
PACKAGING
DESIGN OF
THE YEAR

CASE STUDIES

ICONS

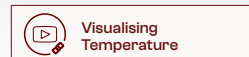
#1 #2 #3 #4 #5

PRODUCT

ThermoShield
Temperature
Monitoring System
- food



- Alerts change to temperate sensitive products
- Safeguards cold chain products
- Damaged stock can be identified and removed
- Optical system to change colour appearance
- Improved traceability for temperature excursions
- Visual record of overheating



COORDINATED BY



INTERNATIONALLY ENDORSED BY



EXCLUSIVE ENTRY TO



WORLDSTAR WINNER 2023



WORLDSTAR SAVE FOOD PACKAGING WINNER 2023

2022 SAVE FOOD PACKAGING DESIGN OF THE YEAR

OUTSIDE OF THE BOX

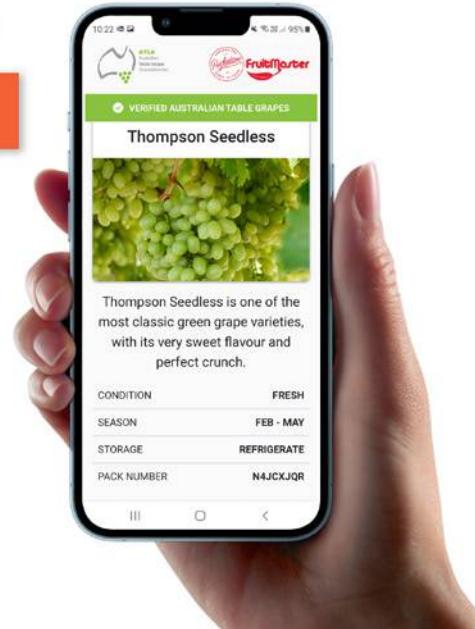
CASE STUDIES

ICONS

#1 #2 #3 #4 #5

PRODUCT

Australian Table Grape Association (ATGA) Table Grapes Project



- Active Digital Identity™ (ADI) in QR code ensures traceability
- Scannable by smartphone
- Real-time temperature sensors in cartons and shipping containers
- International traceability GS1
- Country of origin tracking
- Unique serialised GS1 Digital Link-enabled QR code labels



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WORLDSTAR WINNER 2023



GS 1 AUSTRALIA & WOOLWORTHS

2022 SAVE FOOD PACKAGING DESIGN OF THE YEAR

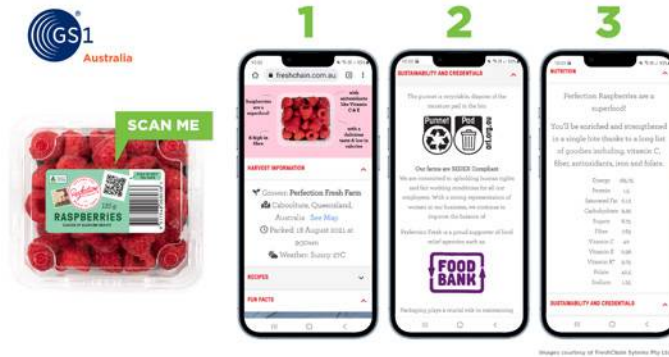
CASE STUDIES

ICONS

#1 #2 #3 #4 #5

PRODUCT

2DBarcodes by GS1



- Improves traceability and stock management
- 2DBarcodes provide access to data
- Targeted/Accurate product recalls
- Reduce food waste by 40%
- Across 50% of Woolworths meats
- 44% improvement in out-of-code dumps and stock adjustments
- 21% improvement in productivity



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ENDORSED BY



EXCLUSIVE
ENTRY TO



INGHAMS WAITOA & SEE

2022
SAVE FOOD
PACKAGING
DESIGN OF
THE YEAR

CASE STUDIES

ICONS

#1 #2 #3 #4 #5

PRODUCT

Inghams Waitoa
Free Range
Butterflied Chicken



- Extends shelf life by 40% to 14 days
- Scannable QR code
- Packaging 80% recycled materials
- Vacuum hermetic seals keep poultry fresh
- Mitigates human contamination
- Recyclable through soft plastics programs in ANZ
- Clear legible Best-Before Date



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EXCLUSIVE ENTRY TO



WORLDSTAR WINNER 2023



EDGELL SUPA CRUNCH (SIMPLOT AUSTRALIA)

2021
SAVE FOOD
PACKAGING
DESIGN OF
THE YEAR

FOOD SERVICE
CATEGORY

CASE STUDIES

ICONS

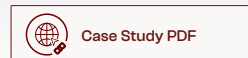
#1 #2 #3 #4 #5

PRODUCT

Edgell Supa Crunch



- Maintains crunch during delivery
- Reduce the risk of spoilage and soggy chips
- Tamper evidence
- Raise & ventilated floor
- Allows steam condensate to escape, retaining heat
- Utilises stack effect where air is drawn into the carton at the base and then vents at the top



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EXCLUSIVE
ENTRY TO



WORLDSTAR
WINNER 2022



JUNEE LAMB

2021
SAVE FOOD
PACKAGING
DESIGN OF
THE YEAR

AGRICULTURE
CATEGORY

CASE STUDIES

ICONS

#1 #2 #3 #4 #5

PRODUCT

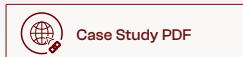
Junee Lamb and SEE
for CRYOVAC brand
Total Bone Guard
for Agriculture



- Meat contributes 20% of all carbon footprint in landfill
- No more leaking packs
- Recyclable through sot plastics programs
- Tear puncture, tear and abrasion resistant design
- Built-in bone guard protection in areas that need it the most



2021 PIDA Winner
Announcement



Case Study PDF



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WORLDSTAR
WINNER 2022



2022
WORLDSTAR
SAVE FOOD
SPECIAL AWARD
WINNER



GEORGE WESTON FOODS

2021
SAVE FOOD
PACKAGING
DESIGN OF
THE YEAR

RETAIL CATEGORY

CASE STUDIES

ICONS

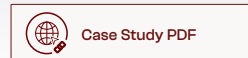
#1 #2 #3 #4 #5

PRODUCT

Don KRC



- Stand up pouch with hang tag
- No need for scissors
- Easy to fill on production
- Increases pack choices
- Return to Store recyclable
- Easy Grip and tear function
- Reduces Product Waste
- Australasian Recycling Label on-pack



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ENTRY TO



SIMSON'S PANTRY WRAPS

2021 SAVE
FOOD
PACKAGING
DESIGN OF
THE YEAR

RETAIL CATEGORY

CASE STUDIES

ICONS

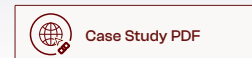
#1 #2 #3 #4 #5

PRODUCT

For True Foods
and Result Group



- Finger Lift Pull Tab for easier grip
- FreshPak® pressure sensitive tape with a non-adhesive linear edge
- Tamper evidence and resealable
- Easy-open features with directional arrows for pull visibility
- Designed to reduce product waste
- Maintains freshness and quality
- Recyclable and recoverable



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SOUTHERN FRESH FOODS

2021
SAVE FOOD
PACKAGING
DESIGN OF
THE YEAR

RETAIL
CATEGORY

CASE STUDIES

ICONS

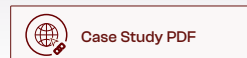
#1 #2 #3 #4 #5

PRODUCT

Gourmet Designer
Vegetables



- Borne from COVID-19 lockdowns
- Created new product from restaurant waste
- Collectable recipe card to inspire consumers and reduce meal fatigue
- FSC Certified Board + non-toxic inks
- Suited for in-home cooking
- Reduces Product Waste
- Recyclable through soft plastics programs



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ENTRY TO



BANNISTER DOWNS DAIRY

2020
ACCESSIBLE
PACKAGING
DESIGN OF
THE YEAR

CASE STUDIES

ICONS

#1 #2 #3 #4 #5

PRODUCT

Bannister Downs Dairy WA chilled pasteurised range



- No need for any tools
- 50-60% lighter weight than other liquid packaging
- No pain or discomfort in handling
- Recyclable through sot plastics programs make ARL on base its own point and call it Australasian Recycling Label
- Snap closure feature

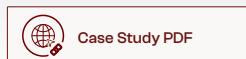
PRODUCT

Cryovac Darfresh
on Tray vacuum
skin technology

HAZELDENE'S CHICKEN FARM & SEE



- Increase of shelf life by 25%
- Tear tab and peelable top film
- Designed to protect and preserve
- No product dehydration
- Moved from MAP to vacuum skin
- Serving size optimised for 2x
- Designed for consumer convenience
- Freezer ready
- Small portion control



2019 ACCESSIBLE PACKAGING DESIGN OF THE YEAR

SPECIAL AWARD

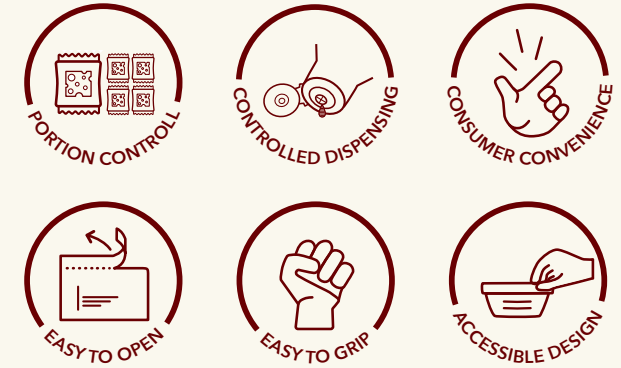
CASE STUDIES

ICONS

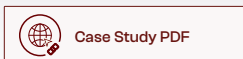
#1 #2 #3 #4 #5

PRODUCT

Pre-thickened Ready-To-Drink (RTD) range packaged in the new Dysphagia Cup and Cup Holder which is designed to specifically increase rates of hydration and decrease rates of malnutrition for residents/patients with Dysphagia



- Large texture overhanging tab
- Cup shape and ribbing assist with opening
- Reusable cup holder
- Clear legible font
- Unique shape cup holder
- Designed to increase rates of hydration and to decrease rates of malnutrition



Case Study PDF



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WINNER 2020



MOANA NEW ZEALAND & SEE

2019 ACCESSIBLE PACKAGING DESIGN OF THE YEAR

SPECIAL AWARD

CASE STUDIES

ICONS

#1 #2 #3 #4 #5

PRODUCT

Cryovac® Grip and Tear® (including 'small tab') was designed to foster ease-of-use for packaged meat, poultry, seafood products for processors, food service and retail markets



- Simple and intuitive
- Single opening action
- Clear Grip & Tear opening instructions
- No more opening tools required
- Ease of use for meat, poultry and seafood
- Improved food service and retail market handling

PLANET PROTECTOR PACKAGING

2017
SAVE FOOD
PACKAGING
DESIGN
AWARD

CASE STUDIES

ICONS

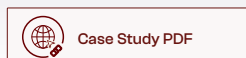
#1 #2 #3 #4 #5

PRODUCT

Woolpack



- Thermal insulation is waste wool
- Compostable
- Natural cooling system properties
- Absorbs moisture
- Eliminates problematic EPS
- Creates stable temperatures
- Minimises humidity
- Repurposes unusable wool
- Renewable resource



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WINNER 2018



2018
WORLDSTAR
SAVE FOOD
SPECIAL AWARD
WINNER



FRESH TECHNOLOGIES LTD & SEE

2017
SAVE FOOD
PACKAGING
DESIGN AWARD

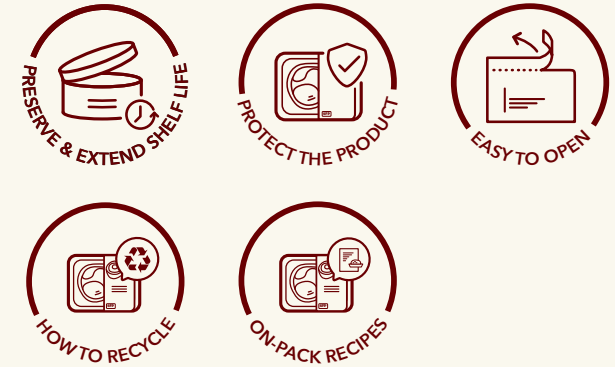
CASE STUDIES

ICONS

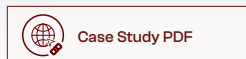
#1 #2 #3 #4 #5

PRODUCT

Cryovac Freshness
Plus Active Barrier



- Farm to plate
- Avocados saved from landfill
- Up to 90 Day shelf life
- Reduces product spoilage
- Extends freshness and flavour
- Valorised product
- On-pack communication
- Designed to preserve
- Designed to protect



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WINNER 2018



2018
WORLDSTAR
SAVE FOOD
SPECIAL AWARD
WINNER



2016 SAVE FOOD PACKAGING AWARD

RETAIL

CASE STUDIES

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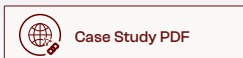
#1 #2 #3 #4 #5

PRODUCT

Cryovac® Darfresh®
Vacuum Skin
Packaging



- Enhanced Food Safety
- Low carbon footprint
- Replaced MAP with Skin Packaging
- Designed to protect
- Designed to preserve
- Freezer ready
- Extended shelf life
- Design for consumer convenience



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WORLDSTAR
WINNER 2017



SPC ARDMONA

2016 SAVE FOOD PACKAGING AWARD

FOOD SERVICES

CASE STUDIES

ICONS

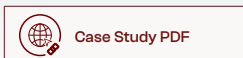
#1 #2 #3 #4 #5

PRODUCT

SPC Provital®
Easy-Open Portion
Control Fruit Cup



- Clear on-pack communication
- Easy of opening
- Intuitive for reduced motor skills
- Portion control
- Easy to handle
- +8 Accessibility rating
- Peelable
- Easy to grip



Case Study PDF



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EXCLUSIVE
ENTRY TO



WORLDSTAR
WINNER 2017



BOTANICAL FOOD COMPANY

2016 SAVE
FOOD
PACKAGING
AWARD
RETAIL

CASE STUDIES

ICONS

#1 #2 #3 #4 #5

PRODUCT

Botanical
food Company



- Designed to promote
- Four week portion control
- Resealable pinch pouches
- Designed for minimal waste
- Reusable clickable & stackable pots
- Designed to protect
- Clear on-pack communication

2016 SAVE FOOD PACKAGING AWARD

FOOD SERVICES

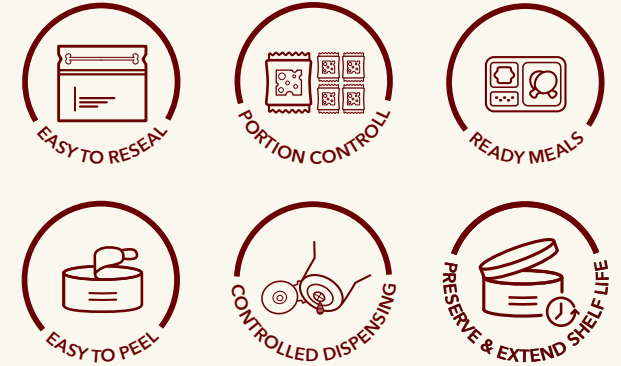
CASE STUDIES

ICONS

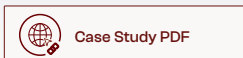
#1 #2 #3 #4 #5

PRODUCT

My Food Choice



- Pre-packaged ready meal for hospitals
- 56% reduction in waste
- CPET recyclable packaging
- Clear on-pack communication
- Designed to open
- 12 month shelf life
- Consumer convenience
- Designed to preserve



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EXCLUSIVE ENTRY TO



WORLDSTAR WINNER 2017





INDEX

ICON REFERENCE

SAVE FOOD PACKAGING DESIGN CRITERIA RESOURCE BOOKLET



1 DESIGN TO CONTAIN & PROTECT THE PRODUCT



2 DESIGN TO PRESERVE & EXTEND SHELF LIFE



3 DESIGN TO PROVIDE CONSUMER CONVENIENCE



4 DESIGN TO COMMUNICATE TO CONSUMERS



5 DESIGN TO BALANCE FOOD & PACKAGING WASTE TARGETS





ANTI-TAMPER PROTECTION

Anti - theft, pilferage, tampering, vandalism, and counterfeiting that informs consumers that the authenticity and integrity has been kept.

CASE STUDIES

[June Lamb](#)



CALL-OUT STRATEGIES

Call-out strategies to maintain product freshness for longer, such as - I'll last longer if you don't double dip for butter or I'll last longer if you squeeze a little lemon on me and pop me in the fridge for cut avocado.

CASE STUDIES

[Caps & Closures](#)



ACCESSIBLE DESIGN

Packaging is openable, readable and can be used by everyone - however they encounter it.

CASE STUDIES

[Fresh Technologies Ltd & SEE](#)
[Hazeldene Chicken Farm & SEE](#)



CLEAR VISUAL BRANDING

Improve the connection between packaging visuals and described flavours with the actual product sensory experience to inform people to purchase what they would like to eat prior to purchase (e.g. spice and curry flavour ratings for vegetarian sausages).

CASE STUDIES

[Botanical Food Company](#)



AVAILABLE IN VARIOUS SIZES

Available in various sizes, e.g. smaller packaging portions. Reduce excess buying by providing appropriate sizing.

CASE STUDIES

[Caps & Closures](#)



COMPACT DESIGN

Designing modular packaging shapes that maximise the volume area (fill rate) allocated for transport and storage, moving greater volumes per truck of fresh products.

CASE STUDIES

[Botanical Food Company](#)



CONSUMER CONVENIENCE

Easy to empty, packaging design that allows consumers to access the whole product contents without force. Design that avoids product remnants, maximises entire product emptying, enables full product reach or squeeze out, also supports easy of recycling as the product requires to be fully cleaned out of the packaging.

CASE STUDIES

[Flavour Creations](#)



EASY TO CLUSTER

Designing packaging that is easily grouped, clustered, or secured together to aid in handling in transport and minimises unintended product-packaging damage.

CASE STUDIES

[Botanical Food Company](#)



CONTROLLED DISPENSING

Easy to dose design enabling measured doses (spout mechanism), slow dosing speed, (surface treatment inside packaging).

CASE STUDIES

[Bannister Downs Dairy](#) [Healthshare NSW](#)
[Botanical Food Company](#)



EASY TO COMMUNICATE

Simple and effective text and visual language to communicate information to the consumer.

CASE STUDIES

[Australian Table Grape Association \(ATGA\)](#)



EASY TO AUTHENTICATE

Proof of authenticity provides consumers transparency and assurance of the quality and ethical sourcing of products. This information impacts consumers willingness-to-purchase new food innovations and reduces the likelihood of product fails and unnecessary food waste prior to purchase.

CASE STUDIES

[Australian Table Grape Association \(ATGA\)](#)

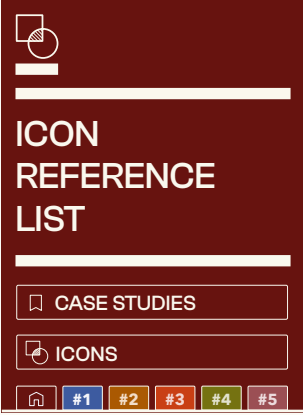


EASY TO COMMUNICATE SHELF LIFE

Extension or better information on the packaging that explains the dating system (e.g. best-before, use-by dates etc.), if and when the food item could be unhealthy, and how the consumer could judge the quality of the food item, smart labels are also a possibility.

CASE STUDIES

[Caps & Closures](#)



ICON REFERENCE LIST

CASE STUDIES

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EASY TO EMPTY
 Easy to empty packaging design (i.e. bottle tube) that allows consumers to access the whole product contents without force. Design that avoids product residue, maximises entire product emptying, enables full product reach or squeeze out, also supports easy of recycling as the product requires to be fully cleaned out of the packaging.

CASE STUDIES
[Bannister Downs Dairy](#)



EASY TO FREEZE
 Packaging designed for clear and straight-forward freezing options; airtight; stackable.

CASE STUDIES
[Hazeldene's Chicken Farm & SEE](#)
[Don KRC](#)



EASY TO GRIP
 Easy to grip design that reduces the risk of dropping e.g. textured laminates, board creasing or external surface ribbing.

CASE STUDIES
[Bannister Downs Dairy](#) [Moana New Zealand](#)
[Flavour Creations](#) [& SEE](#)
[SPC Ardmona](#)



EASY TO IDENTIFY
 Through enriched identity markers (e.g. QR codes) that enable identification, tracking and presentation of information about origin, production, storage, and distribution history and potential communication with consumers to provide transparency of information.

CASE STUDIES
[Caps & Closures](#)



EASY TO INVENTORY
 Designing packaging that clearly presents, or easily makes available (e.g. SSCC / 2D CODES), product information, identifying it for efficient inventory management (e.g. avoid over-ordering or poor stock rotation).

CASE STUDIES
[Hazeldene's Chicken Farm & SEE](#)



EASY TO LIFT
 Offering the ideal weight for lifting and loading for transporting and consumer access in store. Unified portions weights in each pack to reduce the likelihood of consumers feeling missed out if one pack is less than another.

CASE STUDIES
[Planet Protector Packaging](#)



EASY TO OPEN

Easy to open design that avoids spillage, maximises entire product usage.

CASE STUDIES

[Hazeldene's Chicken & SEE](#)

[Fresh Technologies Ltd & SEE](#)

[Southern Fresh Foods Bannister Downs Dairy Flavour Creations](#)

[Moana New Zealand & SEE](#)

[George Weston Foods SPC Ardmona](#)

[Result Group SEE NZ](#)



EASY TO PACK AND PROCESS

Packaging design fit for supply chain purpose and maximises efficiencies, noting the areas where food loss occurs and where packaging can mitigate these known risks.

CASE STUDIES

[Planet Protector Packaging](#)



EASY TO PEEL

Designed so that all abilities can easily access the packaging function that assists with peeling the lid of a can, such as enough grip and tabs for easy access.

CASE STUDIES

[Moana New Zealand & SEE](#)

[Simson's Pantry Wraps SPC Ardmona](#)

[Hazeldene's Chicken & SEE](#)

[Healthshare NSW](#)



EASY TO READ INGREDIENTS

Offering transparency and detailed information for consumers to make informed choices prior to purchase (e.g. clear ingredients, expected flavour descriptions, and clear callouts on allergens and free-from ingredients).

CASE STUDIES

[Healthshare NSW](#)



EASY TO REDIRECT AND RECOVER

Through enriched identity markers that enable identification, tracking and presentation of information about origin, production, storage, and distribution history and potential communication with consumers to provide transparency of information.

CASE STUDIES

[GS 1 Australia & Woolworths](#)



EASY TO RECYCLE

Easy to know how to recycle and easy to pull apart and pack down suitable for different recycling systems.

CASE STUDIES

[Botanical Food Company](#)



EASY TO RESEAL

Easy to reseal properly resealing after opening to maintain product quality and reduce spillage.

CASE STUDIES

[George Weston Foods](#)
[Simson's Pantry Foods](#)

[Botanical Food Company](#)
[Healthshare NSW](#)



EASY TO STORE

Designing packaging capable of maintaining product integrity within the varied warehousing conditions, including the movement into, storing, and out of the locations with efficiency.

CASE STUDIES

[June Lamb](#)
[Planet Protector Packaging](#)
[Southern Fresh Foods](#)

[Bannister Downs Dairy](#)
[George Weston Foods](#)
[SEE NZ](#)



EASY TO REUSE

If applicable, consider the option of packaging that can be repurposed or reused in a way that offers product or packaging life extension.

CASE STUDIES

[Australian Table Grape Association \(ATGA\)](#)
[GS 1 Australia & Woolworths](#) [Caps & Closures](#)



EASY TO TRACE

Accessible information for ease of recalls, education and alerts, (batch number, origin, destination).

CASE STUDIES

[SPC Ardmona](#)
[Flavour Creations](#)

[Hazeldene's Chicken Farm & SEE](#)



EASY TO STACK

Easy to Stack designing packaging with appropriate structure, materials and pack fill to protect the delivery, withstanding the full stacked weight over the transport and storage periods.

CASE STUDIES

[Edgell Supa Crunch](#)
[\(Simplot Australia\)](#)



EASY TO UNDERSTAND

Clear and concise instructions that a visual, readable and accessible.

CASE STUDIES

[Flavour Creations](#)

[Botanical Food Company](#)



■ FACILITATE HANDLING

Children protection enclosures, designs for upper or lower shelf placement for ergonomic access, designs to enable any product selection to be made minimising dropping or spillage in store. Limiting access to people unnecessarily handling produce (e.g. bruising avocados).

CASE STUDIES

[June Lamb](#) [Moana New Zealand](#)
[Edgell Supa Crunch](#) [& SEE](#)
[\(Simplot Australia\)](#)



■ HOW TO ASSEMBLE

Offering clear information/instructions on how to use, assemble, open, close, handle (store), and dispense the product correctly (and why), that is intuitive and visually communicative.

CASE STUDIES

[Healthshare NSW](#)



■ HOW TO COMMUNICATE SHELF LIFE

Instructions on how to freeze or prolong food (e.g. Bread) or leftovers. Improved messaging about increased shelf life through packaging functions (e.g. re-closable, materials and atmosphere combinations.).

CASE STUDIES

[Caps & Closures](#)



■ HOW TO COOK

Clear instructions on how to cook the product to avoid under/overcooking and causing the meal to be spoiled.

CASE STUDIES

[SEE NZ](#)

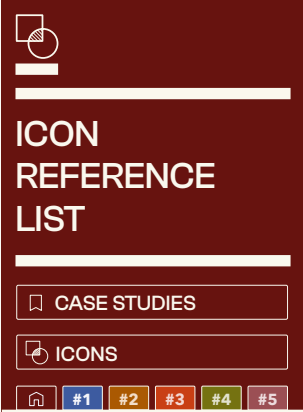


■ HOW TO DISPENSE

Clear instructions on the best methods of removing the product from the packaging without waste.

CASE STUDIES

[Bannister Downs Dairy](#)



ICON REFERENCE LIST

CASE STUDIES

ICONS

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HOW TO EXTEND SHELF LIFE

Instructions on how to freeze or prolong food (e.g. Bread) or leftovers. Improved messaging about increased shelf life through packaging functions (e.g. re-closable, materials and atmosphere combinations.).

CASE STUDIES

[Simsons Pantry Wraps](#)



HOW TO FREEZE

Instructions on how to freeze or prolong food (e.g. Bread) or leftovers. Improved messaging about increased shelf life through packaging functions (e.g. re-closable, materials and atmosphere combinations.).

CASE STUDIES

[Don KRC](#)



HOW TO HANDLE

Offering clear information/instructions on how to use, assemble, open, close, handle (store), and dispense the product correctly (and why), that is intuitive and visually communicative.

CASE STUDIES

[Flavour Creations](#)



HOW TO RECYCLE

Clarify how to recycle packaging, facilitate consumer recycling by designing packaging that is easy to clean, separate and fold, with materials/components compatible for mechanical recycling; refer to the APCO standards or the SPGs.

CASE STUDIES

[Fresh Technologies Ltd](#)

[Planet Protector Packaging](#)

& SEE



HOW TO RESEAL

Offering clear information/instructions on how and why to re-seal the product correctly, that is intuitive and visually communicative.

CASE STUDIES

[Simson's Pantry Wraps](#)



HOW TO REUSE

Recommendations that inspire second use of leftover, uneaten food waste by composting, regrowing, reusing (homemade cosmetics, hygiene products), animal-feed (for livestock, pets, birds etc.).

CASE STUDIES

[Botanical Food Company](#)



HOW TO SAVE FOOD

Designing packaging that informs and promotes produce that is outside retail specifications e.g. ugly fruit, oddly shaped, smaller or discoloured.

CASE STUDIES

[Botanical Food Company](#)



HOW TO USE SMART PACK

Callouts on smart packaging features/technologies to support their acceptance of packaging advancements and purposes. How to use technologies. Intelligent Pack types include: QR codes, RFID, NFC Chips, GPS, Digital Connectors, Image recognition (IR), Time temperature Indicators (TTI). Active pack types include: MAP, Barrier Trays, Skin Packaging, Oxygen Scavengers, Carbon Dioxide Scavengers and emitters, Ethylene absorbers, Antibacterial agents, Antioxidants.

CASE STUDIES

[SEE NZ](#)



HOW TO STORE

Clear messaging on how to store before opening and after opening (e.g. freeze-ability), Communicating best storage practices.

CASE STUDIES

[Botanical Food Company](#)



INCREASED SHELF LIFE

Increased Shelf Life, extending the shelf life to increase the likeliness of entire product usage (e.g. Active and Intelligent Packaging).

CASE STUDIES

[George Weston Foods](#)



INTEGRITY OF MATERIALS

Selection of the appropriate packaging material that will support integrity across its product life considering type, weight, ergonomics, mechanical and chemical properties. Recommendations in considering mono construction structures that support SPGs.

CASE STUDIES

[Moana New Zealand](#)
& [SEE](#)



ON-PACK COMMUNICATION

Improving standard fresh recipe recommendations and offering save-food recipes that use up left over ingredients or prolong the shelf life (e.g. stews, soups, blending, adding sauces, dehydration, preserving and pickling, sun-drying etc.).

CASE STUDIES

[SPC Ardmona](#) [Fresh Technologies Ltd](#)
[Botanical Food Company](#) & [SEE](#)
[Healthshare NSW](#)

ICON REFERENCE LIST

CASE STUDIES

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ON-PACK RECIPES

Suggested recipes displayed clearly on the packaging.

CASE STUDIES

[Fresh Technologies Ltd](#) [Caps & Closures](#)
& [SEE](#) [SEE NZ](#)



PORTION CONTROL

Available in various sizes, e.g. smaller packaging portions. Reduce excess buying by providing appropriate sizing. Product offered in portions suitable to household needs to avoid food expiry. Packaging with compartments that can be opened individually or easily reclosable sections.

CASE STUDIES

[Edgell Supa Crunch](#) [Hazeldene's Chicken Farm](#)
([Simplot Australia](#)) & [SEE](#)
[Bannister Downs Dairy](#) [Botanical Food Company](#)
[Flavour Creations](#) [Healthshare NSW](#)
[SPC Ardmona](#) [Caps & Closures](#)
[Australian Table Grape Association \(ATGA\)](#)



PRESERVE & EXTEND SHELF LIFE

Increased Shelf Life, extending the shelf life to increase the likeliness of entire product usage (e.g. Active and Intelligent Packaging).

CASE STUDIES

[June Lamb](#) [Fresh Technologies Ltd](#)
[Planet Protector Packaging](#) & [SEE](#)
[Hazeldene's Chicken Farm](#) [Simson's Pantry Wraps](#)
& [SEE](#) [Healthshare NSW](#)
[Don KRC](#)



PRODUCT BARRIER

Protection against undesired (transmission, permeation, migration, absorption of light, gases, moisture, flavour, odour, particles, microorganisms, contamination, oxygen, water or other agents from surrounding atmosphere, maintaining quality, safety and hygiene.

CASE STUDIES

[Moana New Zealand](#) & [SEE](#)



PROTECT THE PRODUCT

Protection against outer physical impacts - shock, vibration, compression, puncture, insects, rodents, breakage and spoilage, leakage, resist pressure, strikes, rips, sharp edges, and a reliable product closure.

CASE STUDIES

[June Lamb](#) [Fresh Technologies Ltd](#)
[Planet Protector Packaging](#) & [SEE](#)
[Hazeldene's Chicken Farm](#) [Southern Fresh Foods](#)
& [SEE](#) [Flavour Creations](#)
[Don KRC](#) [Botanical Food Company](#)



QUALITY DESIGN

By using quality printing and materials that avoid barcode damage and packaging branding, imagery, messages, and instructions that may cause consumer rejection.

CASE STUDIES

[GS 1 Australia](#) & [Woolworths](#)



QUALITY SEALING

Keeping the packaging tight to avoid product leakage or atmospheric ingress.

CASE STUDIES

[Junee Lamb](#)



ROBUST DESIGN

Designing packaging capable of maintaining product integrity within the varied warehousing conditions, including the movement into, storing, and out of the locations with efficiency.

CASE STUDIES

[SPC Ardmona](#)



READY MEALS

Pre-prepared meals requiring little additional preparation before consumption.

CASE STUDIES

[Healthshare NSW](#)

[SEE NZ](#)

[Don KRC](#)

[Hazeldene's Chicken Farm](#)

[& SEE](#)



SAVE FOOD RECIPES

Improving standard fresh recipe recommendations and offering save-food recipes that use up left over ingredients or prolong the shelf life (e.g. stews, soups, blending, adding sauces, dehydration, preserving and pickling, sun-drying etc.).

CASE STUDIES

[SPC Ardmona](#)

[Australian Table Grape](#)

[Association \(ATGA\)](#)

[GS 1 Australia & Woolworths](#)



RETAINS NUTRITION

Retaining Nutrition, packaging design that extends nutritional value and quality to increase the likeliness of entire product usage.

CASE STUDIES

[Caps & Closures](#)

[Moana New Zealand & SEE](#)



STABLE DESIGN

Designing packaging that is stable in transport, storage, stacking, retail shelves and displays and in the household environment, to reduce toppling and product damage or spillage.

CASE STUDIES

[Botanical Food Company](#)



SUSTAINABLE PACKAGING

Ensuring sustainable packaging Designed to gain greatest buy-in from consumers to join the fight in food waste. Life Cycle Assessments (LCA) incorporating data measurements of food types sold and wasted. Use SPGs and phasing out single use plastics will gain greater trust with consumers.

CASE STUDIES

[Southern Fresh Foods](#) [SEE NZ](#)



SUSTAINABLE PACKAGING TARGETS

Adopt, familiarise, and promote Sustainable Targets and Practices in all NPDs.

CASE STUDIES

[Caps & Closures](#)



TEMPERATURE CONTROL

Keeping the product at optimal temperatures, maintaining the properties of the packaging, when considering specific supply chain (ambient, chilled, frozen environment).

CASE STUDIES

[Caps & Closures](#)



TEST CONSUMER SENSORY EXPERIENCE

Testing consumers Sensory enjoyment and experience when appraising new SFP developments and the products contained (touch, see, smell etc.).

CASE STUDIES

[Caps & Closures](#)



TEST FOOD VS PACKAGING WASTE

Testing consumers acceptance of the balance/tradeoff decisions made between Sustainable packaging and Food waste reduction strategies.

CASE STUDIES

[Botanical Food Company](#)

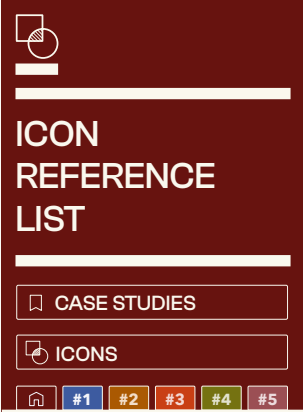


TEST SAVE FOOD WASTE DESIGN

Testing consumers acceptance of the proposed SFP Innovations prior to commercialisation. Consumer knowledge and levels of awareness, interest, and appreciation of these functions of packaging are major factors in their refusal or acceptance of emerging packaging technologies (Brennan et al (2021).

CASE STUDIES

[Caps & Closures](#)



COOPERATIVE
ICON
REFERENCE
LIST

CASE STUDIES

ICONS

#1 #2 #3 #4 #5



VENTILATED DESIGN

Protection against undesired (transmission, permeation, migration, absorption of light, gases, moisture, flavour, odour, particles, microorganisms, contamination, oxygen, water or other agents from surrounding atmosphere, maintaining quality, safety and hygiene.

CASE STUDIES

[Edgell Supa Crunch](#)
([Simplot Australia](#))



WHEN TO CONSUME

Offering clear information/instructions on how to consumer the product at the optimal time or preparation (e.g. ripeness of avocados or bananas).

CASE STUDIES

[Caps & Closures](#)



WHY TO PACKAGE

Callouts on the importance of packaging (e.g. supports distribution and maintains quality of product).

CASE STUDIES

[Botanical Food Company](#)

A

APPENDICES

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ABOUT THIS PROJECT

Packaging can play a significant role in saving food from unnecessary waste. Packaging can reduce food waste through optimal designs that contain and protect; preserve and extend shelf life; provide consumer convenience; communicate best usage; and balance between sustainable packaging and food waste. This criteria considers the four main pillars packaging serves: **1. The People** (all stakeholders including consumers); **2. The Planet** (sustainable practices and waste); **3. The Product** (reducing unnecessary waste); and **4. The Profit** (developing innovations that add value to businesses and consumers).

This project aims to research, collate and synthesise the academic and industry language that describes all forms of design criteria for SFP. It has identified 5 key functional criteria categories that align research sourced from academic peer-reviewed articles, globally recognised reports, and Australian Packaging bodies that promote mitigating food waste through packaging strategies. These 5 key criteria categories are identified on [page 10](#).

PROJECT PARTNERS

SAVE FOOD PACKAGING CONSORTIUM



RESEARCH PARTNER:



PROJECT CONTRIBUTORS:



AIP PARTNERS:



EXTENSION NETWORK PARTNERS:



PROJECT TITLE: SAVE FOOD PACKAGING CRITERIA AND FRAMEWORK 1.2.1

PROJECT LEADER: AUSTRALIAN INSTITUTE OF PACKAGING (AIP)

METHODOLOGY

A literature review was conducted across peer-reviewed articles and flagship grey literature, mapping and comparing the descriptive language used across academia and industry. This was to scope the terms and definitions of recommended and adopted SFP strategies. The search parameters for data collection were as follows:

- Science Direct (Elsevier), Google Scholar, and Scopus databases were accessed.
- Three tiered Boolean keyword searches were conducted for each search with a fourth tier adding descriptive variables:
 - Tier 1: “Food Packaging”
 - Tier 2: “Development”
 - Tier 3: “Food Waste”
 - Tier 4: 63 x Descriptive Variables (refer to **Graph 1** on following page)

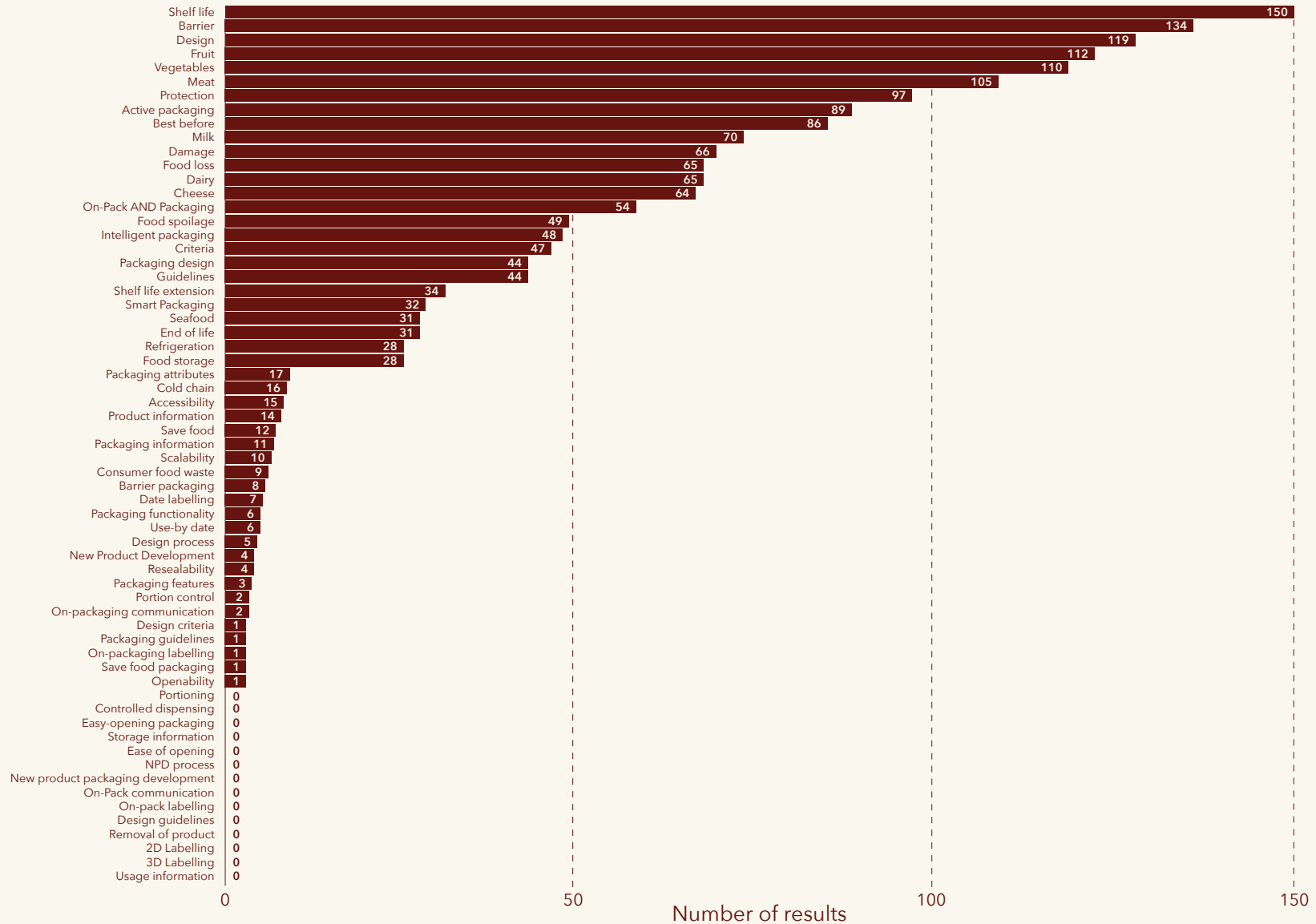
A total of 192 articles were collated for review. Articles could be reported in multiple topics within the 63 Descriptive Variables. “Shelf Life” being the most frequent reported topic with 150 articles noting its importance in the field of food packaging development and food waste. The articles were measured on relevance to the research aim: To map and synergise academic and industry language used to categorise packaging design strategies that play a role in reducing food waste. 15 articles were identified as highly relevant sources contributing highly cited significant discussions on categorisation for SFP design strategies and presenting ideas on criteria for best practice. All 15 sources are cited as references.

The SFP strategies were clustered on levels of functional benefits to end-users with a plain language descriptor provided on its value of application. This amalgamation of language was compiled into a database with synergies and gaps identified. Five key criteria emerged with sub-categories founded on frequency of use. An independent Communication Designer visualised each identified SFP strategy into a representative icon integrated with the plain language descriptor. These icons visually connect the SFP criteria with best practice case studies available for industry reference and provide a benchmark from academic and industry leaders in the field of fighting food waste. It provides a relevant sense check for business NPPD goals and sustainability missions.

GRAPH 1: FOURTH-TIER SEARCH TERM RESULTS

Inclusive of 'Food Packaging' AND 'Development' AND 'Food Waste'

Fourth-Tier Search Terms



Data sourced
from 2014 to 2023

4P MATRIX

Assess your new product packaging designs against the 4P Matrix - People, Planet, Product, and Profit



PROFIT
 (value to people)



PEOPLE x PROFIT

How does your packaging communicate the value of the food waste strategies, increase awareness and willingness to adopt such packaging innovations? I.e. could you expand your product/ packaging offerings to meet the various household sizes and needs (e.g. portion control) to reduce food waste and increase market share and profit?



PLANET x PROFIT

How will you profit from the growing consumer trend towards sustainable packaging design? What investments will you make to promote to consumers on-pack the acceptable balances between saving food waste and circular packaging design or packaging waste.



PEOPLE x PRODUCT

Have you mapped out a stakeholder map? How will your new packaging design protect the product and meet the needs of the people the packaging serves? (People: e.g. company selling the product, supply chain stakeholders, retailers, consumers, the packaging end of life processors etc.)



PLANET x PRODUCT

How can you communicate and action food waste reduction? Is your business mission to meet the UN Sustainability Development Goals (SDGs) and National Packaging Targets (NPTs) to build a better future for us and the next gen?



PEOPLE
 (all stakeholder needs)



PLANET
 (sustainability)

ACRONYMS AND ASSOCIATED NAMES

NAME	ACRONYM
ACTIVE DIGITAL IDENTITY™	ADI
AUSTRALASIAN RECYCLING LABEL	ARL
AUSTRALIAN FOOD AND GROCERY COUNCIL	AFGC
AUSTRALIAN FOOD COLD CHAIN COUNCIL	AFCCC
AUSTRALIAN INSTITUTE OF FOOD SCIENCE AND TECHNOLOGY	AIFST
AUSTRALIAN INSTITUTE OF PACKAGING	AIP
AUSTRALIAN PACKAGING COVENANT ORGANISATION	APCO
CRYSTALLINE POLYETHYLENE TEREPHTHALATE	CPET
EXPANDED POLYSTYRENE	EPS
END FOOD WASTE COOPERATIVE RESEARCH CENTRE	EFW CRC
FOOD AND DRUG ADMINISTRATION	FDA
FOOD LOSS AND WASTE	FLW
FOOD STANDARDS AUSTRALIA NEW ZEALAND	FSANZ
FOREST STEWARDSHIP COUNCIL	FSC
IMAGE RECOGNITION	IR

NAME	ACRONYM
LIFECYCLE ASSESSMENT	LCA
MATERIAL RECOVERY FACILITY	MRF
MODIFIED ATMOSPHERE PACKAGING	MAP
NATIONAL PACKAGING TARGETS	NPTs
NEAR FIELD COMMUNICATION CHIPS	NFC Chips
NEW PRODUCT DEVELOPMENT	NPD
NEW PRODUCT PACKAGING DEVELOPMENT	NPPD
OXYGEN TRANSFER RATE	OTR
PACKAGING RECYCLABILITY EVALUATION PORTAL	PREP
RADIO FREQUENCY IDENTIFICATION	RFID
SAVE FOOD PACKAGING	SFP
SAVE FOOD PACKAGING CRITERIA AND FRAMEWORK 1.2.1	SFPCF
SUSTAINABILITY PACKAGING GUIDELINES	SPGs
TIME TEMPERATURE INDICATORS	TTI
UN SUSTAINABILITY DEVELOPMENT GOALS	SDGs
WATER VAPOR TRANSMISSION RATE	WVTR

SAVE FOOD PACKAGING CRITERIA CHECKLIST

PRODUCT PROTECTION PROPERTIES

PROTECT THE PRODUCT

Protection against outer physical impacts – shock, vibration, compression, puncture, insects, rodents, breakage and spoilage, leakage, resist pressure, strikes, rips, sharp edges, and a reliable product closure.

PRODUCT BARRIER/VENTILATED DESIGN

Protection against undesired (transmission, permeation, migration, absorption of light, gases, moisture, flavour, odour, particles, micro-organisms, contamination, oxygen, water or other agents from surrounding atmosphere, maintaining quality, safety and hygiene.

QUALITY SEALING

Keeping the packaging tight to avoid product leakage or atmospheric ingress.

TEMPERATURE CONTROL/FREEZER SAFE

Keeping the product at optimal temperatures, maintaining the properties of the packaging, when considering specific supply chain (ambient, chilled, frozen environment).

IN-STORE INTERVENTION PROTECTIONS

ANTI-TAMPER PROTECTION

Anti – theft, pilferage, tampering, vandalism, and counterfeiting that informs consumers that the authenticity and integrity has been kept.

NUTRITION AND SHELF LIFE EXTENSION

PRESERVE/EXTEND SHELF LIFE

Increased Shelf Life, extending the shelf life to increase the likelihood of entire product usage (e.g. Active and Intelligent Packaging).

RETAINS NUTRITION

Retaining Nutrition, packaging design that extends nutritional value and quality to increase the likelihood of entire product usage.

RESEAL- RECLOSE, PRESERVES AFTER FIRST OPEN

EASY TO RESEAL

Easy to reseal properly resealing after opening to maintain product quality and reduce spillage.

TRANSPARENCY

EASY TO TRACE

Accessible information for ease of recalls, education and alerts, (batch number, origin, destination).

EASY TO AUTHENTICATE

Proof of authenticity provides consumers transparency and assurance of the quality and ethical sourcing of products. This information impacts consumers willingness-to-purchase new food innovations and reduces the likelihood of product fails and unnecessary food waste prior to purchase.

CONTROLLED DISPENSING, USER-FRIENDLINESS

EASY TO OPEN

Easy to open design that avoids spillage, maximises entire product usage.

EASY TO GRIP

Easy to grip design that reduces the risk of dropping e.g. textured laminates, board creasing or external surface ribbing.

CONTROLLED DISPENSING

Easy to dose design enabling measured doses (spout mechanism), slow dosing speed, (surface treatment inside packaging).

EASY TO EMPTY

Easy to empty packaging design (i.e. bottle tube) that allows consumers to access the whole product contents without force. Design that avoids product residue, maximises entire product emptying, enables full product reach or squeeze out, also supports easy of recycling as the product requires to be fully cleaned out of the packaging.

EASY TO FREEZE

Packaging designed for clear and straight-forward freezing options; airtight; stackable.

ACCESSIBLE DESIGN

Packaging is openable, readable and can be used by everyone – however they encounter it.

EASY TO RECYCLE

Easy to know how to recycle and easy to pull apart and pack down suitable for different recycling systems.

READY MEALS

Pre-prepared meals requiring little additional preparation before consumption.

EASY TO PEEL

Designed so that all abilities can easily access the packaging function that assists with peeling the lid of a can, such as enough grip and tabs for easy access.

EFFICIENCY AND INTEGRITY

INTEGRITY OF MATERIALS

Selection of the appropriate packaging material that will support integrity across its product life considering type, weight, ergonomics, mechanical and chemical properties. Recommendations in considering mono construction structures that support SPGs.

EASY TO PACK AND PROCESS

Packaging design fit for supply chain purpose and maximises efficiencies, noting the areas where food loss occurs and where packaging can mitigate these known risks.

EASY TO STACK

Easy to Stack designing packaging with appropriate structure, materials and pack fill to protect the delivery, withstanding the full stacked weight over the transport and storage periods.

STABLE DESIGN

Designing packaging that is stable in transport, storage, stacking, retail shelves and displays and in the household environment, to reduce toppling and product damage or spillage.

COMPACT DESIGN

Designing modular packaging shapes that maximise the volume area (fill rate) allocated for transport and storage, moving greater volumes per truck of fresh products.

ROBUST DESIGN

Designing packaging capable of maintaining product integrity within the varied warehousing conditions, including the movement into, storing, and out of the locations with efficiency.

EASY TO INVENTORY

Designing packaging that clearly presents, or easily makes available (e.g. SSCC / 2D CODES), product information, identifying it for efficient inventory management (e.g. avoid over-ordering or poor stock rotation).

EASY TO REUSE

If applicable, consider the option of packaging that can be repurposed or reused in a way that offers product or packaging life extension.

EASY TO LIFT

Offering the ideal weight for lifting and loading for transporting and consumer access in store. Unified portions weights in each pack to reduce the likelihood of consumers feeling missed out if one pack is less than another.

EASY TO STORE

Designing packaging capable of maintaining product integrity within the varied warehousing conditions, including the movement into, storing, and out of the locations with efficiency.

CONSUMER CONVENIENCE

Easy to empty, packaging design that allows consumers to access the whole product contents without force. Design that avoids product remnants, maximises entire product emptying, enables full product reach or squeeze out, also supports easy of recycling as the product requires to be fully cleaned out of the packaging.

EASY TO CLUSTER

Designing packaging that is easily grouped, clustered, or secured together to aid in handling in transport and minimises unintended product-packaging damage.

FACILITATE HANDLING

Children protection enclosures, designs for upper or lower shelf placement for ergonomic access, designs to enable any product selection to be made minimising dropping or spillage in store. Limiting access to people unnecessarily handling produce (e.g. bruising avocados).

PORTION CONTROL

PORTION CONTROL

Available in various sizes, e.g. smaller packaging portions. Reduce excess buying by providing appropriate sizing. Product offered in portions suitable to household needs to avoid food expiry, packaging with compartments that can be opened individually or easily reclosable sections.

AVAILABLE IN VARIOUS SIZES

Available in various sizes, e.g. smaller packaging portions. Reduce excess buying by providing appropriate sizing.

PACKAGING-RELATED INFORMATION AND INSTRUCTIONS

HOW TO ASSEMBLE/HOW TO HANDLE

Offering clear information/instructions on how to use, assemble, open, close, handle (store), and dispense the product correctly (and why), that is intuitive and visually communicative.

HOW TO RESEAL

Offering clear information/instructions on how and why to re-seal the product correctly, that is intuitive and visually communicative.

QUALITY DESIGN

By using quality printing and materials that avoid barcode damage and packaging branding, imagery, messages, and instructions that may cause consumer rejection.

WHY TO PACKAGE

Callouts on the importance of packaging (e.g. supports distribution and maintains quality of product).

PRODUCT PACKAGING RELATED INFORMATION AND INSTRUCTIONS

EASY TO UNDERSTAND

Clear and concise instructions that a visual, readable and accessible.

WHEN TO CONSUME

Offering clear information/instructions on how to consumer the product at the optimal time or preparation (e.g. ripeness of avocados or bananas).

HOW TO STORE

Clear messaging on how to store before opening and after opening (e.g. freeze-ability), Communicating best storage practices.

HOW TO DISPENSE

Clear instructions on the best methods of removing the product from the packaging without waste.

HOW TO COOK

Clear instructions on how to cook the product to avoid under/overcooking and causing the meal to be spoiled.

HOW TO SAVE FOOD

Designing packaging that informs and promotes produce that is outside retail specifications e.g. ugly fruit, oddly shaped, smaller or discoloured.

EASY/HOW TO IDENTIFY

Through enriched identity markers (e.g.. QR codes) that enable identification, tracking and presentation of information about origin, production, storage, and distribution history and potential communication with consumers to provide transparency of information.

EASY/HOW TO COMMUNICATE SHELF LIFE

Extension or better information on the packaging that explains the dating system (e.g. best-before, use-by datesetc.), if and when the food item could be unhealthy, and how the consumer could judge the quality of the food item, smart labels are also a possibility.

CLEAR VISUAL BRANDING

Improve the connection between packaging visuals and described flavours with the actual product sensory experience to inform people to purchase what they would like to eat prior to purchase (e.g. spice and curry flavour ratings for vegetarian sausages).

ON-PACK COMMUNICATION

Improving standard fresh recipe recommendations and offering save-food recipes that use up left over ingredients or prolong the shelf life (e.g. stews, soups, blending, adding sauces, dehydration, preserving and pickling, sun-drying etc.).

ON-PACK RECIPES

Suggested recipes displayed clearly on the packaging.

EASY TO READ INGREDIENTS

Offering transparency and detailed information for consumers to make informed choices prior to purchase (e.g. clear ingredients, expected flavour descriptions, and clear callouts on allergens and free-from ingredients).

HOW TO EXTEND SHELF LIFE/HOW TO FREEZE

Instructions on how to freeze or prolong food (e.g. Bread) or leftovers. Improved messaging about increased shelf life through packaging functions (e.g. re-closable, materials and atmosphere combinations.).

EASY TO COMMUNICATE

Simple and effective text and visual language to communicate information to the consumer.

PRODUCT-PACKAGING-RELATED VOLUNTARY RECOMMENDATIONS

CALL-OUT STRATEGIES

Call-out strategies to maintain product freshness for longer, such as – I'll last longer if you don't double dip for butter or I'll last longer if you squeeze a little lemon on me and pop me in the fridge for cut avocado.

SAVE FOOD RECIPES

Improving standard fresh recipe recommendations and offering save-food recipes that use up left over ingredients or prolong the shelf life (e.g. stews, soups, blending, adding sauces, dehydration, preserving and pickling, sun-drying etc.).

HOW TO REUSE

Recommendations that inspire second use of leftover, uneaten food waste by composting, regrowing, reusing (homemade cosmetics, hygiene products), animal-feed (for livestock, pets, birds etc).

EASY TO REDIRECT AND RECOVER

Through enriched identity markers that enable identification, tracking and presentation of information about origin, production, storage, and distribution history and potential communication with consumers to provide transparency of information.

HOW TO RECYCLE

Clarify how to recycle packaging, facilitate consumer recycling by designing packaging that is easy to clean, separate and fold, with materials/components compatible for mechanical recycling; refer to the APCO standards or the SPGs.

HOW TO USE SMART PACK

Callouts on smart packaging features/technologies to support their acceptance of packaging advancements and purposes. How to use technologies. Intelligent Pack types include: QR codes, RFID, NFC Chips, GPS, Digital Connectors, Image recognition (IR), Time temperature Indicators (TTI). Active pack types include: MAP, Barrier Trays, Skin Packaging, Oxygen Scavengers, Carbon Dioxide Scavengers and emitters, Ethylene absorbers, Antibacterial agents, Antioxidants.

MATERIAL FACTORS AND ASSESSMENTS

SUSTAINABLE PACKAGING

Ensuring sustainable packaging Designed to gain greatest buy-in from consumers to join the fight in food waste. Life Cycle Assessments (LCA) incorporating data measurements of food types sold and wasted. Use SPGs and phasing out single use plastics will gain greater trust with consumers.

ALIGNING BUSINESS PLANS AND NPDS (NPDS) TO CIRCULAR ECONOMY CRITERIA, STANDARDS, LEGISLATION AND GLOBAL TARGETS

SUSTAINABLE PACKAGING TARGETS

Adopt, familiarise, and promote Sustainable Targets and Practices in all NPDS.

CONSUMER PERCEPTIONS ASSESSMENT OF SFP NPDS

TEST CONSUMER SENSORY EXPERIENCE

Testing consumers Sensory enjoyment and experience when appraising new SFP developments and the products contained (touch, see, smell etc).

TEST FOOD VS PACKAGING WASTE

Testing consumers acceptance of the balance/tradeoff decisions made between Sustainable packaging and Food waste reduction strategies.

TEST SAVE FOOD WASTE DESIGN

Testing consumers acceptance of the proposed SFP Innovations prior to commercialisation. Consumer knowledge and levels of awareness, interest, and appreciation of these functions of packaging are major factors in their refusal or acceptance of emerging packaging technologies (Brennan et al (2021).

END.